Technical Annex on the application of the common specifications of the Register of Infrastructure

According to art. 7 and the Annex of Commission Implementing regulation (EU) 2019/777 of 16 May 2019 on the common specifications for the register of railway infrastructure, as amended by Commission Implementing Regulation (EU) 2023/1694 of 10 August 2023

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1. Revision History

Revision	Date	Created By	Changes
3.1.0	31-03-2025	ERA	• First publication
3.1.1	12-05-2025	ERA	• This version fixes missing axioms for era:Feature, era:SubsidiaryLocation and era:PrimaryLocation.
3.1.2	26-07-2025	ERA	• Added SHACL constraint for era:redLightsRequired country applicability. • Deprecated era:phaseInfoChangeSupplySystem and era:systemSeparationInfoChangeSupplySystem. • Bug fixes in annotation properties and removed the XMLName annotation from the new entities in current legal text. • Added SubsidiaryLocation as subclass of era:Feature. • Removed transitivity to fix the reasoner issue and removed the parent–child relation from era:PrimaryLocation.
3.1.3	05-09-2025	ERA	• Changed the range of properties: era:subsetName, era:subsidiaryLocationName, era:startsAt, era:endsAt. • Added rdfs:subPropertyOf dcterms:identifier to era:hotAxleBoxDetectorIdentification, era:lineId, era:platformId, era:radioNetworkId, and era:tenGISId. • Removed the rdfs:subClassOf axiom of era:CommonCharacteristicsSubset ⊑ rdf:List. • Updated concept schemes: era-skos-SignalTypes and era-skos-referenceSystems.

Revision	Date	Created By	Changes
			• Updated SHACL validations of era:hasPart.
3.1.4	17-10-2025	ERA	• Added era:RunningTrack as domain of era:vehiclesCompatibleTrafficLoad and era:vehicleTypesCompatibleTrafficLoad. • Added missing annotations for deprecated properties using dcterms:isReplacedBy on era:passesThroughTunnel and era:platformEdge. • Modified the range of era:offsetFromOrigin to xsd:double (GitLab #165). • Added era:inNUTS3 and era:passengerFlag with domain era:PrimaryLocation, with corresponding SHACL shapes; also added era:permitUseReflectivePlates. • Added skos:altLabel, updated rdfs:comment, and dcterms:source to era:redLightsRequired. • Added missing era:legalDeadlines to properties that lacked this annotation.
3.1.5	03-12-2025	ERA	• Changed the domain of era:organisationCode from era:OrganisationRole to era:Body according to internal ERA decision on November 26th, 2025. • Added era:maxPermittedTrainLength and the respective SHACL shapes • Added missing owl:SubClassOf from era:NetRelation and era:Feature. • Removed rdf:type owl:FunctionalProperty from era:wheelSetGauge and era:gaugingCheckLocation (issue 205) • Created era:partOfTENT, era:typeOfTraffic, and era:europeanTransportCorridor • Added era:XMLName annotations to new properties, as proposed by CER • Created the TrainDetectionSystemsSpecificChecks SKOS ConceptScheme and the respective SKOS Concepts
3.1.6	23-01-2026	ERA	• Added clarification on era:etcsLevelType. • Removed era:orientation (not used yet; overlaps with era:direction). • Removed skos:editorialNote from era:direction. • Removed the corresponding references to era:orientation from SHACL validation rules. • Deprecated era:permitUseReflectivePlates and era:conditionsUseReflectivePlates. • Updated their status to vs:term_status "archaic". • Deactivated the corresponding SHACL validation rules. • Added subclassOf era:Feature for CommonCharacteristicsSubset.

Revision	Date	Created By	Changes
			• Added era:inSkosConceptScheme annotations for era:linesideDistanceIndicationPositioning and added the corresponding SKOS file.
3.1.7	20-02-2026	ERA	• Created rdfs:seeAlso for mentions of see: inside skos:scopeNote to streamline the references. • Fixed missing era:applicable values for era:platformHeight and era:rbcPhone. • Added the property era:alternativeCode for managing RISC code for OCR+. • Added vs:term_status "unstable" to era:exemptSpecialVehiclesFromATO, era:exemptSpecialVehiclesFromETCS and era:exemptSpecialVehiclesFromRMR. • Added skos:editorialNote indicating that these three properties will be reviewed after the vote of the CCS TSI next amendment. • Changed the range of era:trainIntegrityOnBoardRequired to xsd:boolean. • Removed the legacy enumerated values ("Y","N","Optional") from the ontology. • Updated SHACL validation to require a boolean value (true/false). • Aligned the parameter with its RINF definition as a binary required / not required indication. • Removed restriction 1:1 for era:linesideDistanceIndicationAppearance and updated the list of SKOS values.
3.1.8	03-03-2026	ERA	• Fixed multiple SPARQL-based SHACL constraints: resolved unbound variables, missing path bindings, COALESCE for labels, STR() for IRI comparisons, incorrect concept scheme references, and duplicate-detection logic across various shapes. • Improved SHACL structure: moved sh:severity to sh:NodeShape level, consolidated rdfs:label validation at InfrastructureElement level, and corrected referenced shape and concept scheme URIs. • Removed owl:FunctionalProperty from era:lineReferenceTunnelStart and era:lineReferenceTunnelEnd, and removed the corresponding sh:maxCount 1 SHACL constraints. • Updated domain definitions of ETCS-related properties (RINF index 1.1.1.3.2.X): replaced era:Track/era:RunningTrack with era:ETCS in owl:unionOf domain expressions. • Changed rdfs:range of era:canonicalURI to rdfs:Resource. • Removed dcterms:relation to non-existing era:bridgeWindRestriction.

Revision	Date	Created By	Changes
			• Added missing backward relationships to ERA Ontology from shapes. • Added RINF concept era-lrs:100 'None' and renamed ERATV 'None' concept to 'None - eratv' to disambiguate in LegacyRadioSystems. • Made several ETCS properties, geosparql:asWKT and era:rbcID future-required at warning level for now. • Added missing SHACL shape for era:existenceOfIndustrialRisk (1.1.0.0.1.1). • Fixed HasPartTrackOP SPARQL constraint: replaced broken track type matching with property path for era:Track and subclasses. • Added era-op-types:140 (domestic border points) to the exclusion list in HasPartTrackOP SPARQL constraint.
3.2.0	20-03-2026	ERA	• Fixed conditionsAppliedRegenerativeBraking (1.1.1.2.2.4.1) applicability constraint • Updated SKOS lists and removed the functional property for era:frequencyBandsForDetection. • Added rdf:List as the range for era:hasSequence and era:includes to align with SHACL expectations. • Introduced stricter SHACL rules to prevent misuse of ERA ontology within RINF shapes. • Adjusted era:gsmrConstraintsOperateOnlyInCircuitSwitch to xsd:string and converted it to a datatype property; removed its SKOS linkage. • Corrected RINF index references. • Fixed SHACL SPARQL logic for conditionsAppliedRegenerativeBraking and corrected its concept scheme. • Deprecated tenGISId and removed its SHACL rules. • Clarified Special(Tunnel)Area aspects in line with updated SKOS concept schemes.
3.2.1	30-03-2026	ERA	• Fixed owl:versionIRI (formerly owl:versionURI used). • Clearer validation message for era:nationalLine. • Fixed era:minCount typo in era-sh:RaisedPantographsDistanceAndSpeedShape. • Updated definitions of telematics location parameters based on the Sector Handbook. • Enhanced consistency between the ontology and related shapes.
3.2.2	24-04-	ERA	• Removed functional Property for era:contactStripMaterial ; harmonized range of

Revision	Date	Created By	Changes
	2026		era:maximumContactWireHeight to xsd:double in the ontology and adapted the SHACL shapes. • Removed Siding from the domain of maximumContactWireHeight and adapted the SHACL shapes accordingly. • Added Siding to the domain of verificationINF, demonstrationINF and minimumHorizontalRadius, and adapted the SHACL shapes accordingly. • Added missing XMLName "CRG_Needof555" on usesGroup555. • Removed useless shape references on etcsDegradedSituation and linesideDistanceIndicationFrequency. • Changed domain of conditionsChargingElectricEnergyStorage and permissionChargingElectricEnergyTractionStandstill from ContactLineSystem to PlatformEdge.
3.3.0	19-05-2026	ERA	• Removed rdf:type owl:FunctionalProperty from era:trainDetectionSystemSpecificCheck. • Removed XMLName for era:maxDistConsecutiveAxle as deprecated in RINF. • Removed eratv specific rules from RINF application guide. • Changed era:protectionLegacySystem era:inSkosConceptScheme to http://data.europa.eu/949/concepts/train-protection-legacy-systems/TrainProtectionLegacySystems

2. Scope of This Guide

2.1. Scope of this guide

This is a browsable version of the Technical Annex on the application of the common specifications of the Register of Infrastructure.
The entities and their relationships within the domain of railway infrastructure are compliant with the art. 7 and the Annex of Commission Implementing regulation (EU) 2019/777 of 16 May 2019 on the common specifications for the register of railway infrastructure, as amended by Commission Implementing Regulation (EU) 2023/1694 of 10 August 2023.
The applicability and the data format were discussed and agreed within the specific RINF Topical Working Groups.
It is intended to facilitate its application of the RINF Regulation, but it does not substitute it.
This technical annex provides the details needed to identify and complete the technical characteristics of the railway infrastructure elements.
This document does not introduce any new legally binding advice.
It serves as a clarification tool for legal documents issued for RINF without however dictating in any manner compulsory procedures to be followed and without establishing

any legally binding practice.
The guide needs to be read and used only in conjunction with the RINF Regulation.

2.2. Content of the guide

This Guide is the basic document for all participants of the process of building RINF in European scale: for National Registration Entities (NREs) to build registers and collect data of their respective member states? (MS) network.
The guide delivers the extended definitions of all the objects and parameters of the RINF.
It provides guidance on the most common situations and solutions advised for modelling the railway network.
Examples and variety of possible solutions should support and unify constructions of registers of different MS of the EU.
This guide also delivers wide description of parameters, including their format, utility and explanation.
The instructions for use of the RINF via access to RINF application will be published as deliverable of RINF application ? they are not included in this guide.

Table 1: Namespaces used in the document

cc	http://creativecommons.org/ns#
dcterms	http://purl.org/dc/terms/
eli	http://data.europa.eu/eli/ontology#
era	http://data.europa.eu/949/
foaf	http://xmlns.com/foaf/0.1/
goodrel	http://purl.org/goodrelations/v1#
gsp	http://www.opengis.net/ont/geosparql#
locn	http://w3.org/ns/locn#
org	http://www.w3.org/ns/org#
owl	http://www.w3.org/2002/07/owl#
prov	http://www.w3.org/ns/prov#
rdf	http://www.w3.org/1999/02/22-rdf-syntax-ns#
rdfs	http://www.w3.org/2000/01/rdf-schema#
sf	http://www.opengis.net/ont/sf#
skos	http://www.w3.org/2004/02/skos/core#
time	http://www.w3.org/2006/time#
unit	http://qudt.org/vocab/unit/
vpa	https://w3id.org/vpa#
vs	http://www.w3.org/2003/06/sw-vocab-status/ns#
xsd	http://www.w3.org/2001/XMLSchema#

3. RINF Parameter Groups Hierarchy

- Section of line generic information (1.1.0.0.0)
  - Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
  - National line identification (1.1.0.0.0.2)
  - Operational point at start of section of line (1.1.0.0.0.3)
  - Operational point at end of section of line (1.1.0.0.0.4)
  - Length of section of line (1.1.0.0.0.5)
  - Nature of Section of Line (1.1.0.0.0.6)
- Route book specific parameters (1.1.0.0.1)
  - Industrial risks — locations where it is dangerous for the driver to step out (1.1.0.0.1.1)
  - Operating language (1.1.0.0.1.2 | 1.2.0.0.0.8)
  - Operational regime (1.1.0.0.1.3)
- Running track generic information (1.1.1.0.0)
  - Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
  - Identification of track (1.1.1.0.0.1 | 1.2.1.0.0.2)
  - Normal running direction (1.1.1.0.0.2)
  - Lineside distance indication (1.1.1.0.0.3)
  - Connected to (1.1.1.0.1.2 | 1.2.4.1)
- Infrastructure subsystem (1.1.1.1)
  - Declarations of verification for track (1.1.1.1.1)
    - EC declaration of verification for infrastructure element relating to compliance with the requirements from TSIs applicable to infrastructure subsystem (1.1.1.1.1.1 | 1.2.1.0.1.1 | 1.2.2.0.1.1)
    - EI declaration of demonstration (as defined in Commission 2014/881/EU (2)) relating to compliance with the requirements from TSIs applicable to infrastructure subsystem (1.1.1.1.1.2 | 1.2.1.0.1.2 | 1.2.2.0.1.2)
  - Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)
    - TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)
    - Category of line (1.1.1.1.2.2 | 1.2.1.0.2.2)
    - Part of a Railway Freight Corridor (1.1.1.1.2.3 | 1.2.1.0.2.3)
    - Load capability (1.1.1.1.2.4)
    - National classification for load capability (1.1.1.1.2.4.1)
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    - Railway location of structures requiring specific checks (1.1.1.1.2.4.3)
    - Document with the procedure(s) for static and dynamic route compatibility checks (1.1.1.1.2.4.4)
    - Maximum permitted speed (1.1.1.1.2.5)
    - Temperature range (1.1.1.1.2.6)
    - Maximum altitude (1.1.1.1.2.7)
    - Existence of severe climatic conditions (1.1.1.1.2.8)
  - Line layout (1.1.1.1.3 | 1.2.1.0.3)
    - Gauging (1.1.1.1.3.1.1 | 1.2.1.0.3.4)
    - Railway location of particular points requiring specific checks (1.1.1.1.3.1.2 | 1.2.1.0.3.5)
    - Document with the transversal section of the particular points requiring specific checks (1.1.1.1.3.1.3 | 1.2.1.0.3.6)
    - Standard combined transport profile number for swap bodies (1.1.1.1.3.4)

        - Standard combined transport profile number for semi-trailers (1.1.1.1.3.5)
        - Specific information (1.1.1.1.3.5.1)
        - Gradient profile (1.1.1.1.3.6)
        - Minimum radius of horizontal curve (1.1.1.1.3.7 | 1.2.2.0.3.2)
        - Standard combined transport profile number for containers (1.1.1.1.3.8)
        - Standard combined transport profile number for roller units (1.1.1.1.3.9)
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        - Nominal track gauge (1.1.1.1.4.1 | 1.2.1.0.4.1)
        - Cant deficiency (1.1.1.1.4.2)
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        - Use of eddy current brakes (1.1.1.1.6.2 | 1.2.1.0.4.2)
        - Permission for regenerative braking (1.1.1.2.2.4)
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        - Maximum train deceleration (1.1.1.1.6.1)
        - Use of eddy current brakes (1.1.1.1.6.2 | 1.2.1.0.4.2)
        - Use of magnetic brakes (1.1.1.1.6.3 | 1.2.1.0.4.3)
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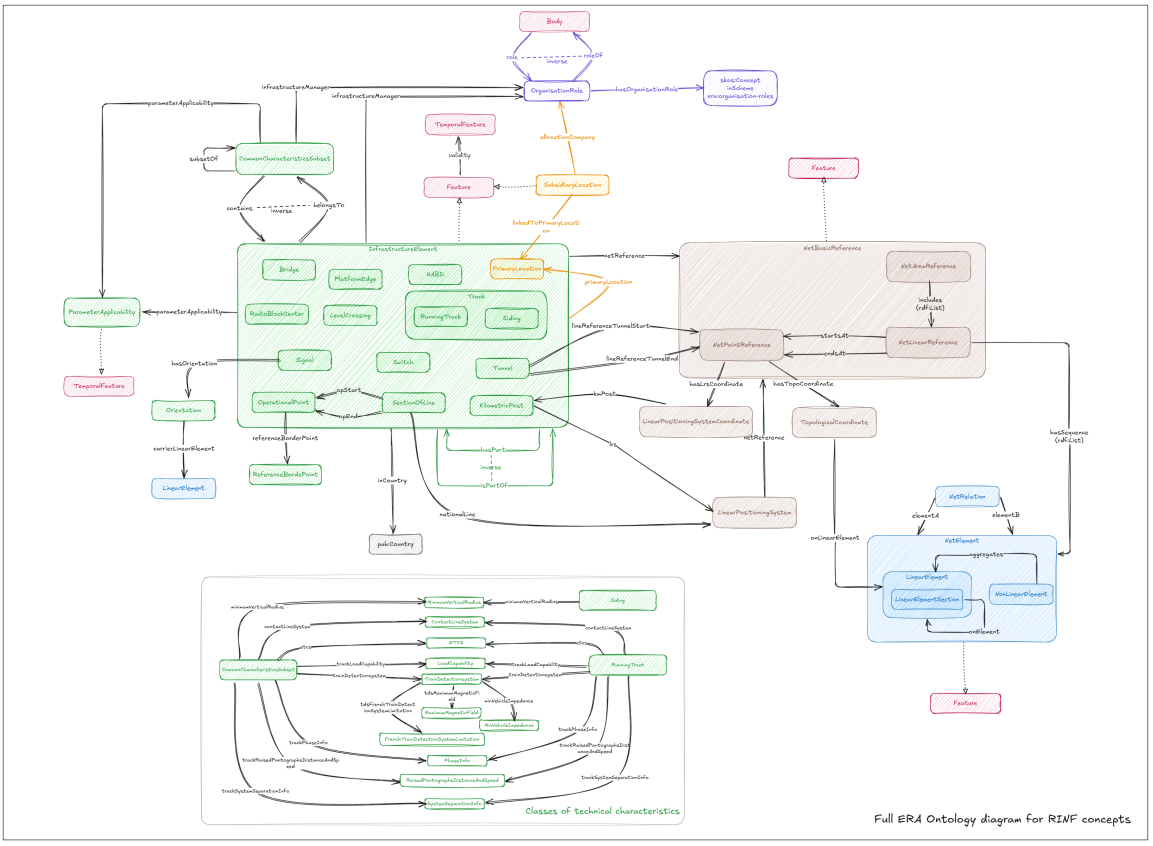
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            - Q_NVEMRRLS (1.1.1.3.2.16.2 | 1.2.1.1.1.16.2)
            - V_NVALLOWOVTRP (1.1.1.3.2.16.3 | 1.2.1.1.1.16.3)
            - V_NVSUPOVTRP (1.1.1.3.2.16.4 | 1.2.1.1.1.16.4)
            - D_NVOVTRP (1.1.1.3.2.16.5 | 1.2.1.1.1.16.5)
            - T_NVOVTRP (1.1.1.3.2.16.6 | 1.2.1.1.1.16.6)
            - D_NVPOTRP (1.1.1.3.2.16.7 | 1.2.1.1.1.16.7)
            - T_NVCONTACT (1.1.1.3.2.16.8 | 1.2.1.1.1.16.8)
            - M_NVCONTACT (1.1.1.3.2.16.9 | 1.2.1.1.1.16.9)
            - M_NVDERUN (1.1.1.3.2.16.10 | 1.2.1.1.1.16.10)
            - Q_NVDRIVER_ADHES (1.1.1.3.2.16.11 | 1.2.1.1.1.16.11)
            - Q_NVSBTSMPERM (1.1.1.3.2.16.12 | 1.2.1.1.1.16.12)
            - National Values used for the brake model (1.1.1.3.2.16.13 | 1.2.1.1.1.16.13)
        - ID of ERTMS/ETCS Radio Block Center (1.1.1.3.2.17 | 1.2.1.1.1.17)
        - Phone number of ERTMS/ETCS Radio Block Center (1.1.1.3.2.17 | 1.2.1.1.1.17)

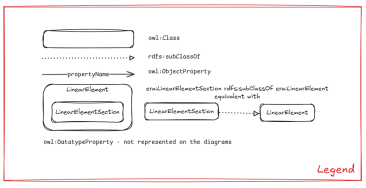
        - Big Metal Mass (1.1.1.3.2.18 | 1.2.1.1.1.18)
        - Document with operating restrictions or conditions
    - TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)
        - GSM-R version (1.1.1.3.3.1 | 1.2.1.1.2.1)
        - Number of active GSM-R mobiles (EDOR) or simultaneous communication session on board for ETCS level 2 needed to perform radio block centre handovers without having an operational disruption (1.1.1.3.3.2 | 1.2.1.1.2.2)
        - Optional GSM-R functions (1.1.1.3.3.3 | 1.2.1.1.2.3)
        - Additional information on network characteristics (1.1.1.3.3.3.1 | 1.2.1.1.2.3.1)
        - GPRS for ETCS (1.1.1.3.3.3.2 | 1.2.1.1.2.3.2)
        - Area of implementation of GPRS (1.1.1.3.3.3.3 | 1.2.1.1.2.3.3)
        - GSM-R use of group 555 (1.1.1.3.3.4 | 1.2.1.1.2.4)
        - GSM-R networks covered by a roaming agreement (1.1.1.3.3.5 | 1.2.1.1.2.5)
        - Existence of GSM-R roaming to public networks (1.1.1.3.3.6 | 1.2.1.1.2.6)
        - Details on GSM-R roaming to public networks (1.1.1.3.3.7 | 1.2.1.1.2.7)
        - No GSMR coverage (1.1.1.3.3.8 | 1.2.1.1.2.8)
        - Radio system compatibility voice (1.1.1.3.3.9 | 1.2.1.1.2.9)
        - Radio system compatibility data (1.1.1.3.3.10 | 1.2.1.1.2.10)
        - GSM-R network is configured to allow forced de-registration of a functional number by another driver (1.1.1.3.3.11 | 1.2.1.1.2.11)
        - Radio Network ID (1.1.1.3.3.12 | 1.2.1.1.2.13)
        - Specific constraints imposed by the GSM-R network operator on ETCS on-board units only able to operate in circuit-switch (1.2.1.1.2.12)
    - Train detection systems defined based on frequency bands (1.1.1.3.4 | 1.2.1.1.3)
        - Existence of train detection system fully compliant with the TSI (1.1.1.3.4.1 | 1.2.1.1.3.1)
        - Frequency bands for detection (1.1.1.3.4.2 | 1.2.1.1.3.2)
        - Evaluation parameters if maximum interference current is not measured in the preferred bands (1.1.1.3.4.2.1 | 1.2.1.1.3.2.1)
        - Maximum interference current (1.1.1.3.4.2.1 | 1.2.1.1.3.2.1)
        - Vehicle impedance (1.1.1.3.4.2.2 | 1.2.1.1.3.2.2)
        - Maximum magnetic field (1.1.1.3.4.2.3 | 1.2.1.1.3.2.3)
    - Train protection legacy systems (1.1.1.3.5 | 1.2.1.1.4)
        - Train protection legacy system (1.1.1.3.5.3 | 1.2.1.1.4.1)
    - Radio Legacy Systems (1.1.1.3.6 | 1.2.1.1.5)
        - Class B or other radio systems installed (Radio Legacy Systems) (1.1.1.3.6.1 | 1.2.1.1.5.1)
    - Other train detection systems (1.1.1.3.7 | 1.2.1.1.6)
        - Type of train detection system (1.1.1.3.7.1.1 | 1.2.1.1.3.1.1)
        - Type of track circuits or axle counters to which specific checks are needed (1.1.1.3.7.1.2 | 1.2.1.1.6.1)
        - Document with the procedure(s) related to the type of train detection systems declared in "Type of track circuits or axle counters to which specific checks are needed" (1.1.1.3.7.1.3 | 1.2.1.1.6.2)
        - Section with train detection limitation (1.1.1.3.7.1.4 | 1.2.1.1.6.3)
    - Transitions between systems (1.1.1.3.8 | 1.2.1.1.7)
        - Existence of switch over between different protection, control and warning systems while running (1.1.1.3.8.1 | 1.2.1.1.7.1)

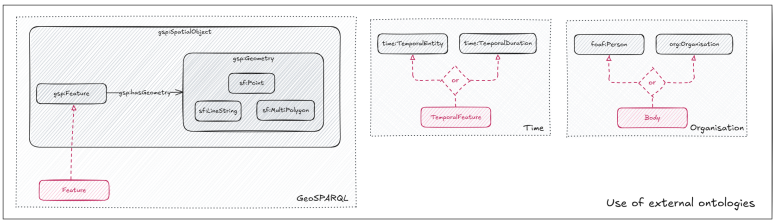
        - Special conditions to switch over between different class B train protection, control and warning systems (1.1.1.3.8.1.1 | 1.2.1.1.7.1.1)
        - Existence of switch over between different radio systems (1.1.1.3.8.2 | 1.2.1.1.7.2)
        - Special instructions to switch over between different radio systems (1.1.1.3.8.2.1 | 1.2.1.1.7.2.1)
        - Special technical conditions required to switch over between ERTMS/ETCS and Class B systems (1.1.1.3.8.3 | 1.2.1.1.7.3)
    - Parameters related to electromagnetic interferences (1.1.1.3.9 | 1.2.1.1.8)
        - Existence and TSI compliance of rules for magnetic fields emitted by a vehicle (1.1.1.3.9.1 | 1.2.1.1.8.1)
        - Existence and TSI compliance of limits in harmonics in the traction current of vehicles (1.1.1.3.9.2 | 1.2.1.1.8.2)
    - Line-side system for degraded situation (1.1.1.3.10 | 1.2.1.1.9)
        - ETCS level for degraded situation (1.1.1.3.10.1 | 1.2.1.1.9.1)
        - Other train protection, control and warning systems for degraded situation (1.1.1.3.10.2 | 1.2.1.1.9.2)
    - Brake related parameters (1.1.1.3.11)
        - Maximum braking distance requested (1.1.1.3.11.1)
        - Availability by the IM of additional information (1.1.1.3.11.2)
        - Documents available by the IM relating to braking performance (1.1.1.3.11.3)
    - Automated Train Operation (ATO) (1.1.1.3.13 | 1.2.1.1.10)
        - ATO Grade of Automation (1.1.1.3.13.1 | 1.2.1.1.10.1)
        - ATO System version (1.1.1.3.13.2 | 1.2.1.1.10.2)
        - ATO communication system (1.1.1.3.13.3 | 1.2.1.1.10.3)
    - Signal (1.1.1.3.14)
        - Name of signal (1.1.1.3.14.1 | 1.2.1.0.8.1)
        - Type of signal (1.1.1.3.14.2 | 1.2.1.0.8.2)
        - Signal orientation (1.1.1.3.14.3 | 1.2.1.0.8.3)
        - Relative distance of the danger point (1.1.1.3.14.4 | 1.2.1.0.8.4)
        - Kilometer number (1.2.0.0.0.6)
- Rules and restrictions (1.1.1.4 | 1.2.3)
    - Existence of rules and restrictions of a strictly local nature (1.1.1.4.1 | 1.2.3.1)
    - Documents regarding the rules or restrictions of a strictly local nature available by the IM (1.1.1.4.2 | 1.2.3.2)
- Vehicles for which Route compatibility is verified (1.1.1.5)
    - List of vehicle types already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems (1.1.1.5.1)
    - List of vehicles already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems (1.1.1.5.2)
- Operational point generic information (1.2.0.0.0)
    - Name of operational point (1.2.0.0.0.1)
    - Unique OP ID (1.2.0.0.0.2)
    - Primary location (1.2.0.0.0.3)
    - Type of operational point (1.2.0.0.0.4)
    - Type of track gauge changeover facility (1.2.0.0.0.4.1)
    - Schematic overview of the operational point in digital form (1.2.0.0.0.7)
    - Schematic overview of the operational point (1.2.0.0.0.7.1)
    - Digital schematic overview (1.2.0.0.0.7.2)
- Platform (1.2.1.0.6)
    - Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
    - TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)

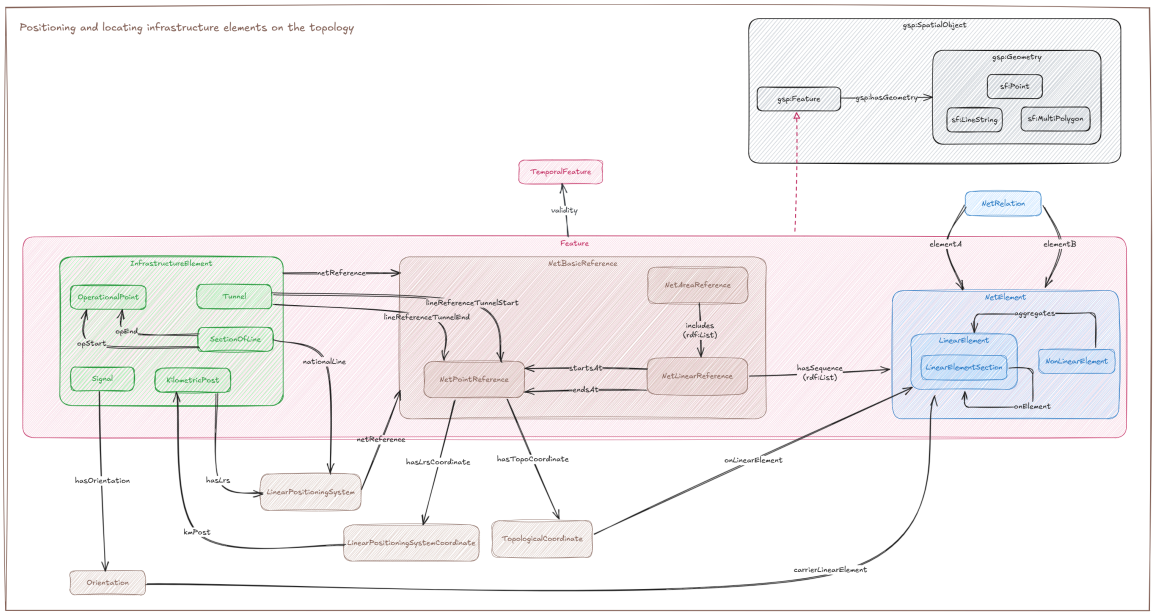
- Identification of platform (1.2.1.0.6.2)
- Usable length of platform (1.2.1.0.6.4)
- Height of platform (1.2.1.0.6.5)
- Existence of platform assistance for starting train (1.2.1.0.6.6)
- Range of use of the platform boarding aid (1.2.1.0.6.7)
- Curvature of the platform (1.2.1.0.6.8)

- Siding (1.2.2)
  - Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
  - TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)
  - Minimum radius of horizontal curve (1.1.1.1.3.7 | 1.2.2.0.3.2)
  - Identification of siding (1.2.2.0.0.2)
  - Usable length of siding (1.2.2.0.2.1)
  - Gradient for stabling tracks (1.2.2.0.3.1)
  - Minimum radius of vertical curve (1.2.2.0.3.3)
  - Fixed installations for servicing trains (1.2.2.0.4)
    - Existence of toilet discharge (1.2.2.0.4.1)
    - Existence of external cleaning facilities (1.2.2.0.4.2)
    - Existence of water restocking (1.2.2.0.4.3)
    - Existence of refuelling (1.2.2.0.4.4)
    - Existence of sand restocking (1.2.2.0.4.5)
    - Existence of electric shore supply (1.2.2.0.4.6)


Body
OrganisationRole
TemporalFeature
Feature
SubsidiaryLocation
InfrastructureElement
NetBasicReference
NetAreaReference
NetPointReference
NetLinearReference
PrimaryLocation
Bridge
Platform Edge
Track
Siding
Signal
Switch
Tunnel
OperationalPoint
SectionOfLine
KilometricPost
ReferenceBorderPoint
LinearElement
LinearPositioningSystem
LinearPositioningSystemCoordinate
TopologicalCoordinate
NetRelation
NetElement
LinearElement
LinearElementSection
NonLinearElement
Classes of technical characteristics
Full ERA Ontology diagram for RINF concepts


owl:Class
rdfs:subClassOf
owl:ObjectProperty
propertyName
LinearElement
LinearElementSection
owl:DatatypeProperty - not represented on the diagrams
Legend


gsp:SpatialObject
gsp:Geometry
gsp:Feature
gsp:hasGeometry
sf:Point
sf:LineString
sf:MultiPolygon
Feature
GeoSPARQL
time:TemporalEntity
time:TemporalDuration
TemporalFeature
Time
foaf:Person
org:Organisation
Body
Organisation
Use of external ontologies


Positioning and locating infrastructure elements on the topology
gsp:SpatialObject
gsp:Geometry
gsp:Feature
gsp:hasGeometry
sf:Point
sf:LineString
sf:MultiPolygon
TemporalFeature
validity
Feature
NetRelation
elementA
elementB
InfrastructureElement
NetBasicReference
NetAreaReference
NetElement
aggregates
OperationalPoint
Tunnel
SectionOfLine
Signol
KilometricPost
netReference
lineReferenceTunnelStart
lineReferenceTunnelEnd
includes (rdf:List)
NetPointReference
NetLinearReference
startsAt
endsAt
hasSequence (rdf:List)
LinearElement
LinearElementSection
NonLinearElement
onElement
opStart
opEnd
nationalLine
hasOrientation
hasLrs
LinearPositioningSystem
hasLrsCoordinate
hasTopoCoordinate
onLinearElement
kmPost
LinearPositioningSystemCoordinate
TopologicalCoordinate
Orientation
carrierLinearElement

4. RINF Ontology Classes

Body C

Is an organisation or a physical person

IRI: *http://data.europa.eu/949/Body*

Is subclass of

Organization
Person

Has RINF parameters

Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)

Has Properties

Alternative Code
Role

Validation

Validation Rules:

Body Shape

Message: Body URI: The instance has a URI that does not follow the required pattern '^http://data.europa.eu/949/'. All instances of era:Body must have URIs starting with http://data.europa.eu/949/.

Bridge C

It is a structure constructed for the exclusive purpose of carrying railroad traffic across an obstruction. It can be used for defining non-stopping areas, big metal mass, resistance to traffic load etc.

IRI: *http://data.europa.eu/949/Bridge*

Is subclass of

Infrastructure element

Validation

Validation Rules:

Bridge Shape

Contact Line System C

System that is used to transmit electrical energy to road or rail vehicles.

IRI: *http://data.europa.eu/949/ContactLineSystem*

Has RINF parameters

Type of contact line system (1.1.1.2.2.1.1)
Energy supply system (Voltage and frequency) (1.1.1.2.2.1.2)
Umax2 for the French network (1.1.1.2.2.1.3)
Maximum train current (1.1.1.2.2.2)
Maximum current at standstill per pantograph (1.1.1.2.2.3 | 1.2.2.0.6.1)
Permission for regenerative braking (1.1.1.2.2.4)
Conditions applying in regards to regenerative braking (1.1.1.2.2.4.1)
Maximum contact wire height (1.1.1.2.2.5)
Minimum contact wire height (1.1.1.2.2.6)
Current or power limitation on board required (1.1.1.2.5.1)

Validation

Validation Rules:

Contact Line System Shape

Message: contactLineSystemType (1.1.1.2.2.1.1): The Contact Line System {$this} ({?clsLabel}), has a 'Not electrified' type, and at least one of its parameters has values for at least one of the range of parameters between 1.1.1.2.2.1.2 and 1.1.1.2.5.3. This happens at least with property {?p} (RINF index {?index}).

ERA Document C

Document in any of the ERA systems, e.g. reference document in RINF.

IRI: *http://data.europa.eu/949/Document*

Is subclass of

Document

Has Properties

Document URL

Validation

Validation Rules:

Document Shape

ERA Feature C

Class that encompasses the features that are part of the physical infrastructure (class InfrastructureElement) and the topological objects (class TopologicalObject). It is a subclass of the geographical Feature class that has a spatial representation.

IRI: *http://data.europa.eu/949/Feature*

Is subclass of

Feature

Is superclass of

Infrastructure element
Net Basic Reference
Net element
Net Relation
Reference border point
Subset with common characteristics
Subsidiary location

Has Properties

Validity

Validation

Validation Rules:

Feature Shape

ETCS [C]

TSI compliant train protection system ERTMS / ETCS application level and baseline related to the track side equipment.

IRI: *http://data.europa.eu/949/ETCS*

Has RINF parameters

European Train Control System (ETCS) level (1.1.1.3.2.1 | 1.2.1.1.1.1)
ETCS infill necessary for line access (1.1.1.3.2.3 | 1.2.1.1.1.3)
ETCS infill installed line-side (1.1.1.3.2.4 | 1.2.1.1.1.4)
Has ETCS national packet 44 application implemented (1.1.1.3.2.5 | 1.2.1.1.1.5)
Existence of operating restrictions or conditions (1.1.1.3.2.6 | 1.2.1.1.1.6)
Train integrity confirmation from on-board (not from driver) necessary for line access (1.1.1.3.2.8 | 1.2.1.1.1.8)
ETCS system compatibility (1.1.1.3.2.9 | 1.2.1.1.1.9)
ETCS M_version (1.1.1.3.2.10 | 1.2.1.1.1.10)
Is the ETCS trackside engineered to transmit Track Conditions (1.1.1.3.2.12 | 1.2.1.1.1.12)
Track conditions which can be transmitted (1.1.1.3.2.12.1 | 1.2.1.1.1.12.1)
ETCS trackside implements level crossing procedure or an equivalent solution (1.1.1.3.2.13 | 1.2.1.1.1.13)
Reasons for which an ETCS Radio Block Center can reject a train (1.1.1.3.2.15 | 1.2.1.1.1.15)
D_NVROLL (1.1.1.3.2.16.1 | 1.2.1.1.1.16.1)
Q_NVEMRRLS (1.1.1.3.2.16.2 | 1.2.1.1.1.16.2)
V_NVALLOWOVTRP (1.1.1.3.2.16.3 | 1.2.1.1.1.16.3)
V_NVSUPOVTRP (1.1.1.3.2.16.4 | 1.2.1.1.1.16.4)
D_NVOVTRP (1.1.1.3.2.16.5 | 1.2.1.1.1.16.5)
T_NVOVTRP (1.1.1.3.2.16.6 | 1.2.1.1.1.16.6)
D_NVPOTRP (1.1.1.3.2.16.7 | 1.2.1.1.1.16.7)
T_NVCONTACT (1.1.1.3.2.16.8 | 1.2.1.1.1.16.8)
M_NVCONTACT (1.1.1.3.2.16.9 | 1.2.1.1.1.16.9)
M_NVDERUN (1.1.1.3.2.16.10 | 1.2.1.1.1.16.10)
Q_NVDRIVER_ADHES (1.1.1.3.2.16.11 | 1.2.1.1.1.16.11)
Q_NVSBTSMPERM (1.1.1.3.2.16.12 | 1.2.1.1.1.16.12)
National Values used for the brake model (1.1.1.3.2.16.13 | 1.2.1.1.1.16.13)

Has Properties

ETCS baseline

Validation

Validation Rules:

Etcsshape

Message: etcsSystemCompatibility (1.1.1.3.2.9, 1.2.1.1.1.9): The ETCS {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-system-compatibilities/ETCSSystemCompatibilities.

Hot Axle Box Detector C

A trackside Hot Axle Box Detector (HABD), necessary for the route compatibility check.
Specific for the French, Italian and Swedish networks

IRI: *http://data.europa.eu/949/HABD*

Is subclass of

Infrastructure element

Has RINF parameters

Trackside HABD TSI compliant (1.1.1.1.7.5)
Identification of trackside HABD (1.1.1.1.7.6)
Generation of trackside HABD (1.1.1.1.7.7)
Railway location of trackside HABD (1.1.1.1.7.8)
Direction of measurement of trackside HABD (1.1.1.1.7.9)

Infrastructure element C

This class encompasses all those classes that represent features that are implemented in the European railway infrastructure. It is a subclass of the ERA Feature that has a spatial representation. It covers tracks, platforms, signals, tunnels, operational points, and sections of line.
A feature that belongs to the infrastructure can be abstracted (hasAbstraction) as a topological object. It also is related to the infrastructure manager through the property infrastructureMgr.

IRI: *http://data.europa.eu/949/InfrastructureElement*

Is subclass of

ERA Feature

Is superclass of

Bridge
Hot Axle Box Detector
Kilometric Post
Level crossing
Operational Point
Platform edge
Primary Location
Radio Block Center

Section Of Line
Signal
Special area
Switch
Track
Tunnel

Has RINF parameters

Operating language (1.1.0.0.1.2 | 1.2.0.0.0.8)
Primary location (1.2.0.0.0.3)

Has Properties

Belongs to
Has part
In country
Infrastructure manager
Is part of
Net reference
Parameter applicability

Validation

Validation Rules:

Infrastructure Element Shape

Message: imCode (1.2.1.0.6.1): Each infrastructure element {$this} with label {?label} refers to a network (subset with common characteristics), that in turn refers to an instance of an OrganisationRole. This instance must have an era:organisationRole pointing to the value era-organisation-roles:IM in the orgRoles SKOS concept scheme. The error is due to a {?value} different from

Kilometric Post [C]

Represents a kilometric post in the linear positioning system.

IRI: *http://data.europa.eu/949/KilometricPost*

Is subclass of

Infrastructure element

Has RINF parameters

Kilometer number (1.2.0.0.0.6)

Has Properties

Has linear referencing system
Kilometric post name
Measured distance

Validation

Validation Rules:

Kilometric Post Shape

Level crossing C

A level crossing is an intersection where a railway line crosses a road or a path at the same level. It can be used for the implementation of the ETCS trackside or to identify potential collision scenarios

IRI: *http://data.europa.eu/949/LevelCrossing*

Is subclass of
Infrastructure element

Validation

Validation Rules:
Level Crossing Shape

Linear Element C

Pieces of tracks composing the topology

IRI: *http://data.europa.eu/949/LinearElement*

Is subclass of
Net element

Is superclass of
Linear Element Section

Has Properties
Length of net linear element
Length of the non-stopping area

Validation

Validation Rules:
Linear Element Shape

Additional Information

General explanation:
This class represents an edge in the topological graph. It represents a linear element in the network.

Linear Element Section C

Represents a section of a linear element.

IRI: *http://data.europa.eu/949/LinearElementSection*

Is subclass of
Linear Element

Has Properties
Applies in both directions
End offset from the origin
On element
Start offset from origin

Validation

Validation Rules:
Linear Element Section Shape

Additional Information

General explanation:
A linear element section is a finer granularity of a linear element, representing a specific portion of it. This concept is introduced to address the cases when a linear element needs to be split such as a part of it is used by a net referencing (more in the paragraph describing the positioning on the network). By using start and end offsets measured from origin of the element in ascending order, sections eliminate the need for intrinsic coordinates and instead rely on distances along the linear element.

Linear Positioning System C

Represents a linear positioning system used for referencing positions on the network.
It can also represent a sequence of one or more sections of line, used for regular railway operations.

IRI: *http://data.europa.eu/949/LinearPositioningSystem*

Has Properties
Line identifier
Net reference
Type of line referencing system

Validation

Validation Rules:
Linear Positioning System Shape

Message: lrsMethod: The linear positionung system {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/lines/ReferenceSystems.

Linear Positioning System Coordinate C

Represents coordinates in a linear positioning system.

IRI: *http://data.europa.eu/949/LinearPositioningSystemCoordinate*

Has Properties

Km post for reference
Offset

Validation

Validation Rules:
Linear Positioning System Coordinate Shape

Lineside indications of distance C

Frequency, appearance and positioning of a sign indicating distance as reference post. Two types of signs are normally available: kilometre post and hectometre post.
- A kilometre post is a lineside sign indicating the distance from a specific point, usually being the starting point of the railway line.
- A hectometre post is a lineside sign indicating a relative distance.

IRI: *http://data.europa.eu/949/LinesideDistanceIndication*

Has Properties

Lineside distance indication appearance
Lineside distance indication frequency
Lineside distance indication positioning

Validation

Validation Rules:
Lineside Distance Indication Shape

Load capability C

A combination of the line category and speed at the weakest point of the track. Each track can have several load capability (structured) values, and each one has values for load model line category and load model speed.

IRI: *http://data.europa.eu/949/LoadCapability*

Has Properties

Load capability line category
Load capability speed

Validation

Validation Rules:
Load Capability Shape

Additional Information

General explanation:

At this step, RINF does not allow to enter additional data referred to additional speed regulations and operating requirements relating to locomotives (e.g., locomotive classes and associated maximum speed) or traffic types (e.g., maximum speed of freight traffic or passenger traffic).

The load capability describes the weakest point of this track within this section of line (which is normally a bridge or other sub-track structure). It is expressed as a combination of the line category and speed permitted for trains exerting loads defined for this line category. The result of the classification process is set out in EN 15528:2021 (Annex A) and referred to in that standard as “Line Category”.

It represents the ability of the infrastructure to withstand the vertical loads imposed by vehicles on the track for regular service as a combination of Line Category with a permitted speed according to EN 15528:2021

More than one combination may be published for the same track if applicable, but it has to be done by repetition of the parameter with one value selected only - that is why 'Y' is given in line 'Can be repeated'.

For the following cases, it is not possible to use EN 15528:20021categories of line classification:
- TSI categories of line P1520 and F1520 (passenger traffic or freight traffic at any speed)
- TSI categories of line P1600 and F1600 (passenger traffic or freight traffic at any speed)

Net Area Reference C

Represents an area reference in the network.

IRI: *http://data.europa.eu/949/NetAreaReference*

Is subclass of

Net Basic Reference

Has Properties

Includes list of linear references

Validation

Validation Rules:

Net Area Reference Shape

Additional Information

General explanation:

It is used for infrastructure elements positioned in relation to the topology as a subnetwork. (e.g.: tunnels, non-stopping area, stations etc.)

Example:

```
Example: non-stopping area, cross section area, area of
implementation of GPRS etc.
```

Net Basic Reference C

Basic positioning reference within the ERA ontology. It represents different types of geographical locations. Geographical coordinates are provided according to the standard World Geodetic System (WGS84).

IRI: *http://data.europa.eu/949/NetBasicReference*

Is subclass of
ERA Feature

Is superclass of
Net Area Reference
Net Linear Reference
Net Point Reference

Validation

Validation Rules:
Net Basic Reference Shape

Additional Information

General explanation:

See also:
https://wiki.railtopomodel.org/wiki/Object_positioning_in_the_network

Net element C

It is a representation of all building blocks of the topology. It references an associated topological network element.

IRI: *http://data.europa.eu/949/NetElement*

Is subclass of
ERA Feature

Is superclass of
Linear Element
Non-Linear Element

Validation

Validation Rules:
Net Element Shape

Additional Information

See also:
https://wiki.railtopomodel.org/wiki/Topological_structure_(network)

Net Linear Reference C

Represents a linear reference in the network.

IRI: *http://data.europa.eu/949/NetLinearReference*

Is subclass of
Net Basic Reference

Has Properties
Ends at
Has sequence
Starts at

Validation

Validation Rules:
Net Linear Reference Shape

Additional Information

General explanation:
It is used for infrastructure elements positioned in relation to the topology as a line, or along a path. (e.g.: tracks, bridges, platform edges, etc.)

Example:

```
Example: tracks, tunnels, bridges, platform edges etc.
```

Net Point Reference C

Represents a point reference in the network.

IRI: *http://data.europa.eu/949/NetPointReference*

Is subclass of
Net Basic Reference

Has Properties
Applies to direction
Has line referencing system coordinate
Has topological coordinate

Validation

Validation Rules:
Net Point Reference Shape

Message: appliesToDirection: The net point reference {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/orientations/Directions.

Additional Information

General explanation:

It is used for infrastructure elements positioned in relation to the topology as a point. (e.g.: signals, ETCS balises, buffer stops, etc.)

Net Relation C

Defines a relation between two elements.

IRI: *http://data.europa.eu/949/NetRelation*

Is subclass of

ERA Feature

Has Properties

Element A
Element B
Is on origin of element A
Is on origin of element B
Navigability

Validation

Validation Rules:

Net Relation Shape

Message: era:navigability: The net relation {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list:
http://data.europa.eu/949/concepts/navigabilities/Navigabilities.

Additional Information

General explanation:

Connectivity and the navigability between consecutive linear elements are resolved by using net relations. It models how different elements are related to each other, representing a transition from one element to another.
Net relations specify where two linear elements connect. This could be at the origin of one element, the end of another, or even at specific offsets along their lengths. For example, two tracks might connect at a junction, with one ending at offset 1500 and the other beginning at offset 0.
NetRelation explicitly models these connections by linking two linear elements (elementA and elementB) and defining their physical or logical relationship.
Net relations also specify the permitted directions of travel:
• AB: Trains can move from element A to element B.
• BA: Trains can move from element B to element A.
• Both: Movement is bidirectional.
• None: No movement is allowed between the two elements.
To make this even more precise, net relations include information about whether the connection is at the origin of each element. For example, a relation might indicate that Track A ends at its origin (offset 0) and connects to Track B at its start (isOnOriginOfElementA and isOnOriginOfElementB).

See also:

https://wiki.railtopomodel.org/wiki/Topological_structure_(network)

Non-Linear Element C

Represents a non-linear element in the network.

IRI: *http://data.europa.eu/949/NonLinearElement*

Is subclass of
Net element

Has Properties
Aggregates

Validation

Validation Rules:
Non Linear Element Shape

Additional Information

General explanation:
Non-linear elements complement the linear structure by serving as connection or interaction points. They represent features such as stations, depots, or complex junctions. They often serve as aggregation points for linear elements, where multiple tracks meet or like logical entities that support operations like passenger boarding or train storage. These elements may optionally aggregate linear elements.

Operational Point C

An operational point (OP) means any location for train service operations, where train services may begin and end or change route, and where passenger or freight services may be provided; operational point also means any location at boundaries between Member States or infrastructure managers.

IRI: *http://data.europa.eu/949/OperationalPoint*

Is subclass of
Infrastructure element

Has RINF parameters
Existence of rules and restrictions of a strictly local nature (1.1.1.4.1 | 1.2.3.1)
Documents regarding the rules or restrictions of a strictly local nature available by the IM (1.1.1.4.2 | 1.2.3.2)
Name of operational point (1.2.0.0.0.1)
Unique OP ID (1.2.0.0.0.2)
Type of operational point (1.2.0.0.0.4)
Type of track gauge changeover facility (1.2.0.0.0.4.1)
Schematic overview of the operational point in digital form (1.2.0.0.0.7)
Schematic overview of the operational point (1.2.0.0.0.7.1)
Digital schematic overview (1.2.0.0.0.7.2)

Has Properties
Reference border point

Validation

Validation Rules:

Operational Point Shape

Message: uopid (1.2.0.0.0.2): The OperationalPoint {$this} with id {?uopid} and label {?opLabel} is a border point that references a ReferenceBorderPoint, but its uopid does not match the borderPointId of the referenced point ('{?uopid}' ≠ '{?refId}').

Organisation Role C

Represents an n-ary relationship between a Body and a role

IRI: *http://data.europa.eu/949/OrganisationRole*

Is superclass of

Vehicle Keeper Marking

Has Properties

Has organisation role
Role of

Validation

Validation Rules:

Organisation Role Shape

Message: OrganisationRole URI: The instance has a URI that does not follow the required pattern '^http://data.europa.eu/949/'. All instances of era:OrganisationRole must have URIs starting with http://data.europa.eu/949/.

Orientation C

Represents the orientation of a railway object in relation to a carrier linear element. It can be described by direction, orientation and side.

IRI: *http://data.europa.eu/949/Orientation*

Has Properties

Carrier linear element
Direction
On side

Validation

Validation Rules:

Orientation Shape

Message: side: The Orientation {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined Sides in the SKOS concept scheme http://data.europa.eu/949/concepts/orientations/Sides.

Parameter applicability C

Applicability interval defines the date interval in which a characteristic of an infrastructure element is applicable. This interval can be applied for any of the technical characteristics or general information of infrastructure elements. This helps identifying planned changes applied to technical parameters over time.

IRI: *http://data.europa.eu/949/ParameterApplicability*

Is subclass of

Temporal Feature

Has Properties

Of parameter
Parameter value
Parameter value type

Validation

Validation Rules:

Parameter Applicability Shape

Message: parameterValueType: The parameter applicability {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/parameterApplicability/ValueTypes.

Phase info C

Indication of required several information on phase separation.

IRI: *http://data.europa.eu/949/PhaseInfo*

Has Properties

Phase info distance type
Phase info Km
Phase info length
Phase info pantograph lowered
Phase info switch off breaker

Validation

Validation Rules:

Phase Info Shape

Platform edge C

Platform for the purpose of RINF is understood as a platform edge. A platform concerns only the part of the structure neighbouring to the track (interfaced with

trains).

IRI: *http://data.europa.eu/949/PlatformEdge*

Is subclass of
Infrastructure element

Has RINF parameters
TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)
Identification of platform (1.2.1.0.6.2)
Usable length of platform (1.2.1.0.6.4)
Height of platform (1.2.1.0.6.5)
Existence of platform assistance for starting train (1.2.1.0.6.6)
Range of use of the platform boarding aid (1.2.1.0.6.7)
Curvature of the platform (1.2.1.0.6.8)
Permission for charging electric energy storage for traction purposes at standstill (1.2.1.0.7.1)
Permitted conditions for charging electric energy storage for traction purposes at standstill (1.2.1.0.7.2)

Validation

Validation Rules:
Platform Edge Shape

Message: Platform height (1.2.1.0.6.5): The platform {$this} with label {?label} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/platform-heights/PlatformHeights.

Primary Location C

Primary Location is a place used by IM to define a path for a train in TAF/TAP TSI framework/messages. This location is a rail point inside the rail network where train starts, ends, stops, or runs through or change line. This location must be managed by an Infrastructure Manager (IM) identified by company code.

Primary locations are identified by single and unique Primary Location codes. Primary location code is allocated based on processes defined by national entity. Primary location codes are used in any kind of TAF/TAP communication.

IRI: *http://data.europa.eu/949/PrimaryLocation*

Is subclass of
Infrastructure element

Has Properties
Container handling flag
Freight flag
Handover point flag
In NUTS-3
Passenger flag
Primary location code
Primary location name

Validation

Validation Rules:

Primary Location Shape

Message: inNUTS3: The PrimaryLocation {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: https://publications.europa.eu/resource/authority/nuts.

Additional Information

Example:

```
Primary locations are for example: stations, yards, halts,
handover points, border points, open access terminals.
```

See also:
http://taf-jsg.info/wp-content/uploads/2025/07/JSG-Handbook-3.7-with-XSD-3.5.1.0.pdf
Handbook 9.3.3 / page 60

Radio Block Center C

ETCS trackside centralised unit controlling ETCS train movements in level 2.

A centralised safety unit that receives train position information via radio and sends movement authorities via radio to trains.

IRI: *http://data.europa.eu/949/RadioBlockCenter*

Is subclass of
Infrastructure element

Has RINF parameters
ID of ERTMS/ETCS Radio Block Center (1.1.1.3.2.17 | 1.2.1.1.1.17)
Phone number of ERTMS/ETCS Radio Block Center (1.1.1.3.2.17 | 1.2.1.1.1.17)

Validation

Validation Rules:
Radio Block Center Shape

Additional Information

See also:
https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32023R1693&qid=1698394526534
https://www.era.europa.eu/system/files/2023-09/index003_-_SUBSET-023_v400.pdf

References:
http://data.europa.eu/eli/reg_impl/2023/1693/oj

Reference border point C

List of reference border points that are specified in the RINF Application Guide.

IRI: *http://data.europa.eu/949/ReferenceBorderPoint*

Is subclass of
ERA Feature

Has Properties
Border point identification

Validation

Validation Rules:
Reference Border Point Shape

Message: ReferenceBorderPoint URI: The instance has a URI that does not follow the required pattern '^http://data.europa.eu/949/'. All instances of era:ReferenceBorderPoint must have URIs starting with http://data.europa.eu/949/.

Running track C

A running track means any track used for train service movements; passing loops and meeting loops on plain line or track connections only required for train operation are not published

IRI: *http://data.europa.eu/949/RunningTrack*

Is subclass of
Track

Has RINF parameters
Identification of track (1.1.1.0.0.1 | 1.2.1.0.0.2)
Normal running direction (1.1.1.0.0.2)
Lineside distance indication (1.1.1.0.0.3)
EC declaration of verification for infrastructure element relating to compliance with the requirements from TSIs applicable to infrastructure subsystem (1.1.1.1.1.1 | 1.2.1.0.1.1 | 1.2.2.0.1.1)
EI declaration of demonstration (as defined in Commission 2014/881/EU (2)) relating to compliance with the requirements from TSIs applicable to infrastructure subsystem (1.1.1.1.1.2 | 1.2.1.0.1.2 | 1.2.2.0.1.2)
TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)
Category of line (1.1.1.1.2.2 | 1.2.1.0.2.2)
Part of a Railway Freight Corridor (1.1.1.1.2.3 | 1.2.1.0.2.3)
Load capability (1.1.1.1.2.4)
National classification for load capability (1.1.1.1.2.4.1)
Compliance of structures with the High Speed Load Model (HSLM) (1.1.1.1.2.4.2)
Railway location of structures requiring specific checks (1.1.1.1.2.4.3)
Document with the procedure(s) for static and dynamic route compatibility checks (1.1.1.1.2.4.4)
Maximum permitted speed (1.1.1.1.2.5)
Temperature range (1.1.1.1.2.6)
Maximum altitude (1.1.1.1.2.7)
Existence of severe climatic conditions (1.1.1.1.2.8)
Gauging (1.1.1.1.3.1.1 | 1.2.1.0.3.4)
Railway location of particular points requiring specific checks (1.1.1.1.3.1.2 | 1.2.1.0.3.5)
Document with the transversal section of the particular points requiring specific checks (1.1.1.1.3.1.3 | 1.2.1.0.3.6)
Standard combined transport profile number for swap bodies (1.1.1.1.3.4)
Standard combined transport profile number for semi-trailers (1.1.1.1.3.5)

Specific information (1.1.1.1.3.5.1)
Gradient profile (1.1.1.1.3.6)
Minimum radius of horizontal curve (1.1.1.1.3.7 | 1.2.2.0.3.2)
Standard combined transport profile number for containers (1.1.1.1.3.8)
Standard combined transport profile number for roller units (1.1.1.1.3.9)
Nominal track gauge (1.1.1.1.4.1 | 1.2.1.0.4.1)
Cant deficiency (1.1.1.1.4.2)
Rail inclination (1.1.1.1.4.3)
Existence of ballast (1.1.1.1.4.4)
TSI compliance of in-service values for switches and crossings (1.1.1.1.5.1)
Minimum wheel diameter for fixed obtuse crossings (1.1.1.1.5.2)
Maximum train deceleration (1.1.1.1.6.1)
Use of eddy current brakes (1.1.1.1.6.2 | 1.2.1.0.4.2)
Use of magnetic brakes (1.1.1.1.6.3 | 1.2.1.0.4.3)
Document with the conditions for the use of eddy current brakes (1.1.1.1.6.4)
Document with the conditions for the use of magnetic brakes (1.1.1.1.6.5)
Use of flange lubrication forbidden (1.1.1.1.7.1)
Existence of level crossings (1.1.1.1.7.2)
Existence of trackside hot axle box detector (HABD) (1.1.1.1.7.4)
Steady red lights required (1.1.1.1.7.10)
Belonging to a quieter route (1.1.1.1.7.11)
Conditions for use of reflective plates (1.1.1.1.7.12.1)
EC declaration of verification for track relating to compliance with the requirements from TSIs applicable to energy subsystem (1.1.1.2.1.1)
EI declaration of demonstration (as defined Recommendation 2014/881/EU) for track relating to compliance with the requirements from TSIs applicable to energy subsystem (1.1.1.2.1.2)
Accepted TSI compliant pantograph heads (1.1.1.2.3.1)
Accepted other pantograph heads (1.1.1.2.3.2)
Requirements for number of raised pantographs and spacing between them, at the given speed (1.1.1.2.3.3)
Contact strip material metallic content (1.1.1.2.3.4)
Permitted contact strip material (1.1.1.2.3.4)
Phase separation (1.1.1.2.4.1.1)
Information on phase separation (1.1.1.2.4.1.2)
System separation (1.1.1.2.4.2.1)
Information on system separation (1.1.1.2.4.2.2)
Distance between signboard and phase separation ending (1.1.1.2.4.3)
Contact force permitted (1.1.1.2.5.2)
Automatic dropping device required (1.1.1.2.5.3)
Document with restriction related to power consumption of specific electric traction unit(s) (1.1.1.2.5.4)
Document with restriction related to the position of Multiple Traction unit(s) to comply with contact line separation (1.1.1.2.5.5)
EC declaration of verification for track relating to compliance with the requirements from TSIs applicable to control, command signalling subsystem (1.1.1.3.1.1)
Error corrections required for the on-board ETCS, GSM-R and/or ATO function (1.1.1.3.1.2 | 1.2.1.1.1.19)
Reasons for Error corrections required, but accepted by the IM for the on-board ETCS, GSM-R and/or ATO function (1.1.1.3.1.2 | 1.2.1.1.1.19)
Safe consist length information from on-board necessary for access the line and SIL (1.1.1.3.2.11 | 1.2.1.1.1.11)
Cant Deficiency used for the basic SSP (1.1.1.3.2.14 | 1.2.1.1.1.14)
Other Cant Deficiency train categories for which the ETCS trackside is configured to provide SSP (1.1.1.3.2.14.1 | 1.2.1.1.1.14.1)
Big Metal Mass (1.1.1.3.2.18 | 1.2.1.1.1.18)
GSM-R version (1.1.1.3.3.1 | 1.2.1.1.2.1)
Number of active GSM-R mobiles (EDOR) or simultaneous communication session on board for ETCS level 2 needed to perform radio block centre handovers without having an operational disruption (1.1.1.3.3.2 | 1.2.1.1.2.2)
Optional GSM-R functions (1.1.1.3.3.3 | 1.2.1.1.2.3)
Additional information on network characteristics (1.1.1.3.3.3.1 | 1.2.1.1.2.3.1)
GPRS for ETCS (1.1.1.3.3.3.2 | 1.2.1.1.2.3.2)

Area of implementation of GPRS (1.1.1.3.3.3.3 | 1.2.1.1.2.3.3)
GSM-R use of group 555 (1.1.1.3.3.4 | 1.2.1.1.2.4)
GSM-R networks covered by a roaming agreement (1.1.1.3.3.5 | 1.2.1.1.2.5)
Existence of GSM-R roaming to public networks (1.1.1.3.3.6 | 1.2.1.1.2.6)
Details on GSM-R roaming to public networks (1.1.1.3.3.7 | 1.2.1.1.2.7)
No GSMR coverage (1.1.1.3.3.8 | 1.2.1.1.2.8)
Radio system compatibility voice (1.1.1.3.3.9 | 1.2.1.1.2.9)
Radio system compatibility data (1.1.1.3.3.10 | 1.2.1.1.2.10)
GSM-R network is configured to allow forced de-registration of a functional number by another driver (1.1.1.3.3.11 | 1.2.1.1.2.11)
Radio Network ID (1.1.1.3.3.12 | 1.2.1.1.2.13)
Existence of train detection system fully compliant with the TSI (1.1.1.3.4.1 | 1.2.1.1.3.1)
Train protection legacy system (1.1.1.3.5.3 | 1.2.1.1.4.1)
Class B or other radio systems installed (Radio Legacy Systems) (1.1.1.3.6.1 | 1.2.1.1.5.1)
Special conditions to switch over between different class B train protection, control and warning systems (1.1.1.3.8.1.1 | 1.2.1.1.7.1.1)
Special instructions to switch over between different radio systems (1.1.1.3.8.2.1 | 1.2.1.1.7.2.1)
Special technical conditions required to switch over between ERTMS/ETCS and Class B systems (1.1.1.3.8.3 | 1.2.1.1.7.3)
Existence and TSI compliance of rules for magnetic fields emitted by a vehicle (1.1.1.3.9.1 | 1.2.1.1.8.1)
Existence and TSI compliance of limits in harmonics in the traction current of vehicles (1.1.1.3.9.2 | 1.2.1.1.8.2)
ETCS level for degraded situation (1.1.1.3.10.1 | 1.2.1.1.9.1)
Other train protection, control and warning systems for degraded situation (1.1.1.3.10.2 | 1.2.1.1.9.2)
Maximum braking distance requested (1.1.1.3.11.1)
Availability by the IM of additional information (1.1.1.3.11.2)
Documents available by the IM relating to braking performance (1.1.1.3.11.3)
ATO Grade of Automation (1.1.1.3.13.1 | 1.2.1.1.10.1)
ATO System version (1.1.1.3.13.2 | 1.2.1.1.10.2)
ATO communication system (1.1.1.3.13.3 | 1.2.1.1.10.3)
Existence of rules and restrictions of a strictly local nature (1.1.1.4.1 | 1.2.3.1)
Documents regarding the rules or restrictions of a strictly local nature available by the IM (1.1.1.4.2 | 1.2.3.2)
Specific constraints imposed by the GSM-R network operator on ETCS on-board units only able to operate in circuit-switch (1.2.1.1.2.12)

Has Properties

Contact line system
Has bridge
Hot axle box detector (HABD)
Maximum train length allowed
Part of TEN-T
Train detection system
TSI compliant train protection system (ETCS)

Validation

Validation Rules:

Running Track Shape

Message: permittedContactForce (1.1.1.2.5.2): This error is due to the track {? trackLabel} , violating the rule: This parameter is applicable ('Y') only if “Overhead contact line (OCL)” is selected for 1.1.1.2.2.1.1.

Additional Information

General explanation:

There might be more than one track within the Section of Line, so then the whole set of data for track has to be repeated for each track within the SoL.

Section Of Line C

A section of line means the part of line between adjacent operational points and may consist of several tracks.

IRI: *http://data.europa.eu/949/SectionOfLine*

Is subclass of

Infrastructure element

Has RINF parameters

National line identification (1.1.0.0.0.2)
Operational point at start of section of line (1.1.0.0.0.3)
Operational point at end of section of line (1.1.0.0.0.4)
Length of section of line (1.1.0.0.0.5)
Nature of Section of Line (1.1.0.0.0.6)
Industrial risks — locations where it is dangerous for the driver to step out (1.1.0.0.1.1)
Operational regime (1.1.0.0.1.3)

Validation

Validation Rules:

Section Of Line Shape

Message: Indication of the trackDirection (1.1.1.0.0.2):): The track {?track} in the Section of Line {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/track-running-directions/TrackRunningDirections.

Additional Information

General explanation:

Each network shall be described using as many SoLs as necessary. Each SoL is generated and identified by OP IDs at start and at end. A SoL only belongs to one Line.

References:

http://data.europa.eu/eli/reg_impl/2019/773/oj

Section with train detection limitation C

Specific for route compatibility check on French network.

IRI: *http://data.europa.eu/949/FrenchTrainDetectionSystemLimitation*

Has Properties

Section with train detection limitation
Section with train detection limitation number, only for French network

Validation

Validation Rules:

French Train Detection System Limitation Shape

Message: Indication of the frenchTrainDetectionSystemLimitationNumber: The train detection system {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/train-detection-numbers/FrenchTrainDetectionSystemLimitationNumbers.

Siding C

IRI: *http://data.europa.eu/949/Siding*

Is subclass of

Track

Has RINF parameters

EC declaration of verification for infrastructure element relating to compliance with the requirements from TSIs applicable to infrastructure subsystem (1.1.1.1.1.1 | 1.2.1.0.1.1 | 1.2.2.0.1.1)
EI declaration of demonstration (as defined in Commission 2014/881/EU (2)) relating to compliance with the requirements from TSIs applicable to infrastructure subsystem (1.1.1.1.1.2 | 1.2.1.0.1.2 | 1.2.2.0.1.2)
TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)
Minimum radius of horizontal curve (1.1.1.1.3.7 | 1.2.2.0.3.2)
Maximum current at standstill per pantograph (1.1.1.2.2.3 | 1.2.2.0.6.1)
Identification of siding (1.2.2.0.0.2)
Usable length of siding (1.2.2.0.2.1)
Gradient for stabling tracks (1.2.2.0.3.1)
Minimum radius of vertical curve (1.2.2.0.3.3)
Existence of toilet discharge (1.2.2.0.4.1)
Existence of external cleaning facilities (1.2.2.0.4.2)
Existence of water restocking (1.2.2.0.4.3)
Existence of refuelling (1.2.2.0.4.4)
Existence of sand restocking (1.2.2.0.4.5)
Existence of electric shore supply (1.2.2.0.4.6)

Validation

Validation Rules:

Siding Shape

Message: TEN classification (1.1.1.1.2.1, 1.2.1.0.2.1, 1.2.1.0.6.3, 1.2.2.0.0.3): The siding {$this} with label {?sidingLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/ten-classifications/TENClassifications.

Additional Information

General explanation:

Sidings are all those tracks where running trains in service movements ends and which are not used for operational routing of a train.

References:

http://data.europa.eu/eli/reg_impl/2019/773/2020-06-16

Signal C

A railway signal is a visual display device (next to the tracks or via a DMI in the cabin) that conveys instructions or provides advance warning of instructions regarding the driver's authority to proceed.

IRI: *http://data.europa.eu/949/Signal*

Is subclass of

Infrastructure element

Has RINF parameters

Name of signal (1.1.1.3.14.1 | 1.2.1.0.8.1)
Type of signal (1.1.1.3.14.2 | 1.2.1.0.8.2)
Signal orientation (1.1.1.3.14.3 | 1.2.1.0.8.3)
Relative distance of the danger point (1.1.1.3.14.4 | 1.2.1.0.8.4)

Has Properties

Has orientation

Validation

Validation Rules:

Signal Shape

Message: Indication of the signalOrientation (1.1.1.3.14.3, 1.2.1.0.8.3):): The signal {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/orientations/OrientationDirections.

Additional Information

General explanation:

Apparatus by means of which a conventional visual or acoustic indication is given, generally concerning the movements/movement authorities of railway vehicles.

See also:

https://www.era.europa.eu/system/files/2023-09/index003_-_SUBSET-023_v400.pdf

References:

http://data.europa.eu/eli/reg_impl/2019/773/2023-09-28

Special area C

Non-stopping Area: Area defined by the Infrastructure Manager where it may not be safe or suitable to stop a train.
Safe Area: Area defined by the Infrastructure Manager where it is safe or suitable to stop and evacuate a train.
Industrial Risk Area: locations where it is dangerous for the driver to step out.

IRI: *http://data.europa.eu/949/SpecialArea*

Is subclass of

Infrastructure element

Is superclass of

Special tunnel area (1.1.1.1.8.12.1 | 1.2.1.0.5.10.1)

Has Properties

Special area type

Validation

Validation Rules:

Special Area Shape

Message: specialAreaType (1.1.0.0.1.1): The value {$concept} for special area type must be from the SpecialAreaTypes concept scheme.

Additional Information

General explanation:

Encompasses all those areas (outside of the operational gauge) or sections (those in tunnels excluded) which influence operation in the gauge itself, such as
- safe areas, with the location value provided as Kilometric point of the start;
- restricted areas (non-stopping areas or industrial risk locations).

For these areas in tunnels, use era:SpecialTunnelArea.
Their length MUST be expressed using `era:length`.

References:

http://data.europa.eu/eli/reg_impl/2019/773/oj

Special tunnel area C

Area or location within a tunnel:
- a safe area: a walkway, evacuation and rescue points, with the location value provided as Kilometric point of the start;
- a restricted area (non-stopping area or industrial risk location in a tunnel);
- an area with special passing protocols

IRI: *http://data.europa.eu/949/SpecialTunnelArea*

Is subclass of

Special area

Validation

Validation Rules:

Special Tunnel Area Shape

Additional Information

General explanation:

Their length MUST be expressed using `era:length`.

References:

http://data.europa.eu/eli/reg_impl/2019/773/oj

Subset with common characteristics C

A set of different infrastructure objects sharing the same common technical characteristics. The parameters may not be restricted to only one railway subsystem, but it can include common characteristics from each one of them (infrastructure, energy, track-side CCS)

IRI: *http://data.europa.eu/949/CommonCharacteristicsSubset*

Is subclass of

ERA Feature

Has RINF parameters

Industrial risks — locations where it is dangerous for the driver to step out (1.1.0.0.1.1)
Lineside distance indication (1.1.1.0.0.3)
EC declaration of verification for infrastructure element relating to compliance with the requirements from TSIs applicable to infrastructure subsystem (1.1.1.1.1.1 | 1.2.1.0.1.1 | 1.2.2.0.1.1)
EI declaration of demonstration (as defined in Commission 2014/881/EU (2)) relating to compliance with the requirements from TSIs applicable to infrastructure subsystem (1.1.1.1.1.2 | 1.2.1.0.1.2 | 1.2.2.0.1.2)
TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)
Category of line (1.1.1.1.2.2 | 1.2.1.0.2.2)
Part of a Railway Freight Corridor (1.1.1.1.2.3 | 1.2.1.0.2.3)
Load capability (1.1.1.1.2.4)
National classification for load capability (1.1.1.1.2.4.1)
Compliance of structures with the High Speed Load Model (HSLM) (1.1.1.1.2.4.2)
Railway location of structures requiring specific checks (1.1.1.1.2.4.3)
Document with the procedure(s) for static and dynamic route compatibility checks (1.1.1.1.2.4.4)
Maximum permitted speed (1.1.1.1.2.5)
Temperature range (1.1.1.1.2.6)
Maximum altitude (1.1.1.1.2.7)
Existence of severe climatic conditions (1.1.1.1.2.8)
Gauging (1.1.1.1.3.1.1 | 1.2.1.0.3.4)
Railway location of particular points requiring specific checks (1.1.1.1.3.1.2 | 1.2.1.0.3.5)
Document with the transversal section of the particular points requiring specific checks (1.1.1.1.3.1.3 | 1.2.1.0.3.6)
Standard combined transport profile number for swap bodies (1.1.1.1.3.4)
Standard combined transport profile number for semi-trailers (1.1.1.1.3.5)
Specific information (1.1.1.1.3.5.1)
Gradient profile (1.1.1.1.3.6)
Minimum radius of horizontal curve (1.1.1.1.3.7 | 1.2.2.0.3.2)
Standard combined transport profile number for containers (1.1.1.1.3.8)
Standard combined transport profile number for roller units (1.1.1.1.3.9)
Nominal track gauge (1.1.1.1.4.1 | 1.2.1.0.4.1)
Cant deficiency (1.1.1.1.4.2)
Rail inclination (1.1.1.1.4.3)
Existence of ballast (1.1.1.1.4.4)
TSI compliance of in-service values for switches and crossings (1.1.1.1.5.1)
Minimum wheel diameter for fixed obtuse crossings (1.1.1.1.5.2)
Maximum train deceleration (1.1.1.1.6.1)
Use of eddy current brakes (1.1.1.1.6.2 | 1.2.1.0.4.2)
Use of magnetic brakes (1.1.1.1.6.3 | 1.2.1.0.4.3)
Document with the conditions for the use of eddy current brakes (1.1.1.1.6.4)
Document with the conditions for the use of magnetic brakes (1.1.1.1.6.5)
Use of flange lubrication forbidden (1.1.1.1.7.1)
Existence of level crossings (1.1.1.1.7.2)

Acceleration allowed near level crossing (1.1.1.1.7.3)
Existence of trackside hot axle box detector (HABD) (1.1.1.1.7.4)
Steady red lights required (1.1.1.1.7.10)
Belonging to a quieter route (1.1.1.1.7.11)
Conditions for use of reflective plates (1.1.1.1.7.12.1)
EC declaration of verification relating to compliance with the requirements from TSIs applicable to railway tunnel (1.1.1.1.8.5 | 1.2.1.0.5.3 | 1.2.2.0.5.3)
EI declaration of demonstration (as defined in Recommendation 2014/881/EU) relating to compliance with the requirements from TSIs applicable to railway tunnel (1.1.1.1.8.6 | 1.2.1.0.5.4 | 1.2.2.0.5.4)
Cross section area (1.1.1.1.8.8)
Compliance of the tunnel with TSI INF (1.1.1.1.8.8.1)
Existence of emergency plan (1.1.1.1.8.9 | 1.2.1.0.5.6 | 1.2.2.0.5.6)
Fire category of rolling stock required (1.1.1.1.8.10 | 1.2.1.0.5.7 | 1.2.2.0.5.7)
National fire category of rolling stock required (1.1.1.1.8.11 | 1.2.1.0.5.8 | 1.2.2.0.5.8)
Existence of walkways (1.1.1.1.8.12 | 1.2.1.0.5.10 | 1.2.2.0.5.9)
Existence of evacuation and rescue points (1.1.1.1.8.13 | 1.2.1.0.5.11 | 1.2.2.0.5.10)
EC declaration of verification for track relating to compliance with the requirements from TSIs applicable to energy subsystem (1.1.1.2.1.1)
EI declaration of demonstration (as defined Recommendation 2014/881/EU) for track relating to compliance with the requirements from TSIs applicable to energy subsystem (1.1.1.2.1.2)
Accepted TSI compliant pantograph heads (1.1.1.2.3.1)
Accepted other pantograph heads (1.1.1.2.3.2)
Requirements for number of raised pantographs and spacing between them, at the given speed (1.1.1.2.3.3)
Contact strip material metallic content (1.1.1.2.3.4)
Permitted contact strip material (1.1.1.2.3.4)
Phase separation (1.1.1.2.4.1.1)
Information on phase separation (1.1.1.2.4.1.2)
System separation (1.1.1.2.4.2.1)
Information on system separation (1.1.1.2.4.2.2)
Distance between signboard and phase separation ending (1.1.1.2.4.3)
Contact force permitted (1.1.1.2.5.2)
Automatic dropping device required (1.1.1.2.5.3)
Document with restriction related to power consumption of specific electric traction unit(s) (1.1.1.2.5.4)
Document with restriction related to the position of Multiple Traction unit(s) to comply with contact line separation (1.1.1.2.5.5)
EC declaration of verification for track relating to compliance with the requirements from TSIs applicable to control, command signalling subsystem (1.1.1.3.1.1)
Error corrections required for the on-board ETCS, GSM-R and/or ATO function (1.1.1.3.1.2 | 1.2.1.1.1.19)
Reasons for Error corrections required, but accepted by the IM for the on-board ETCS, GSM-R and/or ATO function (1.1.1.3.1.2 | 1.2.1.1.1.19)
ETCS infill necessary for line access (1.1.1.3.2.3 | 1.2.1.1.1.3)
Has ETCS national packet 44 application implemented (1.1.1.3.2.5 | 1.2.1.1.1.5)
Existence of operating restrictions or conditions (1.1.1.3.2.6 | 1.2.1.1.1.6)
Train integrity confirmation from on-board (not from driver) necessary for line access (1.1.1.3.2.8 | 1.2.1.1.1.8)
Safe consist length information from on-board necessary for access the line and SIL (1.1.1.3.2.11 | 1.2.1.1.1.11)
ETCS trackside implements level crossing procedure or an equivalent solution (1.1.1.3.2.13 | 1.2.1.1.1.13)
Cant Deficiency used for the basic SSP (1.1.1.3.2.14 | 1.2.1.1.1.14)
Other Cant Deficiency train categories for which the ETCS trackside is configured to provide SSP (1.1.1.3.2.14.1 | 1.2.1.1.1.14.1)
D_NVROLL (1.1.1.3.2.16.1 | 1.2.1.1.1.16.1)
Q_NVEMRRLS (1.1.1.3.2.16.2 | 1.2.1.1.1.16.2)
V_NVALLOWOVTRP (1.1.1.3.2.16.3 | 1.2.1.1.1.16.3)
V_NVSUPOVTRP (1.1.1.3.2.16.4 | 1.2.1.1.1.16.4)
D_NVOVTRP (1.1.1.3.2.16.5 | 1.2.1.1.1.16.5)
T_NVOVTRP (1.1.1.3.2.16.6 | 1.2.1.1.1.16.6)

D_NVPOTRP (1.1.1.3.2.16.7 | 1.2.1.1.1.16.7)
T_NVCONTACT (1.1.1.3.2.16.8 | 1.2.1.1.1.16.8)
M_NVCONTACT (1.1.1.3.2.16.9 | 1.2.1.1.1.16.9)
M_NVDERUN (1.1.1.3.2.16.10 | 1.2.1.1.1.16.10)
Q_NVDRIVER_ADHES (1.1.1.3.2.16.11 | 1.2.1.1.1.16.11)
Q_NVSBTSMPERM (1.1.1.3.2.16.12 | 1.2.1.1.1.16.12)
National Values used for the brake model (1.1.1.3.2.16.13 | 1.2.1.1.1.16.13)
Big Metal Mass (1.1.1.3.2.18 | 1.2.1.1.1.18)
GSM-R version (1.1.1.3.3.1 | 1.2.1.1.2.1)
Number of active GSM-R mobiles (EDOR) or simultaneous communication session on board for ETCS level 2 needed to perform radio block centre handovers without having an operational disruption (1.1.1.3.3.2 | 1.2.1.1.2.2)
Optional GSM-R functions (1.1.1.3.3.3 | 1.2.1.1.2.3)
Additional information on network characteristics (1.1.1.3.3.3.1 | 1.2.1.1.2.3.1)
GPRS for ETCS (1.1.1.3.3.3.2 | 1.2.1.1.2.3.2)
Area of implementation of GPRS (1.1.1.3.3.3.3 | 1.2.1.1.2.3.3)
GSM-R use of group 555 (1.1.1.3.3.4 | 1.2.1.1.2.4)
GSM-R networks covered by a roaming agreement (1.1.1.3.3.5 | 1.2.1.1.2.5)
Existence of GSM-R roaming to public networks (1.1.1.3.3.6 | 1.2.1.1.2.6)
Details on GSM-R roaming to public networks (1.1.1.3.3.7 | 1.2.1.1.2.7)
No GSMR coverage (1.1.1.3.3.8 | 1.2.1.1.2.8)
Radio system compatibility voice (1.1.1.3.3.9 | 1.2.1.1.2.9)
Radio system compatibility data (1.1.1.3.3.10 | 1.2.1.1.2.10)
GSM-R network is configured to allow forced de-registration of a functional number by another driver (1.1.1.3.3.11 | 1.2.1.1.2.11)
Radio Network ID (1.1.1.3.3.12 | 1.2.1.1.2.13)
Existence of train detection system fully compliant with the TSI (1.1.1.3.4.1 | 1.2.1.1.3.1)
Train protection legacy system (1.1.1.3.5.3 | 1.2.1.1.4.1)
Class B or other radio systems installed (Radio Legacy Systems) (1.1.1.3.6.1 | 1.2.1.1.5.1)
Existence of switch over between different protection, control and warning systems while running (1.1.1.3.8.1 | 1.2.1.1.7.1)
Special conditions to switch over between different class B train protection, control and warning systems (1.1.1.3.8.1.1 | 1.2.1.1.7.1.1)
Existence of switch over between different radio systems (1.1.1.3.8.2 | 1.2.1.1.7.2)
Special instructions to switch over between different radio systems (1.1.1.3.8.2.1 | 1.2.1.1.7.2.1)
Special technical conditions required to switch over between ERTMS/ETCS and Class B systems (1.1.1.3.8.3 | 1.2.1.1.7.3)
Existence and TSI compliance of rules for magnetic fields emitted by a vehicle (1.1.1.3.9.1 | 1.2.1.1.8.1)
Existence and TSI compliance of limits in harmonics in the traction current of vehicles (1.1.1.3.9.2 | 1.2.1.1.8.2)
ETCS level for degraded situation (1.1.1.3.10.1 | 1.2.1.1.9.1)
Other train protection, control and warning systems for degraded situation (1.1.1.3.10.2 | 1.2.1.1.9.2)
Maximum braking distance requested (1.1.1.3.11.1)
Availability by the IM of additional information (1.1.1.3.11.2)
Documents available by the IM relating to braking performance (1.1.1.3.11.3)
ATO Grade of Automation (1.1.1.3.13.1 | 1.2.1.1.10.1)
ATO System version (1.1.1.3.13.2 | 1.2.1.1.10.2)
ATO communication system (1.1.1.3.13.3 | 1.2.1.1.10.3)
Type of signal (1.1.1.3.14.2 | 1.2.1.0.8.2)
Signal orientation (1.1.1.3.14.3 | 1.2.1.0.8.3)
Existence of rules and restrictions of a strictly local nature (1.1.1.4.1 | 1.2.3.1)
Documents regarding the rules or restrictions of a strictly local nature available by the IM (1.1.1.4.2 | 1.2.3.2)
List of vehicle types already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems (1.1.1.5.1)
List of vehicles already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems (1.1.1.5.2)
Diesel or other thermal traction allowed (1.2.1.0.5.9)

Height of platform (1.2.1.0.6.5)
Existence of platform assistance for starting train (1.2.1.0.6.6)
Range of use of the platform boarding aid (1.2.1.0.6.7)
Curvature of the platform (1.2.1.0.6.8)
Specific constraints imposed by the GSM-R network operator on ETCS on-board units only able to operate in circuit-switch (1.2.1.1.2.12)
Gradient for stabling tracks (1.2.2.0.3.1)
Minimum radius of vertical curve (1.2.2.0.3.3)
Existence of toilet discharge (1.2.2.0.4.1)
Existence of external cleaning facilities (1.2.2.0.4.2)
Existence of water restocking (1.2.2.0.4.3)
Existence of refuelling (1.2.2.0.4.4)
Existence of sand restocking (1.2.2.0.4.5)
Existence of electric shore supply (1.2.2.0.4.6)
Document with operating restrictions or conditions

Has Properties

Contact line system
Contains
ETCS national packet 44 application implemented
Hot axle box detector (HABD)
In country
Infrastructure manager
Name of a subset with common characteristics
Parameter applicability
Part of TEN-T
Subset of
Train detection system
TSI compliant train protection system (ETCS)

Validation

Validation Rules:

Common Characteristics Subset Shape

Message: Indication whether the line is designated to a Railway Freight Corridor (1.1.1.1.2.3, 1.2.1.0.2.3): The National Line {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/freight-corridor/FreightCorridors.

Subsidiary location C

Subsidiary location must be linked to a Primary Location and specifies in more detailed way part, attributes, or usage of Primary location. It may be also a non-rail point or a rail point that is not managed by an Infrastructure Manager (IM). It may be defined by entity having company code according to their needs. The Subsidiary location is optional and dependent upon business needs.

IRI: *http://data.europa.eu/949/SubsidiaryLocation*

Is subclass of

ERA Feature

Has Properties

Allocation company
Linked to primary location
Subsidiary location code
Subsidiary location name

Subsidiary location type

Validation

Validation Rules:

Subsidiary Location Shape

Message: subsidiaryLocationType: The Subsidiary Location {$this} (label {?slLabel}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/subsidiary-location-types/SubsidiaryLocationTypes.

Additional Information

See also:

http://taf-jsg.info/wp-content/uploads/2024/01/20231018-JGS-Handbook-3.4-with-XSD-3.4.0.0.pdf

Switch C

A unit of track comprising two fixed rails (stock rails) and two movable rails (switch rails) used to direct vehicles from one track to another track.

IRI: *http://data.europa.eu/949/Switch*

Is subclass of

Infrastructure element

Validation

Validation Rules:

Switch Shape

Additional Information

References:

http://data.europa.eu/eli/reg_impl/2019/776/oj

System separation info C

Indication of required several information on system separation.

IRI: *http://data.europa.eu/949/SystemSeparationInfo*

Has Properties

System separation info pantograph lowered
System separation info Km
System separation info length
System separation info switch off breaker

Validation

Validation Rules:

System Separation Info Shape

Temporal Feature C

The union of TemporalDuration that represents a time extent and TemporalEntity that represents a temporal interval or instant.

IRI: *http://data.europa.eu/949/TemporalFeature*

Is subclass of

Temporal duration
Temporal entity

Is superclass of

Parameter applicability

TEN-T Corridor C

Represents the TEN-T network classification of an element, including its network level, type of traffic, and associated European transport corridors.

IRI: *http://data.europa.eu/949/TENTCorridor*

Has Properties

European transport corridor
TEN-T network level
Type of traffic

Topological Coordinate C

Represents a topological coordinate.

IRI: *http://data.europa.eu/949/TopologicalCoordinate*

Has Properties

Offset from origin
On linear element

Validation

Validation Rules:

Topological Coordinate Shape

Track [C]

A pair of rails over which rail borne vehicles can run.

IRI: *http://data.europa.eu/949/Track*

Is subclass of
Infrastructure element

Is superclass of
Running track
Siding

Has RINF parameters
Connected to (1.1.1.0.1.2 | 1.2.4.1)
Acceleration allowed near level crossing (1.1.1.1.7.3)
Existence of switch over between different protection, control and warning systems while running (1.1.1.3.8.1 | 1.2.1.1.7.1)
Existence of switch over between different radio systems (1.1.1.3.8.2 | 1.2.1.1.7.2)
Document with operating restrictions or conditions

Has Properties
ETCS national packet 44 application implemented

Train Detection System [C]

Safety system used to detect the presence of vehicles on the railway track.

IRI: *http://data.europa.eu/949/TrainDetectionSystem*

Has RINF parameters
Frequency bands for detection (1.1.1.3.4.2 | 1.2.1.1.3.2)
Evaluation parameters if maximum interference current is not measured in the preferred bands (1.1.1.3.4.2.1 | 1.2.1.1.3.2.1)
Maximum interference current (1.1.1.3.4.2.1 | 1.2.1.1.3.2.1)
Vehicle impedance (1.1.1.3.4.2.2 | 1.2.1.1.3.2.2)
Maximum magnetic field (1.1.1.3.4.2.3 | 1.2.1.1.3.2.3)
Type of train detection system (1.1.1.3.7.1.1 | 1.2.1.1.3.1.1)
Type of track circuits or axle counters to which specific checks are needed (1.1.1.3.7.1.2 | 1.2.1.1.6.1)
Document with the procedure(s) related to the type of train detection systems declared in "Type of track circuits or axle counters to which specific checks are needed" (1.1.1.3.7.1.3 | 1.2.1.1.6.2)
Section with train detection limitation (1.1.1.3.7.1.4 | 1.2.1.1.6.3)

Validation

Validation Rules:

Train Detection System Shape

Message: Indication of types of train detection system installed (1.1.1.3.7.1.1, 1.2.1.1.3.1.1): The train detection system {$this} (label {?tdsLabel}) has a value {? concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/train-detection/TrainDetectionSystems.

Tunnel C

A railway tunnel is an excavation or a construction around the track provided to allow the railway to pass for example higher land, buildings or water.

IRI: *http://data.europa.eu/949/Tunnel*

Is subclass of

Infrastructure element

Has RINF parameters

Tunnel identification (1.1.1.1.8.2 | 1.2.1.0.5.2 | 1.2.2.0.5.2)
Start of tunnel kilometer (1.1.1.1.8.3)
Start of tunnel location (1.1.1.1.8.3)
End of tunnel (1.1.1.1.8.4)
End of tunnel kilometer (1.1.1.1.8.4)
EC declaration of verification relating to compliance with the requirements from TSIs applicable to railway tunnel (1.1.1.1.8.5 | 1.2.1.0.5.3 | 1.2.2.0.5.3)
EI declaration of demonstration (as defined in Recommendation 2014/881/EU) relating to compliance with the requirements from TSIs applicable to railway tunnel (1.1.1.1.8.6 | 1.2.1.0.5.4 | 1.2.2.0.5.4)
Length of tunnel (1.1.1.1.8.7 | 1.2.1.0.5.5 | 1.2.2.0.5.5)
Cross section area (1.1.1.1.8.8)
Compliance of the tunnel with TSI INF (1.1.1.1.8.8.1)
Document available from the IM with precise description of the tunnel (1.1.1.1.8.8.2)
Existence of emergency plan (1.1.1.1.8.9 | 1.2.1.0.5.6 | 1.2.2.0.5.6)
Fire category of rolling stock required (1.1.1.1.8.10 | 1.2.1.0.5.7 | 1.2.2.0.5.7)
National fire category of rolling stock required (1.1.1.1.8.11 | 1.2.1.0.5.8 | 1.2.2.0.5.8)
Existence of walkways (1.1.1.1.8.12 | 1.2.1.0.5.10 | 1.2.2.0.5.9)
Existence of evacuation and rescue points (1.1.1.1.8.13 | 1.2.1.0.5.11 | 1.2.2.0.5.10)
Diesel or other thermal traction allowed (1.2.1.0.5.9)

Has Properties

Special tunnel area

Validation

Validation Rules:

Tunnel Shape

Message: crossSectionArea (1.1.1.1.8.8): The Tunnel {$this} ({?label}) has a maximum permitted speed of {?tunnelSpeed} Km/h . For any tunnel with a speed of the line equal or greater than 200km/h the crossSectionArea parameter is applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:

The length of a tunnel is defined as the length of the fully enclosed section, measured at rail level. A tunnel in the context of this TSI is 0.1 km or longer. Where certain requirements apply only to longer tunnels, thresholds are mentioned in the relevant clauses.

References:
http://data.europa.eu/eli/reg/2014/1303/2024-01-29

5. RINF Parameters

Section of line generic information DP OP

General Information

Number:
1.1.0.0.0

Belongs to parameters group
RINF Technical characteristic

Related parameters
Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
National line identification (1.1.0.0.0.2)
Operational point at start of section of line (1.1.0.0.0.3)
Operational point at end of section of line (1.1.0.0.0.4)
Length of section of line (1.1.0.0.0.5)
Nature of Section of Line (1.1.0.0.0.6)

Organisation code DP

Four alpha-numeric code allocated by ERA to a body. It represents the Infrastructure Manager (IM) code in RINF.
Infrastructure manager means any body or firm responsible in particular for establishing, managing and maintaining railway infrastructure, including traffic management and control-command signalling;
the functions of the infrastructure manager on a network or part of a network may be allocated to different bodies or firms. Definition in (Article 3(2))

IRI: *http://data.europa.eu/949/organisationCode*

Also Known As:
IM's code

Parameter of
Body

General Information

Number:
1.1.0.0.0.1
1.1.1.1.8.1

1.2.1.0.0.1
1.2.1.0.5.1
1.2.1.0.6.1
1.2.2.0.0.1
1.2.2.0.5.1

XML Name:
SOLIMCode
OPTrackPlatformIMCode
OPSidingIMCode
OPTrackTunnelIMCode
OPSidingTunnelIMCode
SOLTunnelIMCode
OPTrackIMCode

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Section of line generic information (1.1.0.0.0)
Running track generic information (1.1.1.0.0)
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)
Platform (1.2.1.0.6)
Siding (1.2.2)
Identifier

Data Format

Data Presentation
String

Format:
AAAA

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Organisation Code
Comment: Four alpha-numeric code allocated by ERA to a body. It represent's the Infrastructure Manager (IM) code in RINF. Infrastructure manager means any body or firm responsible in particular for establishing, managing and maintaining railway infrastructure, including traffic management and control-command and signalling; the functions of the infrastructure manager on a network or part of a network may be allocated to different bodies or firms. Definition in (Article 3(2)).
Message: organisationCode (1.2.1.0.6.1, 1.1.0.0.0.1, 1.1.1.1.8.1, 1.2.1.0.0.1, 1.2.1.0.5.1, 1.2.2.0.0.1, 1.2.2.0.5.1): A Body must have exactly one value of organisationCode. This error may be due to not having a value, having more than one value, having a value that is not a string or having a value that is not a four character code

OPE TSI References

Appendix D2 Index
1.1

Additional Information

General explanation:

The Code is a unique identifier for the Infrastructure Manager and it shall be verified on national level.
- If the IM is subject to TAF/TAP TSIs, it corresponds to the code used in TAF/TAP TSIs.
- In other cases, it corresponds to the "organisation code" assigned by the Agency for the specific needs of the RINF.
Each Section of Line shall concern only one IM.
To be able to follow the "only once" principle, the infrastructure manager code is a property of the organisation having the role of infrastructuer manager. For data provision, a subset of elements with common characteristics should be created with the era:infrastructureManager property having as value the instance of the infrastructure mananger role.

Example:

```
Simplified example:
:ABCD_IM rdf:type era:OrganisationRole;
  era:hasOrganisationRole era-skos:InfrastructureManager ;
  era:roleOf :ABCD .
:ABCD rdf:type era:Body, org:Organization  ;
    era:organisationCode "ABCD" ;
    era:role :ABCD_IM .

:0000_IM rdf:type era:OrganisationRole;
  era:hasOrganisationRole era-skos:InfrastructureManager.
  era:roleOf :0000_ORG.

:0000_ORG rdf:type era:Body, org:Organization;
     era:organisationCode "0000".

#IM Code parameter - directly attached to a track
:track2 rdf:type era:RunningTrack;
  era:infrastructureManager :0000_IM.
```

See also:

https://eur-lex.europa.eu/eli/dir/2012/34/oj#d1e885-32-1

References:

http://data.europa.eu/eli/reg_impl/2019/773/oj
http://data.europa.eu/eli/dir/2012/34/oj
http://data.europa.eu/eli/dec_impl/2018/1614

National line identification OP

Indicates a relationship with a national railway line at a specific kilometer point. For a Section of Line: unique line identification or unique line number within Member State.

IRI: *http://data.europa.eu/949/nationalLine*

Parameter of

Section Of Line

General Information

Number:
1.1.0.0.0.2

XML Name:
SOLLineIdentification

Belongs to parameters group
Section of line generic information (1.1.0.0.0)

Data Format

Data Presentation
Linear Positioning System

Validation

Validation Rules:
National Line So L
Comment: Indicates the national railway line that a Section of Line belongs to, via a linear positioning system.
Message: nationalLine (1.1.0.0.0.2): Each Section of Line must indicate exactly one national railway line via a linear positioning system. This error is due to not having a value, having more than one value, or having a value that is not an instance of LinearPositioningSystem.

Additional Information

General explanation:
Each SoL can belong to only one national line.

In case when SoL is the track connecting between OPs within big node (resulting from division of big station into several smaller) the line can be identified using the name of this track.

Operational point at start of section of line OP

Operational point at the start of section of line (kilometres increasing from start OP to the end OP).

IRI: *http://data.europa.eu/949/opStart*

Parameter of
Section Of Line

General Information

Number:
1.1.0.0.0.3

XML Name:
SOLOPStart

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Section of line generic information (1.1.0.0.0)

Data Format

Data Presentation
Operational Point

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Op Start
Comment: Each SoL may have only one start OP, and each OP has unique OP ID within the MS. The "uniqueOPID" is defined in parameter 1.2.0.0.0.2. Each SoL has the principal direction of the traffic defined by increasing kilometres running from the start OP to the end OP. That is why the start OP is always located at lowest kilometre of the line within the SoL. Data collected in the UK in miles will be transformed to km for uploading to the RINF application. The OP ID must exist in the MS file of RINF. The value of this parameter must be different from 1.1.0.0.0.4. No validation will be performed by RINF application regarding which is the start and which the end OP. This requires national verification.
Message: opStart (1.1.0.0.0.3): There must be exactly one OP start for this section of line and it must be different from the OP end.

OPE TSI References

Appendix D2 Index
3.1.1

Additional Information

General explanation:
Each SoL may have only one start OP, and each OP has unique OP ID within the MS. The "uniqueOPID" is defined in parameter 1.2.0.0.0.2.
Each SoL has the principal direction of the traffic defined by increasing kilometres running from the start OP to the end OP.
That is why the start OP is always located at lowest kilometre of the line within the SoL.
No validation will be performed by RINF application regarding which is the start and which the end OP. This requires IM's verification.

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Operational point at end of section of line OP

Operational point at the end of section of line (kilometres increasing from start OP to the end OP).

IRI: *http://data.europa.eu/949/opEnd*

Parameter of

Section Of Line

General Information

Number:
1.1.0.0.0.4

XML Name:
SOLOPEnd

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Section of line generic information (1.1.0.0.0)

Data Format

Data Presentation
Operational Point

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Op End
Comment: Each SoL may have only one end OP, and each OP has unique OP ID within the MS. The "uniqueOPID" is defined in parameter 1.2.0.0.0.2. Each SoL has the principal direction of the traffic defined by increasing kilometres running from the start OP to the end OP. That is why the start OP is always located at lowest kilometre of the line within the SoL. Data collected in the UK in miles will be transformed to km for uploading to the RINF application. The OP ID must exist in the MS file of RINF. The value of this parameter must be different from 1.1.0.0.0.3. No validation will be performed by RINF application regarding which is the start and which the end OP. This requires national verification.
Message: opEnd (1.1.0.0.0.4): There must be exactly one OP end for this section of line and it must be different from the OP start.

OPE TSI References

Appendix D2 Index
3.1.2

Additional Information

General explanation:
Each SoL may have only one end OP, and each OP has unique OP ID within the MS.
The "uniqueOPID" is defined in parameter 1.2.0.0.0.2.
Each SoL has the principal direction of the traffic defined by increasing kilometres running from the start OP to the end OP.
That is why the end OP is always located at highest kilometre of the line within the SoL.
No validation will be performed by RINF application regarding which is the start and which the end OP. This requires IM's verification.

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Length of section of line DP

Length between operational points at start and end of section of line.

IRI: *http://data.europa.eu/949/lengthOfSectionOfLine*

Parameter of

Section Of Line

General Information

Number:
1.1.0.0.0.5

XML Name:
SOLLength

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Section of line generic information (1.1.0.0.0)
Length

Data Format

Data Presentation
Double

Unit of Measure:
Kilometre

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Sol Length
Comment: General description: The length of SoL is theoretical distance between centre points of Ops which are selected in such a way to represent the average value for all tracks within the SoL. It is advised to include distances applied by IM for commercial purposes. Validation: No validation will be performed by RINF application regarding the length of SoL. This requires national verification.
Message: lengthOfSectionOfLine (1.1.0.0.0.5): Each SoL has exactly one length. This error is due to that either there is no length for the specified SoL, more than one length has been defined, or the datatype cannot be converted into an xsd:double.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.2.3

Nature of Section of Line OP

Kind of section of line expressing size of presented data which depends on fact whether it connects OPs generated by division of a big node into several OPs or not.

IRI: *http://data.europa.eu/949/solNature*

Parameter of

Section Of Line

General Information

Number:
1.1.0.0.0.6

XML Name:
SOLNature

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Section of line generic information (1.1.0.0.0)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Section of Line Natures

Values :

Code	Value
10	Regular SoL
20	Link

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Sol Nature Skos
Comment: Indication of the SOL nature.
Message: SoL nature (1.1.0.0.0.6): The SOL {$this} with label {?label} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/sol-natures/SoLNatures.

Sol Nature Applicability
Comment: If the value of this parameter is “Link”, then for all tracks belonging to this SoL, all the parameters of the following groups of parameters are not applicable: 1.1.1.1 Infrastructure subsystem; 1.1.1.2 Energy subsystem; 1.1.1.3 Control-command and signalling subsystem.
Message: SoL nature (1.1.0.0.0.6): The SoL {$this} ({?solLabel}), with opStart {?opStartID} and opEnd {?opEndID}, has a SOLnature of type Link, and at least one of its tracks has values for at least one of the groups of parameters 1.1.1.1, 1.1.1.2 or 1.1.1.3. This happens at least with the track {?track} ({?trackLabel}), with property {?p} (RINF index {?index}).
Sol Nature
Comment: General description: Validation: If the value of this parameter is 'Link', then for all tracks belonging to this SoL, all the parameters of the following groups of parameters are not applicable: 1.1.1.1 Infrastructure subsystem, 1.1.1.2 Energy subsystem, 1.1.1.3 Control-command and signalling subsystem.
Message: SoL nature (1.1.0.0.0.6): Either no SOL nature is specified for this SoL, or more than one SoL nature has been specified.

Route book specific parameters DP OP

General Information

Number:
1.1.0.0.1

Belongs to parameters group
RINF Technical characteristic

Related parameters
Industrial risks — locations where it is dangerous for the driver to step out (1.1.0.0.1.1)
Operating language (1.1.0.0.1.2 | 1.2.0.0.0.8)
Operational regime (1.1.0.0.1.3)

Industrial risks — locations where it is dangerous for the driver to step out DP

Indication that the full section of line (or a part of it) it is identified by the Infrastructure Managers (and communicated to the RU) where drivers are not supposed to get off the locomotive.

IRI: *http://data.europa.eu/949/existenceOfIndustrialRisk*

Parameter of
Section Of Line
Subset with common characteristics

General Information

Number:
1.1.0.0.1.1

XML Name:
RBS_IndRisks

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Route book specific parameters (1.1.0.0.1)

Data Format

Data Presentation
Boolean

Format:
Y/N

Flags

Applicability Flags:
Y/NYA

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Existence Of Industrial Risk
Comment: Indication that the full section of line (or a part of it) is identified by the Infrastructure Managers where drivers are not supposed to get off the locomotive.
Message: existenceOfIndustrialRisk (1.1.0.0.1.1): Each section of line or common characteristics subset may have at most one value for existence of industrial risk. This error is due to having more than one value or having a value that is not Y/N (boolean).

OPE TSI References

Appendix D2 Index
3.2.5

Additional Information

General explanation:
Although it is just an indication of existence of an industrial risk, the area covering the industrial risk should be references on the topological network.
For the route book purpose, the industrial risks should be defined as linear references instead of area. SpecialArea of type "industrial risk" should be used

Operating language OP

The language or languages used in daily operation by infrastructure manager and published in its Network Statement, for the communication of operational or safety related messages between the staff of the infrastructure manager and the railway undertaking.

IRI: *http://data.europa.eu/949/operatingLanguage*

Parameter of
Infrastructure element

General Information

Number:

1.1.0.0.1.2
1.2.0.0.0.8

XML Name:
RBS_OpeLang

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Route book specific parameters (1.1.0.0.1)

Data Format

Data Presentation
Concept

Format:
http://publications.europa.eu/resource/authority/language

Taxonomy Reference:
Language

Values :

Code	Value
BUL	Bulgarian
CES	Czech
DAN	Danish
DEU	German
ELL	Greek
ENG	English
EST	Estonian
FIN	Finnish
FRA	French
GLE	Irish
HRV	Croatian
HUN	Hungarian
ITA	Italian
LAV	Latvian
LIT	Lithuanian
MLT	Maltese
NLD	Dutch
NOR	Norwegian
POL	Polish
POR	Portuguese
RON	Romanian
RUS	Russian
SLK	Slovak
SLV	Slovenian
SPA	Spanish
SWE	Swedish

Flags

Applicability Flags:

Y/NYA

Validation

Validation Rules:

Operating Langague
Comment: Relates to the operating language used for an infastructure element
Message: operating language (1.1.0.0.1.2 , 1.2.0.0.0.8): The operating language thatthat is an IRI. This error is due to having a value that is not an IRI

OPE TSI References

Appendix D2 Index

3.5.1

Additional Information

References:

http://data.europa.eu/eli/reg_impl/2019/773/oj

Operational regime OP

Double track type.

IRI: *http://data.europa.eu/949/operationalRegimeType*

Parameter of

Section Of Line

General Information

Number:

1.1.0.0.1.3

XML Name:

RBS_OpeReg

Deadline:

12 months after publication of Article 7 Guide

Belongs to parameters group

Route book specific parameters (1.1.0.0.1)

Data Format

Data Presentation

Concept

Taxonomy Reference:

Operational regime types

Values :

Code	Value
10	Mono-directional single track line
20	Bi-directional single track line
30	Reversible multiple track line
40	Double or multiple track line

Flags

Applicability Flags:
Y/NYA

Validation

Validation Rules:
Operational Regime Type
Comment: Double track type.
Message: operationalRegimeType: Each SectionOfLine may have at most one value for operational regime which must be an IRI. This error is due to having more than one values, or a value that is not an IRI.
Operational Regime Type Skos
Comment: Double track type.
Message: operationalRegimeType: The SectionOfLine {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/operational-regime-types/OperationalRegimeTypes.

OPE TSI References

Appendix D2 Index
3.2.7

Additional Information

See also:
https://www.securite-ferroviaire.fr/sites/default/files/reglementations/pdf/2023-03/document-pedagogique-signaux-regimes-exploitation-v1.pdf

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Running track generic information DP OP

General Information

Number:
1.1.1.0.0

Belongs to parameters group
RINF Technical characteristic

Related parameters

Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
Identification of track (1.1.1.0.0.1 | 1.2.1.0.0.2)
Normal running direction (1.1.1.0.0.2)
Lineside distance indication (1.1.1.0.0.3)
Connected to (1.1.1.0.1.2 | 1.2.4.1)

Identification of track DP

Unique track identification or unique track number within operational point or section of line

IRI: *http://data.europa.eu/949/trackId*

Parameter of

Running track

General Information

Number:
1.1.1.0.0.1
1.2.1.0.0.2

XML Name:
SOLTrackIdentification
OPTrackIdentification

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Running track generic information (1.1.1.0.0)
Identifier

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
No Repeated Track Ids So L
Comment: Each track shall have unique identification or number within the SoL. This number cannot be used for naming any other track in the same SoL.
Message: trackId (1.1.1.0.0.1): Each track shall have unique identification or number within the SoL. This number cannot be used for naming any other track in the same SoL. There is a problem with SoL {$this} ({?solLabel}) and tracks {?track1} ({?track1Label}) and {?track2} ({?track2Label}), since they have the same identifier: {?value}.

Track Id
Comment: Unique track identification or unique track number within an OP or a section of line.
Message: trackId (1.1.1.3.3.3.3, 1.2.1.1.2.3.3): The identification of a track must be a string. This error may be due to having a track with no identification or with more than one value as identification, or having a value that is not a string.
No Repeated Track Ids Op
Comment: Each track shall have unique identification or number within the OP. This number cannot be used for naming any other track in the same OP.
Message: trackId (1.2.1.0.0.2):: Each track shall have unique identification or number within the OP. This number cannot be used for naming any other track in the same OP. There is a problem with OP {$this} ({?opLabel}) and tracks {?track1} ({?track1Label}) and {?track2} ({?track2Label}), since they have the same identifier: {?value}.

OPE TSI References

Appendix D2 Index
2.2.1.1

Additional Information

General explanation:
Each track shall have unique identification or number within the SoL. This number cannot be used for naming any other track in the same SoL.
The check regarding the uniqueness of the ID within the SoL has to be done on national level (preferably by IM).

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Normal running direction OP

The normal running direction is:
- the same as the direction defined by the start and end of the SoL: (N)
- the opposite to the direction defined by the start and end of the SoL: (O)
- both directions: (B)

IRI: *http://data.europa.eu/949/trackDirection*

Parameter of
Running track

General Information

Number:
1.1.1.0.0.2

XML Name:
SOLTrackDirection

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Running track generic information (1.1.1.0.0)

Data Format

Data Presentation

Concept

Taxonomy Reference:
Track Running Directions

Values :

Code	Value	Explanation
10	N	The normal running direction is the same as the direction defined by the start and end of the Section of Line.
20	O	The normal running direction is the opposite/reverse as the direction defined by the start and end of the Section of Line.
30	B	The normal running direction is both directions defined by the Section of Line.

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
So Ltrack Direction Max Count
Comment: The normal running direction is: 1) the same as the direction defined by the start and end of the SoL 2) the opposite to the direction defined by the start and end of the SoL 3) both directions defined for SoL.
Message: There should be at most one Track Direction. There is a problem with SoL {$this} ({?solLabel}) and its track {?track} ({?trackLabel}). This track has at least two different values for this property: {?value1} and {?value2}
So Ltrack Direction Min Count
Comment: The normal running direction is: 1) the same as the direction defined by the start and end of the SoL 2) the opposite to the direction defined by the start and end of the SoL 3) both directions defined for SoL.
Message: There should be at least one Track Direction. There is a problem with SoL {$this} ({?solLabel}) and its track {?track} ({?trackLabel}). This track has no values for this property
Track Direction Skos
Comment: The normal running direction is: 1) the same as the direction defined by the start and end of the SoL 2) the opposite to the direction defined by the start and end of the SoL 3) both directions defined for SoL.
Message: Indication of the trackDirection (1.1.1.0.0.2):): The track {?track} in the Section of Line {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/track-running-directions/TrackRunningDirections.
Track Direction
Comment: The normal running direction of the track.
Message: trackDirection (1.1.1.0.0.2): The track must have at most one running direction value and it must be an IRI. This error may be due to having more than one value or having a value that is not an IRI.

OPE TSI References

Appendix D2 Index

2.2.1.1

Lineside distance indication OP

Indication of types of appearance of track lineside distance indications.

IRI: *http://data.europa.eu/949/linesideDistanceIndication*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.0.0.3

XML Name:
SOL_LineDistIndication

Belongs to parameters group
Running track generic information (1.1.1.0.0)

Data Format

Data Presentation
Lineside indications of distance

Format:
[NNNN] frequency in meters
Appearance - selectable list
[L/R] - the side along the track where the lineside indication is positioned (left or right)

Validation

Validation Rules:
Lineside Distance Indication Ccs
Comment: Indication of types of appearance of track lineside distance indications.
Message: linesideDistanceIndication (1.1.1.0.0.3) : The common characteristics subset may have at most one value of a lineside distance indication that must be an instance of LinesideDistanceIndication. This error may be due to the subset having more than one value or having a value that is not an instance of the class LinesideDistanceIndication.
Lineside Distance Indication Rt
Comment: Indication of types of appearance of track lineside distance indications.
Message: linesideDistanceIndication (1.1.1.0.0.3) : The track must have exactly one value of a lineside distance indication that must be an instance of LinesideDistanceIndication. This error may be due to the track having no value, having more than one value or having a value that is not an instance of the class LinesideDistanceIndication.
Lineside Distance Indication
Comment: Indication of types of appearance of track lineside distance indications.
Message: linesideDistanceIndication (1.1.1.0.0.3) : The track must have exactly one value of a lineside distance indication that must be an instance of LinesideDistanceIndication. This error may be due to the track having no value, having more than one value or having a value that is not an instance of the class LinesideDistanceIndication.

OPE TSI References

Appendix D2 Index
3.1.3

Additional Information

General explanation:
Frequency, appearance and positioning of a sign indicating distance as reference post. Two types of sign are normally available: kilometer post and hectometer post.
- A kilometer post is a lineside sign indicating the distance from a specific point, usually being the strarting point of the railway line.
- An hectometer post is a lineside sign indicating a relative distance.

Connected to OP

Represents a bidirectional connection between two Track instances.

IRI: *http://data.europa.eu/949/connectedTo*

Also Known As:
Internal connection
Tracks connectivity to operational points

Parameter of
Track

General Information

Number:
1.1.1.0.1.2
1.2.4.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Running track generic information (1.1.1.0.0)

Data Format

Data Presentation
Track

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Connected To
Comment: Represents a bidirectional connection between two Track instances.
Message: connectedTo (1.1.1.0.1.2, 1.2.4.1): The track may be connected to other tracks and each value must be an instance of Track. This error may be due to having a value that is not an instance of Track.

Additional Information

General explanation:

This property defines a connection between two tracks. It is symmetric, meaning if a track A is connected to track B, then track B is also connected to track A. A track cannot be connected to itself (irreflexive property).
Used to indicate connectivity between track instances in a network, ensuring that connections are non-self-referential and in the normal running direction of the track.

This is a simplistic representation of the internal connectivity of the tracks in an operational point or the connectivity of the tracks between operational points and sections of line.
For a more detailed representation of connectivity and navigability, this information should be available on the topology of the network.

Example:

```
Track_A connectedTo Track_B implies Track_B connectedTo
Track_A.
```

Infrastructure subsystem DP OP

General Information

Number:
1.1.1.1

Belongs to parameters group
RINF Technical characteristic

Related parameters
Declarations of verification for track (1.1.1.1.1)
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)
Line layout (1.1.1.1.3 | 1.2.1.0.3)
Track parameters (1.1.1.1.4 | 1.2.1.0.4)
Switches and crossings (1.1.1.1.5)
Track resistance to applied loads (1.1.1.1.6)
Health, safety and environment (1.1.1.1.7)
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Declarations of verification for track DP

General Information

Number:
1.1.1.1.1

Belongs to parameters group
Infrastructure subsystem (1.1.1.1)

Related parameters
EC declaration of verification for infrastructure element relating to compliance with the requirements from TSIs applicable to infrastructure subsystem (1.1.1.1.1.1 | 1.2.1.0.1.1 | 1.2.2.0.1.1)

EI declaration of demonstration (as defined in Commission 2014/881/EU (2)) relating to compliance with the requirements from TSIs applicable to infrastructure subsystem (1.1.1.1.1.2 | 1.2.1.0.1.2 | 1.2.2.0.1.2)

EC declaration of verification for infrastructure element relating to compliance with the requirements from TSIs applicable to infrastructure subsystem DP

Unique number for EC declarations in accordance with Commission Implementing Regulation (EU) 2019/250.

IRI: *http://data.europa.eu/949/verificationINF*

Parameter of

Running track
Siding
Subset with common characteristics

General Information

Number:
1.1.1.1.1.1
1.2.1.0.1.1
1.2.2.0.1.1

XML Name:
IDE_ECVerification

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Declarations of verification for track (1.1.1.1.1)

Data Format

Data Presentation
String

Format:
CC/RRRRRRRRRRRRR/YYYY/NNNNNN

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:

Verification Inf
Comment: Unique number for EC declarations following format requirements specified in the 'Document about practical arrangements for transmitting interoperability documents'.
Message: verificationINF (1.1.1.1.1.1, 1.2.1.0.1.1, 1.2.2.0.1.1): The verificationINF must be a string following the format 'XX/XXXXXXXXXXXXX/YYYY/DDDDDD' where XX is the country code, XXXXXXXXXXXXX is the unique number for EC declarations, YYYY is the year of the declaration (1900-2100) and DDDDDD is the sequential number of the declaration. This error is due to the value not following the pattern.

Additional Information

General explanation:
The parameter may be repeated only when several EC declarations were issued related to the INF subsystem.
With the extension of scope according to the IOD, geographical scope of the INF TSI now includes all the networks (TEN and off-TEN) with the following nominal track gauges: 1435, 1520, 1524, 1600 and 1668 mm

References:
http://data.europa.eu/eli/reg_impl/2019/777/oj
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

EI declaration of demonstration (as defined in Commission 2014/881/EU (2)) relating to compliance with the requirements from TSIs applicable to infrastructure subsystem DP

Unique number for EI declarations following the same format requirements as specified for EC declarations in Annex VII of Commission Implementing Regulation (EU) 2019/250.

IRI: *http://data.europa.eu/949/demonstrationINF*

Parameter of

Running track
Siding
Subset with common characteristics

General Information

Number:
1.1.1.1.1.2
1.2.1.0.1.2
1.2.2.0.1.2

XML Name:
IDE_EIDemonstration

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Declarations of verification for track (1.1.1.1.1)

Data Format

Data Presentation
String

Format:
CC/RRRRRRRRRRRRR/YYYY/NNNNNN

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Demonstration Inf
Comment: Unique number for EI declarations following format requirements specified in the 'Document about practical arrangements for transmitting interoperability documents'.
Message: demonstrationINF (1.1.1.1.1.2, 1.2.1.0.1.2, 1.2.2.0.1.2): The demonstrationINF must be a string following the format 'XX/XXXXXXXXXXXXX/YYYY/DDDDDD' where XX is the country code, XXXXXXXXXXXXX is the unique number for EI declarations, YYYY is the year of the declaration (1900-2100) and DDDDDD is the sequential number of the declaration. This error is due to the value not following the pattern.

Additional Information

General explanation:
It may happen that several EI declarations were issued - then parameter has to be repeated as many times as many declarations were issued.

The procedure for demonstration that existing network fits to requirements of the TSIs is executed on voluntary basis, so when EI declaration do not exist then the parameter is optional. If EI declaration was not issued, then field shall be left empty. EI declaration of demonstration (as defined Commission 2014/881/EU) for track relating to compliance with the requirements from TSIs applicable to infrastructure subsystem.

It may happen that several EI declarations were issued - then parameter has to be repeated as many times as many declarations were issued.

The procedure for demonstration that existing network fits to requirements of the TSIs is executed on voluntary basis, so when EI declaration do not exist then the parameter is optional. If EI declaration was not issued, then field shall be left empty.

References:
http://data.europa.eu/eli/reco/2014/881/oj
http://data.europa.eu/eli/reg_impl/2019/777/2023-09-28

Performance parameter DP OP

General Information

Number:
1.1.1.1.2
1.2.1.0.2
1.2.2.0.2

Belongs to parameters group
Infrastructure subsystem (1.1.1.1)

Related parameters
TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)
Category of line (1.1.1.1.2.2 | 1.2.1.0.2.2)
Part of a Railway Freight Corridor (1.1.1.1.2.3 | 1.2.1.0.2.3)
Load capability (1.1.1.1.2.4)
National classification for load capability (1.1.1.1.2.4.1)
Compliance of structures with the High Speed Load Model (HSLM) (1.1.1.1.2.4.2)
Railway location of structures requiring specific checks (1.1.1.1.2.4.3)
Document with the procedure(s) for static and dynamic route compatibility checks (1.1.1.1.2.4.4)
Maximum permitted speed (1.1.1.1.2.5)
Temperature range (1.1.1.1.2.6)
Maximum altitude (1.1.1.1.2.7)
Existence of severe climatic conditions (1.1.1.1.2.8)
Compatible with line category

TEN classification of track OP

Indication of the part of the trans-European network the infrastructure element belongs to.

IRI: *http://data.europa.eu/949/tenClassification*

Also Known As:
Trans-European Network (TEN) classification of track

Parameter of
Platform edge
Running track
Siding
Subset with common characteristics

General Information

Number:
1.1.1.1.2.1
1.2.1.0.2.1
1.2.1.0.6.3
1.2.2.0.0.3

XML Name:
IPP_TENClass
IPL_TENClass

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)
Platform (1.2.1.0.6)
Siding (1.2.2)

Data Format

Data Presentation
Concept

Taxonomy Reference:
TEN Classifications

Values :

Code	Value
10	Part of the TEN-T Comprehensive Network
20	Part of the TEN-T Core Freight Network
30	Part of the TEN-T Core Passenger Network
40	Off TEN
50	Part of the TEN-T Extended Core Freight Network
60	Part of the TEN-T Extended Core Passenger Network

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:

Ten Classification Skost
Comment: Indication of the TEN classification of track.
Message: TEN classification (1.1.1.1.2.1, 1.2.1.0.2.1): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/ten-classifications/TENClassifications.

Ten Classification S
Comment: Indicates the part of the trans-European network the platform belongs to.
Message: TEN classification (1.1.1.1.2.1, 1.2.1.0.2.1, 1.2.1.0.6.3, 1.2.2.0.0.3): This error may be due to having a Platform with a TEN classification that is not an URI.

Ten Classification P
Comment: Indicates the part of the trans-European network the platform belongs to.
Message: TEN classification (1.2.1.0.6.3): This error may be due to having a Platform with a TEN classification that is not an URI.

Ten Classification T
Comment: Indication of the part of the trans-European network the line belongs to.
Message: tenClassification (1.1.1.1.2.1, 1.2.1.0.2.1): The track has a TEN classificaion value (Indication of the part of the trans-European network the line belongs to) that must be an IRI.

Ten Classification Pre Deprecation Warning
Comment: Warning that tentNetworkLevel is to be preferred over the tenClassification.
Message: tenClassification (Warning): The track {$this} uses the property 'tenClassification'. Please use 'tentNetworkLevel' and 'typeOfTraffic' with the respective SKOS concepts instead.

Ten Classification Skoss
Comment: Indication of the part of the trans-European network the line belongs to.
Message: TEN classification (1.1.1.1.2.1, 1.2.1.0.2.1, 1.2.1.0.6.3, 1.2.2.0.0.3): The siding {$this} with label {?sidingLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/ten-classifications/TENClassifications.
Ten Classification Skosp
Comment: Indicates the part of the trans-European network the platform belongs to.
Message: TEN classification (1.2.1.0.6.3): The platform {$this} with label {?label} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/ten-classifications/TENClassifications.

Additional Information

General explanation:
Article 39 2. freight lines of the core network as indicated in Annex I: at least 22,5 t axle load, 100 km/h line speed and the possibility of running trains with a length of 740 m.

References:
http://data.europa.eu/eli/reg/2013/1315/2024-03-18

Category of line OP

Classification of a line according to the TSI INF

IRI: *http://data.europa.eu/949/lineCategory*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.2
1.2.1.0.2.2

XML Name:
IPP_LineCat

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Line Categories

Values :

Code	Value
10	P1
20	P2
30	P3
40	P4
50	P5
60	P6
70	P1520
80	P1600
90	F1
100	F2
110	F3
120	F4
130	F1520
140	F1600

Flags

Applicability Flags:

Y/N

Validation

Validation Rules:

Line Category Skos
Comment: Classification of a line according to the TSI INF.
Message: lineCategory (1.1.1.1.2.2, 1.2.1.0.2.2): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/line-category/LineCategories.
Line Category
Comment: Classification of a line according to the TSI INF.
Message: lineCategory (1.1.1.1.2.2, 1.2.1.0.2.2): The track must have a classification of a line value that is an IRI.

Additional Information

General explanation:

For RINF: INF TSI (4.2.1) classifies lines based on the type of traffic (traffic code).

TSI categories of line shall be used for the classification of existing lines to define a target system so that the relevant performance parameters will be met.

The TSI category of line is a combination of traffic codes. For lines where only one type of traffic is carried (for example a freight only line), a single code can be used to describe the requirements; where mixed traffic runs the category will be described by one or more codes for passenger and freight in case of two types of traffic. Then the parameter is repeated if relevant. The combined traffic codes describe the envelope within which the desired mix of traffic can be accommodated.

Technical scope of the INF TSI includes all the networks (TEN and off-TEN) for nominal track gauges 1435, 1520, 1524, 1600 and 1668 mm.
It is not applicable when track is not included in technical scope of the TSI.
When more than one value of the parameter has to be published, then parameter has to be repeated as many times as many values of the parameter will be published.

Example:

```
If a line is operated by passenger trains with speed of 250 km/h, local
commuter trains with speed of 120 km/h and heavy freight trains in the
night, then the best combination of traffic codes seems to be P2, P5 and F1.
Then, the TSI category of line for this case would simply be P2-P5-F1.
```

References:
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

Part of a Railway Freight Corridor OP

Indication whether the line is designated to a Railway Freight Corridor.

IRI: *http://data.europa.eu/949/freightCorridor*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.3
1.2.1.0.2.3

XML Name:
IPP_FreightCorridor

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
Concept

Taxonomy Reference:

Freight Corridors

Values :

Code	Value	Also Known As
10	Rhine-Alpine RFC	Rhine-Alpine RFC (RFC 1)
20	North Sea-Mediterranean RFC	North Sea-Mediterranean RFC (RFC 2)
30	Scandinavian – Mediterranean RFC	Scandinavian – Mediterranean RFC (RFC 3)
40	Atlantic RFC	Atlantic RFC (RFC 4)
50	Baltic-Adriatic RFC	Baltic-Adriatic RFC (RFC 5)
60	Mediterranean RFC	Mediterranean RFC (RFC 6)
70	Orient-EastMed RFC	Orient-EastMed RFC (RFC 7)
80	North Sea-Baltic RFC	North Sea-Baltic RFC (RFC 8)
90	Rhine – Danube RFC	Rhine – Danube RFC (RFC 9)
100	Alpine-Western Balkan RFC	Alpine-Western Balkan RFC (RFC 10)
110	Amber RFC	Amber RFC (RFC 11)

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Freight Corridor Shape
Comment: Indication whether the line is designated to a Railway Freight Corridor
Message: freightCorridor (1.1.1.1.2.3, 1.2.1.0.2.3): Each track may have an indication whether the line is designated to a Railway Freight Corridor that is an IRI. This error is due to having a value that is not an IRI.
Freight Corridor
Comment: Indication whether the line is designated to a Railway Freight Corridor
Message: freightCorridor (1.1.1.1.2.3, 1.2.1.0.2.3): Each track may have an indication whether the line is designated to a Railway Freight Corridor that is an IRI. This error is due to having a value that is not an IRI.

Freight Corridor Pre Deprecation Warning
Comment: Warning that europeanTransportCorridor is to be preferred over the freightCorridor.
Message: freightCorridor (Warning): The track {$this} uses the property 'freightCorridor'. Please use 'europeanTransportCorridor' with the respective SKOS concepts instead.
Freight Corridor Skos
Comment: Indication whether the line is designated to a Railway Freight Corridor
Message: Indication whether the line is designated to a Railway Freight Corridor (1.1.1.1.2.3, 1.2.1.0.2.3): The National Line {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/freight-corridor/FreightCorridors.

Additional Information

General explanation:
It is recommended to use the property era:europeanTransportCorridor with the respective SKOS concepts instead of this property. Not applicable if the line is not part of an RFC. If a line belongs to several corridors, repeat the parameter.

See also:
Reg 913/2010/EC

References:
http://data.europa.eu/eli/reg/2010/913/2024-07-18

Load capability OP

Relates the track with the class LoadCapability. A combination of the line category and speed at the weakest point of the track.

IRI: *http://data.europa.eu/949/trackLoadCapability*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.4

XML Name:
IPP_LoadCap

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
Load capability

Format:

The value of this parameter is an instance of the era:LoadCapability class which consists of 2 properties:
- era:loadCapabilityLineCategory - as a taxonomy of load models representing line category
- era:loadCapabilitySpeed - integer for the value of speed [km/h] permitted for a specific load model

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, the data format is: [CCCC] [NNN],
where:
- [CCCC] is a single selection from the predefined list of load models representing line category
- [NNN] is the value of speed [km/h] permitted for a specific load model.

Unit of Measure:
Kilometre per Hour

Flags

Applicability Flags:
Y

Validation

Validation Rules:
Track Load Capability
Comment: Relates the track with the class LoadCapability. A combination of the line category and speed at the weakest point of the track.
Message: trackLoadCapability (1.1.1.1.2.4): The track defines a load capability value that must be an instance of LoadCapability.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:

At this step, RINF does not allow to enter additional data referred to additional speed regulations and operating requirements relating to locomotives (e.g., locomotive classes and associated maximum speed) or traffic types (e.g., maximum speed of freight traffic or passenger traffic).

The load capability describes the weakest point of this track within this section of line (which is normally a bridge or other sub-track structure).
It is expressed as a combination of the line category and speed permitted for trains exerting loads defined for this line category.
The result of the classification process is set out in EN 15528:2021 (Annex A) and referred to in that standard as Line Category.

The Load capability for UK in respect of Northern Ireland consists of RA and speed in miles per hour. RA shall be applied according to UK Railway Group Standard GE/RT8006, Issue Two, September 2010.

More than one combination may be published for the same track if applicable, but it has to be done by repetition of the parameter with one value selected only that is why Y is given in line Can be repeated.
For the following cases, it is not possible to use EN 15528:2021 categories of line classification:
- TSI categories of line P1520 and F1520 (passenger traffic or freight traffic at any speed)
- TSI categories of line P1600 and F1600 (passenger traffic or freight traffic at any speed)

When more than one value of the parameter has to be published, then parameter has to be repeated as many times as many values of the parameter will be published.

Example:

```
The set of selected data may include: B2-160, D4-120 and E5-100
When classifying infrastructure lines into line categories, the
following options shall be used by the infrastructure manager
to optimize freight traffic:
Option 1: determination of the line category at maximum freight
traffic speed (maximum 120 Km/h)
Option 2: determination of a line category at an associated
lower speed (less than the maximum freight traffic speed)
Example of option 1 (Annex F of EN 15528:2021): In a given
track, if the traffic is mixed, the local speed of the line is
90 Km/h and the determined line category is D4 at a maximum of
90 Km/h, the information displayed should be: D4/90.
Example of option 2 (Annex F of EN 15528:2021): In a given
track, if the traffic is mixed, the local speed of the line is
120 Km/h and the determined line category is C4 at a maximum of
120 Km/h and D4 at maximum of 90 Km/h, the information
displayed should be: C4/120 and D4/90.
```

See also:

INF TSI: 4.2.1, 4.2.7.1, 4.2.7.2, 4.2.7.4
Annex D1 OPE TSI

National classification for load capability DP

National classification for load capability

IRI: *http://data.europa.eu/949/nationalLoadCapability*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.4.1

XML Name:
IPP_NCLoadCap

Deadline:
16 January 2020

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
National Load Capability
Comment: National classification for load capability
Message: nationalLoadCapability (1.1.1.1.2.4.1): The track has a national load capability value that must be a string. This error may be due to the track having a value of national load capability that is not a character string.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Some Networks are using National classification for load capability (instead of parameter 1.1.1.1.2.4 Load capability that provide load capability in accordance with EN 15528)

Example:

```
The French IM SNCF reseau is using the concept of 'groupe
Demeaux' with the following definition is 'Groupe de
classification de la voie tenant compte de la resistance de son
armement en flexion verticale'.
```

Compliance of structures with the High Speed Load Model (HSLM) DP

For sections of line with a maximum permitted speed of 200 km/h or more. Information regarding the procedure to be used to perform the dynamic compatibility check.

IRI: *http://data.europa.eu/949/highSpeedLoadModelCompliance*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.4.2

XML Name:
IPP_HSLMCompliant

Deadline:
16 January 2020

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
High Speed Load Model Compliance
Comment: For sections of line with a maximum permitted speed of 200km/h or more information regarding the procedure to be used to perform the dynamic compatibility check
Message: highSpeedLoadModelCompliance (1.1.1.1.2.4.2): The track must have at most one high speed load model compliance value that must be Y/N (boolean). This error may be due to the track having more than one value or having a value of high speed load model compliance that is not Y/N.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
(TSI INF 4.2.7.1.2(2)) Applicable if the maximum permitted speed of the running track is more than 200km/h and the structures within the section of line are all compatible with the High Speed Load Model (HSLM); information regarding the procedure to be used to perform the dynamic compatibility check shall be provided as well.

See also:
Annex D1 OPE TSI
INF TSI: 4.2.7.1.2(2)

References:
http://data.europa.eu/eli/reg/2014/1299/2023-09-28#tocId30
http://data.europa.eu/eli/reg/2014/1299/2023-09-28#tocId3

Railway location of structures requiring specific checks
DP

Localisation of structures requiring specific checks

IRI: *http://data.europa.eu/949/structureCheckLocation*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.4.3

XML Name:
IPP_StructureCheckLoc

Deadline:
16 January 2020

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
Double

Flags

Applicability Flags:
Y/N

Validation

Dependencies:

This information is to be linked with parameter 1.1.1.1.2.4.4

Validation Rules:

Structure Check Location
Comment: Localisation of structures requiring specific checks.
Message: structureCheckLocation (1.1.1.1.2.4.3): The track has a location of the structure check value that must be a double (real) number and follow the format [±NNNN.NNN]. This error may be due to the track having a value that does not follow the pattern or is not a double (real) number.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The railway location identifies the location of the structure in the system of reference of the line to which the track belongs.

Example:

```
The IM A knows that its bridge X might have problems with
combination of speed and load above a certain limit values Z,
and for that the IM A has a specific procedure W for the check
to be done; if the vehicle operation is intended to be within
this case (above the limit Z), then RU shall proceed in
accordance to the procedure W; therefore the bridge X shall be
referred to in the parameter of the RINF:  1.1.1.1.2.4.3 /
Railway location of structures requiring specific checks.
```

Document with the procedure(s) for static and dynamic route compatibility checks OP

Electronic document available in two EU languages from the IM stored by the Agency with:
- precise procedures for the static and dynamic route compatibility checks;
Or
- relevant information for carrying out the checks for specific structures.

IRI: *http://data.europa.eu/949/compatibilityProcedureDocument*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.4.4

XML Name:
IPP_StructureCheckDocRef

Deadline:
16 January 2020

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Compatibility Procedure Document
Comment: Document with the procedure for static and dynamic compatibility checks.
Message: compatibilityProcedureDocument (1.1.1.1.2.4.4): The track has a name of the compatibility procedure document that must be a Document.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Maximum permitted speed DP

Nominal maximum operational speed on the line as a result of infrastructure, energy and control, command signalling subsystem characteristics expressed in kilometres/hour.

IRI: *http://data.europa.eu/949/maximumPermittedSpeed*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.5

XML Name:
IPP_MaxSpeed

Deadline:

In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
Integer

Unit of Measure:
Kilometre per Hour

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Maximum Permitted Speed
Comment: Maximum permitted speed.
Message: maximumPermittedSpeed (1.1.1.1.2.5): The track must have at most one value of maximum permitted speed that is an integer that lies within the range 0 to 500. This error may be due to the track having more than one value of maximum permitted speed, that the value does not lie within the range, or that the value is not an integer.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.1.4

Additional Information

General explanation:
"Speed on the line" shall be understood as speed on the track of the section of line in question.

Example:

```
In case INF, ENE and/or CCS allow different speeds, the max
permitted speed on this track of this section of line shall be
the lowest one.
In case the maximum permitted speed for freight and passenger
trains operation are different, the max permitted speed on this
track of this section of line shall be the highest one.
```

See also:
INF TSI, ENE TSI, CCS TSI

Temperature range OP

Temperature range for unrestricted access to the line.

IRI: *http://data.europa.eu/949/temperatureRange*

Parameter of

Restriction
Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.1.2.6

XML Name:
IPP_TempRange

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Temperature ranges

Values :

Code	Value	Also Known As
10	T1	T1 (-25 to +40)
20	T2	T2 (-40 to +35)
30	T3	T3 (-25 to +45)
40	Tx	Tx (-40 to +50)

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:

Temperature Range Skos
Comment: Indication of the temperature range of track.
Message: Indication of the temperature range (1.1.1.1.2.6):): The track {$this} has a value {? concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/temperature-ranges/TemperatureRanges.
Temperature Range
Comment: Indication of the temperature range of track.
Message: temperatureRange (1.1.1.1.2.6): Each track may have exactly one temperature range value that must be an IRI. This error may be due to the track not having a temperature range, or having more than one temperature range.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
T1 (-25 to +40) - 3.1.1
T2 (-40 to +35) - 3.1.2
T3 (-25 to +45) - 3.1.3
Tx (-40 to +50) - 3.1.4

See also:
https://www.era.europa.eu/system/files/2022-11/list_harmonised_national_restriction_codes_en.pdf
Loc&Pas TSI: 4.2.6.1.1
4.2.5 Wag TSI

Maximum altitude DP

Highest point of the section of line above sea level in reference to Normal Amsterdam's Peil (NAP).

IRI: *http://data.europa.eu/949/maximumAltitude*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.7

XML Name:
IPP_MaxAltitude

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
Double

Format:

[+/-][NNNN]

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Maximum Altitude
Comment: Highest point of the section of line above sea level in reference to Normal Amsterdam's Peil (NAP).
Message: maximumAltitude (1.1.1.1.2.7): The track must define at most one maximum altitude value that must be a double (real) number with format[±NNNN]. This error may be due to the track having more than one value of maximum altitude or that the value is not a double (real) number.

Additional Information

General explanation:
Normaal Amsterdams Peil (NAP), called also Amsterdam Ordnance Datum, it is a vertical datum commonly in use in Europe as reference level for the description of the height of objects in relation to the sea level.

The value of the parameter shall be given in metres, with tolerance of +/-100m.

Existence of severe climatic conditions DP

Climatic conditions on the line are severe according to European standard.

IRI: *http://data.europa.eu/949/hasSevereWeatherConditions*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.8

XML Name:
IPP_SevereClimateCon

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation

Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Severe Weather Conditions
Comment: Climatic conditions on the line are severe according to European standard.
Message: hasSevereWeatherConditions (1.1.1.1.2.8): The track must have at most one existence of severe weather conditions value that must be Y/N (boolean). This error may be due to the track having more than one value of has severe weather conditions or that the value is not Y/N (boolean).

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Value 'true' shall be selected in case there are possible severe climatic conditions to be expected, i.e. a significant amount of snow or ice is to be expected during winter and vehicle should be designed accordingly to be able to run in such conditions. (compliance to 4.2.6.1.2(3),(4) of TSI Loc&Pas required). 'False' to be selected otherwise.

Nominal and severe conditions are defined at TSI Loc&Pas level, section 4.2.6.1.2, which requires that the applicant declares to which snow conditions a vehicle complies with : either "nominal" or "severe" conditions. This technical aspect is reflected in the parameter 4.3.3 "Snow, ice and hail conditions" of ERATV , which will provide the two possible values:
- Nominal conditions correspond to compliance with clause 4.7 of EN 50125 as referred in the §4.2.6.1.2 (1) of TSI Loc&Pas.
To be noted: It is not required to precise the categorisation S1, S2 or S3 as mentioned in the EN 50125.
- Severe conditions correspond to compliance with §4.2.6.1.2 (3) and (4) : the applicant designs and tests its vehicle according to the different scenarios mentioned in the TSI §4.2.6.1.2 (3) (snowdrift, powder snow, temperature gradient, etc.) and set the related provisions to achieve this as required by §4.2.6.1.2 (4) (obstacle deflector of sufficient size, effect of ice and snow on running gear and brake function, etc.).

See also:
EN 50125-1 (2014): 4.7
LOC&PAS TSI:4.2.6.1.2

References:
http://data.europa.eu/eli/reg/2014/1302/2023-09-28

Line layout DP OP

General Information

Number:
1.1.1.1.3
1.2.1.0.3

Belongs to parameters group
Infrastructure subsystem (1.1.1.1)

Related parameters
Gauging (1.1.1.1.3.1.1 | 1.2.1.0.3.4)
Railway location of particular points requiring specific checks (1.1.1.1.3.1.2 | 1.2.1.0.3.5)
Document with the transversal section of the particular points requiring specific checks (1.1.1.1.3.1.3 | 1.2.1.0.3.6)
Standard combined transport profile number for swap bodies (1.1.1.1.3.4)
Standard combined transport profile number for semi-trailers (1.1.1.1.3.5)
Specific information (1.1.1.1.3.5.1)
Gradient profile (1.1.1.1.3.6)
Minimum radius of horizontal curve (1.1.1.1.3.7 | 1.2.2.0.3.2)
Standard combined transport profile number for containers (1.1.1.1.3.8)
Standard combined transport profile number for roller units (1.1.1.1.3.9)

Gauging OP

Gauges as defined in European standard or other local gauges, including lower or upper part.

IRI: *http://data.europa.eu/949/gaugingProfile*

Also Known As:
[ERATV] Reference profile

Parameter of
Restriction
Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.1.3.1.1
1.2.1.0.3.4

XML Name:
ILL_Gauging

Deadline:
16 January 2020

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
Gauging Profiles

Values :

Code	Value	Also Known As
10	GA	
20	GB	
30	GC	
40	G1	
50	DE3	DE3 (German network)
60	G2	
70	GB1	
80	GB2	
90	BE1	BE1 (Belgian network)
100	BE2	BE2 (Belgian network)
110	BE3	
120	FR-3.3	3.3 (French network), Gauge 3.3
130	PTb	
140	PTb+	
150	PTc	
160	FIN1	FIN1 (Specific case Finland)
170	SEa	Sea, SEa (Swedish network), SEa (Specific case Sweden)
180	SEc	Sec
190	DE1	
200	DE2	DE2 (German network)
210	Z-GCD	
220	UK1	UK1 (UK network)
230	UK1[D]	
240	W6	
250	FS	

Code	Value	Also Known As
260	S	
270	GHE16	GHE16 (Specific case Spain – upper parts)
280	GEA16	
290	GEB16	
300	GEC16	
310	IRL1	
320	IRL2	
330	IRL3	
340	GI1	GI1 (Specific case Spain – lower parts)
341	FR-3.4.1	
342	FR-3.4.2	
350	GI2	GI2 - lower parts, GI2 (Specific case Spain – lower parts), GI2 (lower part), GI2 according EN 15273-2
360	GI3	
370	GEE10	GEE10 (Specific case Spain - METRIC - lower parts)
380	GED10	GED10 (Specific case Spain - METRIC - upper parts)
389	AFG	
390	AFM 423	
400	NL1	NL1 (Dutch network), NL1 (Specific case the Netherlands)
410	NL2	
411	M30	
412	M80	

Code	Value	Also Known As
413	Tram-train 2.40	
414	Tram-train 2.65	
415	Métrique BA	
416	Métrique SGV	
417	Métrique Cerd.	
418	GB:GČD	
419	GCZ3	
420	GČD	
421	GEI1	
422	GEI2	
423	GEI3	
424	GEI14	
425	AFM 425	
426	EBV2_reduziert	
427	AFM 427	
428	EBV3_reduziert	
429	EBV3	
430	EBV4	
431	EBV1	
432	EBV2	
433	AF4.0 – EP	
434	AF4.1 – EP	
435	AF4.2 – EP	
436	AF4.0 – IP	
437	AF4.1 – IP	
438	AF4.2 – IP	
510	AI4.0-E	
520	AI4.0-I	
530	GE14	

Code	Value	Also Known As
540	GEC14	

Flags

Applicability Flags:
Y

Validation

Validation Rules:
Gauging Profile Skos
Comment: Indication of the gauging profile of track.
Message: Gauging profile (1.1.1.1.3.1.1, 1.2.1.0.3.4): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/gaugings/GaugingProfiles.
Gauging Profile
Comment: Gauges as defined in European standard or other local gauges, including lower or upper part.
Message: gaugingProfile (1.1.1.1.3.1.1, 1.2.1.0.3.4): The track must define a value that is an IRI. The error is due to having a value that is not an IRI.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
[ERATV] It is possible to include other values than the already identified and included in the concept scheme. They will be introduced by the Agency on request via a process of change request
EN15273-3: (2013)+A1:2016: Annex C and Annex D
INF TSI: 4.2.3.1
It is possible to include additional values than the already identified and included in the concept scheme. They will be introduced by the Agency on request via a process of change request.

UK in respect of the Northern Ireland have a reference profile, but defined based on national rule:
7.3.2.2 Specific case Ireland and UK for Northern Ireland ('P')
It is permissible for the reference profile of the upper and the lower part of the unit to be established in accordance with the national technical rules notified for this purpose.

See also:
- Annex D1 OPE TSI
- INF TSI: 4.2.3.1, 4.2.3.2

See also:
https://www.era.europa.eu/system/files/2022-11/list_harmonised_national_restriction_codes_en.pdf

References:
https://data.europa.eu/eli/reg/2014/1299/2023-09-28
https://data.europa.eu/eli/reg/2014/1302/2023-09-28

Railway location of particular points requiring specific checks DP

Location of particular points requiring specific checks due to deviations from gauging referred to in parameter "Gauging"

IRI: *http://data.europa.eu/949/gaugingCheckLocation*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.3.1.2
1.2.1.0.3.5

XML Name:
ILL_GaugeCheckLoc

Deadline:
16 January 2020

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Gauging Check Location
Comment: Location of particular points requiring specific checks due to deviations from gauging referred to in 1.1.1.1.3.1.1.
Message: gaugingCheckLocation (1.1.1.1.3.1.2, 1.2.1.0.3.5): The track has a location of the gauging check that must be a string and follow the format [±NNNN.NNN]. The error is due to the value not following the pattern.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:

This parameter is applicable when the IM wants to highlight a particular point requiring checks and provide info via parameter 'Document with the transversal section of the particular points requiring specific checks'.

The railway location identifies the location of the structure in the system of reference of the line to which the track belongs.

The location (generally the distance from the origin of the line to the point of interest for the specific check) on a line is given in kilometres with decimals (precision of 0.001).

Document with the transversal section of the particular points requiring specific checks OP

Electronic document available from the IM stored by the Agency with the transversal section of the particular points requiring specific checks due to deviations from gauging referred to in parameter "Gauging". Where relevant, guidance for the check with the particular point may be attached to the document with the transversal section.

IRI: *http://data.europa.eu/949/gaugingTransversalDocument*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.3.1.3
1.2.1.0.3.6

XML Name:
ILL_GaugeCheckDocRef

Deadline:
16 January 2020

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:

Gauging Transversal Document
Comment: Document with the transversal section of the particular points requiring specific checks.
Message: gaugingTransversalDocument (1.1.1.1.3.1.3, 1.2.1.0.3.6): The track has a transversal document of the gauging check value that must be a Document.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Standard combined transport profile number for swap bodies OP

Coding for combined transport with swap bodies (for all freight and mixed-traffic lines) in accordance with the specification referenced in Appendix A-1, index [B]

IRI: *http://data.europa.eu/949/profileNumberSwapBodies*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.3.4

XML Name:
ILL_ProfileNumSwapBodies

Deadline:
by 16 March 2019 at the latest for lines belonging to the TEN (1.1.1.1.2.1)

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Profile Numbers for Swap Bodies

Values :

Code	Value	Also Known As
10	C 22	
15	C 25	
18	C 30	
20	C 32	
30	C 38	
40	C 45	
50	C 50	
60	C 55	
70	C 60	
80	C 65	
90	C 70	
100	C 80	
110	C 90	
120	C 341	
130	C 349	
140	C 351	
150	C 357	C357
160	C 364	
161	C 365	
162	C 371	
165	C 375	
170	C 380	
174	C 384	
180	C 385	
189	C 389	
190	C 390	
200	C 395	
210	C 400	
220	C 405	

Code	Value	Also Known As
230	C 410	
240	C 420	
242	C 422	
245	C 450	
260	C S55	
270	C S385	

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Profile Number Swap Bodies
Comment: Coding for combined transport with swap bodies as defined in UIC Code.
Message: profileNumberSwapBodies (1.1.1.1.3.4): The track must have values for profile number swap bodies that are IRIs. This error may be due to having a value that is not an IRI.
Profile Number Swap Bodies Skos
Comment: Coding for combined transport with swap bodies as defined in UIC Code.
Message: Indication of the profileNumberSwapBodies(1.1.1.1.3.4):): The track {$this} has a value {? concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/profile-num-swap-bodies/ProfileNumbersSwapBodies.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The technical number is made up of the wagon compatibility code (1 letter) and the standard combined transport profile number (2 digits when width <= 2550 mm or 3 digits when, 2550 < width <= 2600 mm).

Standard combined transport profile number for semi-trailers OP

Coding for combined transport for semi-trailers (for all freight and mixed-traffic lines) in accordance with the specification referenced in Appendix A-1, index [B].

IRI: *http://data.europa.eu/949/profileNumberSemiTrailers*

Parameter of

Running track
Subset with common characteristics

General Information

Number:

1.1.1.1.3.5

XML Name:
ILL_ProfileNumSemiTrailers

Deadline:
by 16 March 2019 at the latest for lines belonging to the TEN (1.1.1.1.2.1)

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Profile Numbers for Semi-Trailers

Values :

Code	Value
10	P 22
15	P 25
18	P 30
20	P 32
30	P 38
40	P 45
50	P 50
60	P 55
69	P 59
70	P 60
80	P 65
90	P 70
100	P 80
110	P 90
120	P 341
130	P 349
140	P 351
150	P 357
160	P 364
161	P 365
162	P 371
165	P 375
170	P 380
174	P 384
180	P 385
190	P 390
200	P 395
210	P 400
220	P 405

Code	Value
230	P 410
240	P 420
242	P 422
245	P 450
260	P S55
270	P S385

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Profile Number Semi Trailers Skos
Comment: Coding for combined transport with semi-trailers as defined in UIC Code.
Message: Indication of the profileNumberSemiTrailers(1.1.1.1.3.5):): The track {$this} has a value {? concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/profile-num-semi-trailers/ProfileNumbersSemiTrailers.
Profile Number Semi Trailers
Comment: Coding for combined transport with semi-trailers as defined in UIC Code.
Message: profileNumberSemiTrailers (1.1.1.1.3.5): The track must have values for profile number semi-trailers that are IRIs. This error may be due to having a value that is not an IRI.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The technical number is made up of the wagon compatibility code (1 letter) and the standard combined transport profile number (2 digits when width <= 2500 mm or 3 digits when 2500 < width <= 2600 mm).
Additional values than the already identified in the list above are possible. They will be introduced by the Agency on request via a process of change request.

Specific information DP

Any relevant information from the IM relating to the line layout

IRI: *http://data.europa.eu/949/specificInformation*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.3.5.1

XML Name:
ILL_SpecificInfo

Deadline:
1 January 2021

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Specific Information
Comment: Any specific information from the IM.
Message: specificInformation (1.1.1.1.3.5.1): The track has a specific information value that must be a string. This error may be due to having a value of specific information from the IM that is not a character string.

Additional Information

General explanation:
This parameter allows the IM to provide plain text with specific information about the track

Gradient profile DP

Sequence of gradient values and locations of change in gradient

IRI: *http://data.europa.eu/949/gradientProfile*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.3.6

XML Name:
ILL_GradProfile

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)

Data Format

Data Presentation
String

Format:
in XML: +/-NN.N (+/-NNNN.NNN)

Flags

Applicability Flags:
Y

Validation

Validation Rules:
Gradient Profile
Comment: Sequence of gradient values and locations of change in gradient.
Message: gradientProfile (1.1.1.1.3.6): The track has a gradient profile value that must be a string with a sequence of comma-separated values in the format [+/-][NN.N]([+/-][NNNN.NNN]). This error may be due to having a sequence of values that are not a string or that do not follow the pattern.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.2.2

Additional Information

General explanation:
Data on the values of gradient along a SoL is given as a chain of information:

Gradient (location) The first location corresponding to the start of the first value of the gradient is the centre point of start OP. If there are different values of the gradient, the parameter will be repeated. The last location will correspond to the point where the last value of the gradient starts. This value will be available until the centre point of the end OP.

If there is only one value for the gradient along the track, then the location is not required, only the +/-NN.N value is expected.

Gradient is expressed in mm/m; location is expressed in km of the line.

Positive gradient (uphill) is marked with "+" and negative gradient (downhill) is marked by "-".

The sequence shall follow the increasing kilometres of the line, and this does not take into consideration the running direction of the specific track. This will make the profile easier to read.

Changes in gradient shall be registered only as far as necessary for train running calculations (minimum length of constant gradient shall be 500 m, the minimum change of gradient value shall be 0,5 mm/m).

The required precision for gradient value is 0,5 mm/m, the required precision of location of the points of change of gradient is 10 m. The points of change of gradient are the points of vertical intersection of each vertical curve.

See also:
INF TSI: 4.2.3.3

References:
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

Minimum radius of horizontal curve DP

Radius of the smallest horizontal curve of the track in metres.

IRI: *http://data.europa.eu/949/minimumHorizontalRadius*

Also Known As:

ERATV: Radius of the smallest horizontal curve capability of the vehicle, expressed in metres.

Parameter of

Restriction
Running track
Siding
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.1.3.7
1.2.2.0.3.2

XML Name:
ILL_MinRadHorzCurve

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)
Siding (1.2.2)
Vehicle type technical characteristic

Data Format

Data Presentation
Integer

Format:
NNNNN

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:

Minimum Horizontal Radius
Comment: Radius of the smallest horizontal curve of The track in metres.
Message: minimumHorizontalRadius (1.1.1.1.3.7, 1.2.2.0.3.2): The track defines a minimum radius of horizontal curve. This error is due to having more than one value, having a value that is not an integer or having an integer that does not follow the pattern [NNNNNN].

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
To describe a straight section of line value " 99999" shall be used.

See also:
INF TSI: 4.2.3.4
EN 13803:2017, Tables N.A and N.2
https://www.era.europa.eu/system/files/2022-11/list_harmonised_national_restriction_codes_en.pdf

References:
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

Standard combined transport profile number for containers OP

Coding for combined transport for containers (for all freight and mixed-traffic lines) in accordance with the specification referenced in Appendix A-1, index [B]

IRI: *http://data.europa.eu/949/standardCombinedTransportContainers*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.3.8

XML Name:
ILL_ProfileNumContainers

Deadline:
12 months after the adoption of the Article 7 Guide for lines belonging to the TEN (1.1.1.1.2.1)

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Standard combined transport containers

Values :

Code	Value
00	ISO 00
01	ISO 01
02	ISO 02
03	ISO 03
04	ISO 04
05	ISO 05
06	ISO 06
07	ISO 07
08	ISO 08
09	ISO 09
10	ISO 10
11	ISO 11
12	ISO 12
13	ISO 13
14	ISO 14
15	ISO 15
16	ISO 16
17	ISO 17
18	ISO 18
19	ISO 19
20	ISO 20
21	ISO 21
22	ISO 22
23	ISO 23
24	ISO 24
25	ISO 25
26	ISO 26
27	ISO 27
28	ISO 28

Code	Value
29	ISO 29
30	ISO 30
31	ISO 31
32	ISO 32
33	ISO 33
34	ISO 34
35	ISO 35
36	ISO 36
37	ISO 37
38	ISO 38
39	ISO 39
40	ISO 40
41	ISO 41
42	ISO 42
43	ISO 43
44	ISO 44
45	ISO 45
46	ISO 46
47	ISO 47
48	ISO 48
49	ISO 49
50	ISO 50
51	ISO 51
52	ISO 52
53	ISO 53
54	ISO 54
55	ISO 55
56	ISO 56
57	ISO 57

Code	Value
58	ISO 58
59	ISO 59
60	ISO 60
61	ISO 61
62	ISO 62
63	ISO 63
64	ISO 64
65	ISO 65
66	ISO 66
67	ISO 67
68	ISO 68
69	ISO 69
70	ISO 70
71	ISO 71
72	ISO 72
73	ISO 73
74	ISO 74
75	ISO 75
76	ISO 76
77	ISO 77
78	ISO 78
79	ISO 79
80	ISO 80
81	ISO 81
82	ISO 82
83	ISO 83
84	ISO 84
85	ISO 85
86	ISO 86

Code	Value
87	ISO 87
88	ISO 88
89	ISO 89
90	ISO 90
91	ISO 91
92	ISO 92
93	ISO 93
94	ISO 94
95	ISO 95
96	ISO 96
97	ISO 97
98	ISO 98
99	ISO 99

Flags

Applicability Flags:

Y/N/NYA

Validation

Validation Rules:

Standard Combined Transport Containers Skos
Comment: Coding for combined transport for containers (for all freight and mixed-traffic lines) in accordance with the specification referenced in Appendix A-1, index [B].
Message: standardCombinedTransportContainers (1.1.1.1.3.8):): The track {$this} has a value {? concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/standard-combined-transport-containers/StandardCombinedTransportContainers.
Standard Combined Transport Containers
Comment: Coding for combined transport for containers (for all freight and mixed-traffic lines) in accordance with the specification referenced in Appendix A-1, index [B].
Message: standardCombinedTransportContainers (1.1.1.1.3.8): The track defines a standard combined transport profile number for containers. This error is due to having a value that is not an IRI.

OPE TSI References

Part of RCC Algorithm:

true

Standard combined transport profile number for roller units OP

Coding for combined transport for roller units (for all freight and mixed-traffic lines) in accordance with the specification referenced in Appendix A-1, index [B]

IRI: *http://data.europa.eu/949/standardCombinedTransportRollerUnits*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.3.9

XML Name:
ILL_ProfileNumRollerUnits

Deadline:
12 months after the adoption of the Article 7 Guide for lines belonging to the TEN (1.1.1.1.2.1)

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Standard combined transport profile numbers for roller units

Values :

Code	Value
00	B 22
01	B 25
02	B 30
03	B 32
04	B 38
05	B 45
06	B 50
07	B 55
08	B 59
09	B 60
10	B 65
11	B 70
12	B 80
13	B 90
14	B 341
15	B 349
16	B 351
17	B 357
18	B 364
19	B 365
20	B 371
21	B 375
22	B 380
23	B 384
24	B 385
25	B 389
26	B 390
27	B 395
28	B 400

Code	Value
29	B 405
30	B 410
31	B 420
32	B 422

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Standard Combined Roller Units Skos
Comment: Coding for combined transport for roller units (for all freight and mixed-traffic lines) in accordance with the specification referenced in Appendix A-1, index [B].
Message: standardCombinedTransportRollerUnits (1.1.1.1.3.9):): The track {$this} in the Section of Line {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/standard-combined-transport-roller-units/StandardCombinedTransportRollerUnits.
Standard Combined Roller Units
Comment: Coding for combined transport for roller units (for all freight and mixed-traffic lines) in accordance with the specification referenced in Appendix A-1, index [B].
Message: standardCombinedTransportRollerUnits (1.1.1.1.3.9): The track defines a standard combined transport profile number for roller units. This error is due to having or having a value that is not an IRI.

OPE TSI References

Part of RCC Algorithm:
true

Track parameters DP OP

General Information

Number:
1.1.1.1.4
1.2.1.0.4

Belongs to parameters group
Infrastructure subsystem (1.1.1.1)

Related parameters
Nominal track gauge (1.1.1.1.4.1 | 1.2.1.0.4.1)
Cant deficiency (1.1.1.1.4.2)
Rail inclination (1.1.1.1.4.3)
Existence of ballast (1.1.1.1.4.4)
Use of eddy current brakes (1.1.1.1.6.2 | 1.2.1.0.4.2)
Permission for regenerative braking (1.1.1.2.2.4)

Nominal track gauge OP

A single value expressed in millimetres that identifies the track gauge.

IRI: *http://data.europa.eu/949/wheelSetGauge*

Parameter of

Restriction
Running track
Subset with common characteristics
Vehicle Registration Restriction
Vehicle Type
Vehicle Type Authorisation Restriction

General Information

Number:
1.1.1.1.4.1
1.2.1.0.4.1

XML Name:
ITP_NomGauge

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Track parameters (1.1.1.1.4 | 1.2.1.0.4)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
Nominal Track Gauges

Values :

Code	Value	Also Known As
10	750	750
20	1000	1000mm
30	1435	1435mm
40	1520	1520mm
50	1524	1524mm
60	1600	1600mm
70	1668	1668mm

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Wheel Set Gauge Skos
Comment: A single value expressed in millimeters that identifies The track gauge.
Message: Nominal track gauge (1.1.1.1.4.1, 1.2.1.0.4.1): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/nominal-track-gauges/NominalTrackGauges.
Wheel Set Gauge
Comment: A single value expressed in millimeters that identifies the track gauge.
Message: wheelSetGauge (1.1.1.1.4.1, 1.2.1.0.4.1): The track must have at most one wheel set gauge value that is an IRI.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
In case of multi-rail track, a set of data is to be published separately to each pair of rails to be operated as separate track (the whole set of parameters for the separate track has to be delivered be careful then with the track identification). Nominal track gauges provided by the INF TSI are only 1435, 1520, 1524, 1600 and 1668.

See also:
INF TSI: 4.2.4.1
https://www.era.europa.eu/system/files/2022-11/list_harmonised_national_restriction_codes_en.pdf

References:
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

Cant deficiency DP

Maximum cant deficiency expressed in millimetres defined as difference between the applied cant and a higher equilibrium cant the line has been designed for.

IRI: *http://data.europa.eu/949/cantDeficiency*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.4.2

XML Name:
ITP_CantDeficiency

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Track parameters (1.1.1.1.4 | 1.2.1.0.4)

Data Format

Data Presentation
Integer

Format:
+/-NNN

Unit of Measure:
Millimetre

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Cant Deficiency
Comment: Maximum cant deficiency expressed in millimeters defined as difference between the applied cant and a higher equilibrium cant the line has been designed for.
Message: cantDeficiency (1.1.1.1.4.2): The track must have at most one cant deficiency value that is an integer. This error may be due to the track having more than one cant deficiency value or to having a value that is not an int.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
In case of positive value of cant deficiency or zero symbol '+' shall be applied. In case of negative cant deficiency symbol '-' has to be selected. Value of the cant deficiency shall be given in millimetres. In case of lateral uncompensated acceleration on a 1435 mm track gauge of 1.0 m/s2 the value of 153 mm may be published.

See also:
INF TSI: 4.2.4.3

References:
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

Rail inclination OP

An angle defining the inclination of the head of a rail relative to the running surface.

IRI: *http://data.europa.eu/949/railInclination*

Parameter of

Running track
Subset with common characteristics
Vehicle Type
Vehicle type configuration parameter set

General Information

Number:
1.1.1.1.4.3

XML Name:
ITP_RailInclination

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Track parameters (1.1.1.1.4 | 1.2.1.0.4)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Format:
In XML the accepted value is NN, where N is a digit from 0 to 9.

Taxonomy Reference:
Rail Inclinations

Values :

Code	Value	Also Known As
0	No inclination	0
10	1/10	1:10
20	1/20	1:20
25	1/25	1:25
30	1/30	1:30
40	1/40	1:40
50	1/50	1:50
60	1/60	1:60
70	1/70	1:70
80	1/80	1:80

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:

Rail Inclination
Comment: An angle defining the inclination of the head of a rail relatie to the running surface.
Message: railInclination (1.1.1.1.4.3): The track must have at most one rail inclination measurement value that is an IRI. This error may be due to the track having more than one rail inclination measurement value or to having a value that is not an IRI.
Rail Inclination Skos
Comment: An angle defining the inclination of the head of a rail relatie to the running surface.
Message: Indication of the rail inclination (1.1.1.1.4.3):): The track {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/rail-inclinations/RailInclinations.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
[ERATV] This inclination is in most cases expressed for MS RINF globally, but anyway it requires presentation for the specific track, when in one SoL more values occur.

An angle defining the inclination of the head of a rail when installed in the track relative to the plane of the rails (running surface), equal to the angle between the axis of symmetry of the rail (or of an equivalent symmetrical rail having the same rail head profile) and the perpendicular to the plane of the rails. [NN] represents the denominator of the rail inclination expressed as 1/NN. The typical values are 1:20, 1:30, 1:40.

For a VehicleType, the value should currently be considered independent of a Vehicle Configuration. This inclination is in most cases expressed for MS globally, but anyway it requires presentation for the specific track, when in one SoL more values occur.
An angle defining the inclination of the head of a rail when installed in the track relative to the plane of the rails (running surface), equal to the angle between the axis of symmetry of the rail (or of an equivalent symmetrical rail having the same rail head profile) and the perpendicular to the plane of the rails. The typical values for the railway inclination are 1:20, 1:30, 1:40.

See also:
INF TSI:4.2.4.7

References:
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

Existence of ballast DP

Specifies whether track construction is with sleepers embedded in ballast or not.

IRI: *http://data.europa.eu/949/hasBallast*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.4.4

XML Name:
ITP_Ballast

Deadline:

In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Track parameters (1.1.1.1.4 | 1.2.1.0.4)

Data Format

Data Presentation
Boolean

Format:
in XML: Y/N

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory for tracks with permitted speed (parameter 1.1.1.1.2.5) greater than 250km/h

Validation Rules:
Has Ballast
Comment: Specifies whether the track construction is with sleepers embedded in ballast or not.
Message: hasBallast (1.1.1.1.4.4): The track must have at most one existence of ballast value that is Y/N (boolean). This error may be due to the track having more than one has ballast value or to having a value that is not Y/N (boolean).
Has Ballast Applicability
Comment: Specifies whether track construction is with sleepers embedded in ballast or not.
Message: hasBallast (1.1.1.1.4.4): This error is due to the track {?trackLabel} , violating the rule: Y for tracks with permitted speed (parameter 1.1.1.1.2.5) greater than 250km/h.

Additional Information

General explanation:
This parameter is related to phenomena of ballast pick-up observed for the high-speed traffic.
Requirements regarding ballast pick-up reduction at infrastructure subsystem level only applies to lines intended to be operated at speed greater than 250 km/h and is an open point in INF TSI: 4.2.10.3
The parameter is about the phenomenon of ballast pick-up observed for the high-speed traffic, not about the ballast itself.
As so far any specifications for mitigation of the problem were disclosed, the only information from RINF will be data about the network where the problems may be faced.

See also:
Loc&Pas TSI 4.2.6.2.5
INF TSI : 4.2.10.3

References:
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

Switches and crossings DP

General Information

Number:
1.1.1.1.5

Belongs to parameters group
Infrastructure subsystem (1.1.1.1)

Related parameters
TSI compliance of in-service values for switches and crossings (1.1.1.1.5.1)
Minimum wheel diameter for fixed obtuse crossings (1.1.1.1.5.2)

TSI compliance of in-service values for switches and crossings DP

Switches and crossings are maintained to in service limit dimension as specified in TSI.

IRI: *http://data.europa.eu/949/tsiSwitchCrossing*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.5.1

XML Name:
ISC_TSISwitchCrossing

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Switches and crossings (1.1.1.1.5)

Data Format

Data Presentation
Boolean

Format:
in XML: Y/N

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Tsiswitch Crossing
Comment: Switches and crossings are maintained to in service limit dimension as specified in TSI.
Message: tsiSwitchCrossing (1.1.1.1.5.1): The track must have at most one existence of TSI switches and crossing value that is Y/N (boolean). This error may be due to the track having more than one tsi swith crossing value or to having a value that is not Y/N (boolean).

Additional Information

General explanation:
If for existing track at least one parameter has less strict value than specified in the TSI, then 'N' (false) shall be selected.

See also:
INF TSI: 4.2.5 and 4.2.8.6

References:
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

Minimum wheel diameter for fixed obtuse crossings DP

Maximum unguided length of fixed obtuse crossings is based on a minimum wheel diameter in service expressed in millimetres.

IRI: *http://data.europa.eu/949/minimumWheelDiameter*

Parameter of

Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.1.5.2

XML Name:
ISC_MinWheelDiaFixObtuseCrossings

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Switches and crossings (1.1.1.1.5)
Vehicle type technical characteristic

Data Format

Data Presentation
Integer

Format:
NNN

Unit of Measure:
Millimetre

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Minimum Wheel Diameter
Comment: Maximum unguided length of fixed obtuse crossings is based on a minimum wheel diameter in service expressed in millimiters.
Message: minimumWheelDiameter (1.1.1.1.5.2): The track must have at most one minimum wheel diameter value that is an integer. This error may be due to the track having more than one minimum wheel diameter value or to having a value that is not an integer. If the value of the wheel diameter is bigger than 330 mm, it has to be specified.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The minimum TSI value is 330 mm and this shall be used as a default value unless advised otherwise. If the value of the wheel diameter is bigger than 330 mm, it has to be specified.
New lines are assumed to be compliant with the TSI INF. When the line is compliant to TSI the default value of 330 mm has to be presented.

See also:
INF TSI: 4.2.5.3

References:
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

Track resistance to applied loads DP OP

General Information

Number:
1.1.1.1.6

Belongs to parameters group
Infrastructure subsystem (1.1.1.1)

Related parameters
Maximum train deceleration (1.1.1.1.6.1)
Use of eddy current brakes (1.1.1.1.6.2 | 1.2.1.0.4.2)
Use of magnetic brakes (1.1.1.1.6.3 | 1.2.1.0.4.3)
Document with the conditions for the use of eddy current brakes (1.1.1.1.6.4)
Document with the conditions for the use of magnetic brakes (1.1.1.1.6.5)
Permission for regenerative braking (1.1.1.2.2.4)

Maximum train deceleration DP

Limit for longitudinal track resistance given as a maximum allowed train deceleration and expressed in metres per square second.

IRI: *http://data.europa.eu/949/maximumTrainDeceleration*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.6.1

XML Name:
ILR_MaxDeceleration

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Track resistance to applied loads (1.1.1.1.6)

Data Format

Data Presentation
Double

Format:
N.N

Unit of Measure:
Metre per Square Second

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Not applicable if line is not in scope of INF TSI

Validation Rules:
Maximum Train Deceleration
Comment: Limit for longitudinal track resistance given as a maximum allowed train deceleration and expressed in m/s2.
Message: maximumTrainDeceleration (1.1.1.1.6.1): The track must have at most one maximum train deceleration value that is a double (real) number . This error may be due to the track having more than one maximum train deceleration value or to having a value that is not a real (double) number.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
New lines are assumed to be compliant with the TSI INF.
For TSI compliant lines the default value of 2.5 m/s2 shall be presented.

If for the design of the track the braking forces were assumed on basis of the deceleration lower value than 2.5 m/s2, the applied value of the deceleration has to be specified.

See also:
INF TSI: 4.2.6

References:
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

Use of eddy current brakes OP

Indication of limitations on the use of eddy current brakes.

IRI: *http://data.europa.eu/949/eddyCurrentBraking*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.6.2
1.2.1.0.4.2

XML Name:
ILR_EddyCurrentBrakes

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Track parameters (1.1.1.1.4 | 1.2.1.0.4)
Track resistance to applied loads (1.1.1.1.6)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Eddy Current Braking

Values :

Code	Value
10	Allowed
20	Allowed under conditions
30	Allowed only for emergency brake
40	Allowed under conditions only for emergency brake
50	Not allowed

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Eddy Current Braking
Comment: Indication of limitations on the use of eddy current brakes.
Message: eddyCurrentBraking (1.1.1.1.6.2, 1.2.1.0.4.2): The track must have a single use of eddy current brakes value that is an IRI. This error is due to having more than one value or having a value that is not an IRI.
Eddy Current Braking Skos
Comment: Indication of limitations on the use of eddy current brakes.
Message: eddyCurrentBraking (1.1.1.1.6.2, 1.2.1.0.4.2): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/eddy-current-braking/EddyCurrentBraking.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.4.5

Additional Information

General explanation:
The use of both brakes is allowed or not under exterior conditions (depending on the features of the train engines for example).
The RINF can't be filled without more precisions.

See also:
INF TSI: 4.2.6.2.2 (2)
OPE TSI: 4.2.2.6.2 (1) (iv)

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

Use of magnetic brakes OP

Indication of limitations on the use of magnetic brakes.

IRI: *http://data.europa.eu/949/magneticBraking*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.6.3
1.2.1.0.4.3

XML Name:
ILR_MagneticBrakes

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Track resistance to applied loads (1.1.1.1.6)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Magnetic Braking

Values :

Code	Value
10	Allowed
20	Allowed under conditions
30	Allowed under conditions only for emergency brake
40	Allowed only for emergency brake
50	Not allowed

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:

Magnetic Braking
Comment: Indication of limitations on the use of magnetic brakes.
Message: magneticBraking (1.1.1.1.6.3, 1.2.1.0.4.3): The track must have a single use of magnetic brakes value that is an IRI. This error is due to having more than one value or having a value that is not an IRI.
Magnetic Braking Skos
Comment: Indication of limitations on the use of magnetic brakes.
Message: magneticBraking (1.1.1.1.6.3, 1.2.1.0.4.3): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/magnetic-braking/MagneticBraking.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.4.6

Additional Information

See also:
INF TSI: 4.2.6.2.2
OPE TSI: 4.2.2.6.2 (1) (iv)

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

Document with the conditions for the use of eddy current brakes OP

Electronic document available in two EU languages from the IM stored by the Agency with conditions for the use of eddy current brakes identified in 1.1.1.1.6.2.

IRI: *http://data.europa.eu/949/eddyCurrentBrakingConditionsDocument*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.6.4

XML Name:
ILR_ECBDocRef

Deadline:
16 January 2020

Belongs to parameters group
Track resistance to applied loads (1.1.1.1.6)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Mandatory value to be provided when 1.1.1.1.6.2/Use of eddy current brakes is allowed under conditions or allowed under conditions only for emergency brake

Validation Rules:
Eddy Current Braking Conditions Document Applicability
Comment: Electronic document available in two EU languages from the IM stored by the Agency with conditions for the use of eddy current brakes identified in 1.1.1.1.6.2.
Message: eddyCurrentBrakingConditionsDocument (1.1.1.1.6.4): This error is due to the track {?trackLabel} , violating the rule: Y in case of Y for 1.1.1.1.6.2 Use of eddy current brakes is “allowed under conditions” or “allowed under conditions only for emergency brake””.
Eddy Current Braking Conditions Document
Comment: Electronic document available in two EU languages from the IM stored by the Agency with conditions for the use of eddy current brakes identified in 1.1.1.1.6.2.
Message: eddyCurrentBrakingConditionsDocument (1.1.1.1.6.4): The track has an eddy current braking conditions document value that must be a Document.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.4.5

Additional Information

General explanation:
If there exist conditions to allow the use of eddy current brakes.

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Document with the conditions for the use of magnetic brakes OP

Electronic document available in two EU languages from the IM stored by the Agency with conditions for the use of magnetic brakes identified in 1.1.1.1.6.3.

IRI: *http://data.europa.eu/949/magneticBrakingConditionsDocument*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.6.5

XML Name:
ILR_MBDocRef

Deadline:
16 January 2020

Belongs to parameters group
Track resistance to applied loads (1.1.1.1.6)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Mandatory value to be provided when 1.1.1.1.6.3 / Use of magnetic brakes is 'allowed under conditions' or 'allowed under conditions only for emergency brake'.

Validation Rules:
Magnetic Braking Conditions Document Applicability
Comment: Electronic document available in two EU languages from the IM stored by the Agency with conditions for the use of magnetic brakes identified in 1.1.1.1.6.3.
Message: magneticBrakingConditionsDocument (1.1.1.1.6.5): This error is due to the track {?trackLabel} , violating the rule: Y if the answer to 1.1.1.1.6.3 / Use of magnetic brakes is “allowed under conditions” or “allowed under conditions only for emergency brake”.
Magnetic Braking Conditions Document
Comment: Electronic documents available in two EU languages from the IM stored by the Agency with conditions for the use of magnetic brakes identified in 1.1.1.1.6.3.
Message: magneticBrakingConditionsDocument (1.1.1.1.6.5): The track has a magnetic braking conditions document value that must be a Document.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.4.6

Additional Information

General explanation:

If there exist conditions to allow the use of magnetic brakes.

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Health, safety and environment DP OP

General Information

Number:
1.1.1.1.7

Belongs to parameters group
Infrastructure subsystem (1.1.1.1)

Related parameters
Use of flange lubrication forbidden (1.1.1.1.7.1)
Existence of level crossings (1.1.1.1.7.2)
Acceleration allowed near level crossing (1.1.1.1.7.3)
Existence of trackside hot axle box detector (HABD) (1.1.1.1.7.4)
Trackside HABD TSI compliant (1.1.1.1.7.5)
Identification of trackside HABD (1.1.1.1.7.6)
Generation of trackside HABD (1.1.1.1.7.7)
Railway location of trackside HABD (1.1.1.1.7.8)
Direction of measurement of trackside HABD (1.1.1.1.7.9)
Steady red lights required (1.1.1.1.7.10)
Belonging to a quieter route (1.1.1.1.7.11)
Conditions for use of reflective plates (1.1.1.1.7.12.1)

Use of flange lubrication forbidden DP

Indication whether the use of on-board device for flange lubrication is forbidden.

IRI: *http://data.europa.eu/949/flangeLubeForbidden*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.7.1

XML Name:
IHS_FlangeLubeForbidden

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Boolean

Format:
in XML: Y/N

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Flange Lube Forbidden
Comment: Indication whether the use of on-board device for flange lubrication is forbidden.
Message: flangeLubeForbidden (1.1.1.1.7.1): The track must have at most one flange lube forbidden value that is Y/N (boolean). This error may be due to having more than one value or having a value that is not Y/N (boolean).

OPE TSI References

Part of RCC Algorithm:
true

Existence of level crossings DP

Indication whether level crossings (including pedestrian track crossing) exist on the section of line.

IRI: *http://data.europa.eu/949/hasLevelCrossings*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.7.2

XML Name:
IHS_LevelCrossing

Deadline:

In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Boolean

Format:
in XML: Y/N

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Level Crossings
Comment: Indication whether level crossings (including pedestrian track crossing) exist onf the section line.
Message: hasLevelCrossings (1.1.1.1.7.2): The track must have at most one existence of level crossings value that is Y/N (boolean). This error may be due to having more than one value or having a value that is not Y/N (boolean).

Additional Information

General explanation:
This parameter concerns the level crossing of the railway with a road or a street. Provision the correct location of the level crossing(s) is not required, but RINF data model allows providing such information on a voluntary basis, and it can be a geographical information and/or a reference to a line referencing system.

Acceleration allowed near level crossing OP

Existence of limit for acceleration of train if stopping or recovering speed close to a level crossing expressed in a specific reference acceleration curve.

IRI: *http://data.europa.eu/949/accelerationLevelCrossing*

Parameter of
Subset with common characteristics
Track

General Information

Number:
1.1.1.1.7.3

XML Name:
IHS_AccelerationLevelCrossing

Deadline:

In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory value when the level crossing is defined

Validation Rules:
Acceleration Level Crossing Applicability
Comment: Existence of limit for acceleration of train if stopping or recovering speed close to a level crossing expressed in a specific reference acceleration curve.
Message: accelerationLevelCrossing (1.1.1.1.7.3): This error is due to the track {? trackLabel} , violating the rule: Applicable only when selected value of parameter 1.1.1.1.7.2 is 'Y'
Acceleration Level Crossing
Comment: Existence of limit for acceleration of train if stopping or recovering speed close to a level crossing expressed in a specific reference acceleration curve.
Message: accelerationLevelCrossing (1.1.1.1.7.3): The track must have at most one acceleration level crossing value that is a Document. This error may be due to having more than one value or having a value that is not an instance of Document.

Additional Information

General explanation:
The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Existence of trackside hot axle box detector (HABD) DP

Existence of trackside HABD

IRI: *http://data.europa.eu/949/hasHotAxleBoxDetector*

Parameter of
Running track

Subset with common characteristics

General Information

Number:
1.1.1.1.7.4

XML Name:
IHS_HABDExist

Deadline:
16 January 2020

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Boolean

Format:
in XML: Y/N

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Hot Axle Box Detector
Comment: Existence of trackside hot axle box detector.
Message: hasHotAxleBoxDetector (1.1.1.1.7.4): The track must have at most one existence of hot axle box detector value that is Y/N (boolean).

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The aim of axle bearing condition monitoring is to detect deficient axle box bearings. The TSI Loc&Pas provides with the requirement that units of maximum design speed higher than or equal to 250 km/h, on board detection equipment shall be provided. For units of maximum design speed lower than 250 km/h, and designed to be operated on others track gauge systems than the 1 520 mm system, axle bearing condition monitoring shall be provided and be achieved either by on board equipment or by using track side equipment. Track side equipment (also known as HABD) are defined from the perspective of rolling stock, for which the zone visible to the trackside equipment is defined by the area referred in the standard EN 15437-1:2009, as required by the TSI Loc&Pas.
This parameter is to indicate whether the section of line is equipped with trackside hot axle box detector (HABD) and is necessary for the route compatibility check.

See also:
TSI Loc&Pas: 4.2.10.2.3, 4.2.3.3.2
WAG TSI: 4.2.3.4
EN 15437-1:2009

Trackside HABD TSI compliant DP

Specific for the French, Italian and Swedish networks.
Trackside HABD compliant to TSI means that the HABD Trackside is compliant with:
- EN 15437-1:2009 referred in TSIs (LOC&PAS: 4.2.3.3.2.2, WAG TSI: 4.2.3.4),
- Specific cases mentioned in TSIs (LOC&PAS TSI, WAG TSI).

IRI: *http://data.europa.eu/949/hotAxleBoxDetectorTSICompliant*

Parameter of

Hot Axle Box Detector

General Information

Number:
1.1.1.1.7.5

XML Name:
IHS_TSIHABD

Deadline:
16 January 2020

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Hot Axle Box Detector Tsicompliant Country Applicability

Message: hotAxleBoxDetectorTSICompliant: This property may only be used for HotAxleBoxDetectors located in France, Sweden, or Italy.
Hot Axle Box Detector Tsicompliant
Comment: Trackside HABD compilant to TSI means that the HABD is compliant with EN 15437:2009 and specific cases mentioned in TSIs.
Message: hotAxleBoxDetectorTSICompliant (1.1.1.1.7.5): The HABD must have at most one value that defines if the hot axle box detector is TSI compliant and the value is Y/N (boolean). This error may be due to having more than one value or having a value that is not Y/N (boolean).

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

See also:
TSI LOC&PAS: 4.2.3.3.2.2, and 7.3.2.3
WAG TSI: 4.2.3.4 and 7.3.2.2
EN 15437-1:2009

Identification of trackside HABD DP

Specific for the French, Italian and Swedish networks.
Applicable if trackside HABD is not TSI compliant, identification of trackside hot axle box detector.

IRI: *http://data.europa.eu/949/hotAxleBoxDetectorIdentification*

Parameter of
Hot Axle Box Detector

General Information

Number:
1.1.1.1.7.6

XML Name:
IHS_HABDID

Deadline:
16 January 2020

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)
Identifier

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory if the HABD is not TSI compliant (the value of parameter 1.1.1.1.7.5 (Trackside HABD TSI compliant) is 'False')

Validation Rules:
Hot Axle Box Detector Identification Country Applicability

Message: hotAxleBoxDetectorIdentification: This property may only be used for HotAxleBoxDetectors located in France, Sweden, or Italy.

Hot Axle Box Detector Identification Applicability
Comment: Specific for the French Italian and Swedish networks. Applicable if trackside HABD is not TSI compliant, identification of trackside hot axle box detector.@en
Message: hotAxleBoxDetectorIdentification (1.1.1.1.7.6): This error is due to HABD {?label}, violating the rule: “Y” if the answer to parameter 1.1.1.1.7.5 is “N”
Hot Axle Box Detector Identification
Comment: Specific for the French, Italian and Swedish networks. Applicable if trackside HABD is not TSI compliant. Identification of the trackside HABD.
Message: hotAxleBoxDetectorIdentification (1.1.1.1.7.6): The HABD must have at most one value that defines the identification of the hot axle box detector and the value is a character string. This error may be due to having more than one value or having a value that is not a string.

OPE TSI References

Part of RCC Algorithm:
true

Generation of trackside HABD DP

Specific for the French Italian and Swedish networks.
Generation of trackside hot axle box detector.

IRI: *http://data.europa.eu/949/hotAxleBoxDetectorGeneration*

Parameter of

Hot Axle Box Detector

General Information

Number:
1.1.1.1.7.7

XML Name:
IHS_HABDGen

Deadline:
16 January 2020

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:

Mandatory if the HABD is not TSI compliant (the value of parameter 1.1.1.1.7.5 (Trackside HABD TSI compliant) is 'False')

Validation Rules:

Hot Axle Box Detector Generation Applicability
Comment: Specific for the French Italian and Swedish networks. Generation of trackside hot axle box detector. "Y" if the answer to parameter 1.1.1.1.7.5 is "N"
Message: hotAxleBoxDetectorGeneration (1.1.1.1.7.7): This error is due to HABD {? label}, violating the rule: "Y" if the answer to parameter 1.1.1.1.7.5 is "N"
Hot Axle Box Detector Generation
Comment: Applicable if trackside HABD is not TSI compliant. Generation of the trackside HABD.
Message: hotAxleBoxDetectorGeneration (1.1.1.1.7.7): The HABD must have at most one generation of the hot axle box detector value that is a string of characters. This error may be due to having more than one value or having a value that is not a string.
Hot Axle Box Detector Generation Country Applicability

Message: hotAxleBoxDetectorGeneration: This property may only be used for HotAxleBoxDetectors located in France, Sweden, or Italy.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Waiting provision of possible answers by the French, Italian and Swedish NREs

Railway location of trackside HABD DP

Specific for the French Italian and Swedish networks.
Applicable if trackside HABD is not TSI compliant, localisation of trackside hot axle box detector.

IRI: *http://data.europa.eu/949/hotAxleBoxDetectorLocation*

Parameter of

Hot Axle Box Detector

General Information

Number:
1.1.1.1.7.8

XML Name:
IHS_HABDLoc

Deadline:
16 January 2020

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Double

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Mandatory if the HABD is not TSI compliant (the value of parameter 1.1.1.1.7.5 (Trackside HABD TSI compliant) is 'False')

Validation Rules:
Hot Axle Box Detector Location Applicability
Comment: Specific for the French Italian and Swedish networks. Applicable if trackside HABD is not TSI compliant, localisation of trackside hot axle box detector.
Message: hotAxleBoxDetectorLocation (1.1.1.1.7.8): This error is due to the HABD {?label}, violating the rule: “Y” if the answer to parameter 1.1.1.1.7.5 is “N”
Hot Axle Box Detector Location Country Applicability

Message: hotAxleBoxDetectorLocation: This property may only be used for HotAxleBoxDetectors located in France, Sweden, or Italy.
Hot Axle Box Detector Location
Comment: Applicable if trackside HABD is not TSI compliant. Location of the trackside HABD.
Message: hotAxleBoxDetectorLocation (1.1.1.1.7.8): The HABD has a location of the hot axle box detector(s) value that must be a double (real) number with format [±NNNN.NNN]. This error may be due to having a value that is not a double (real) number or does not follow the pattern [±NNNN.NNN].

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The location (generally the distance from the origin of the line to the point of interest) on a line is given in kilometres with decimals (precision of 0.001).

It may be also possible to provide the location of the HABD as an era:netReference property for the HABD pointing to an era:NetPointReference with (at least)era:LinearPositioningSystemCoordinate

Direction of measurement of trackside HABD OP

Direction of measurement of trackside HABD, specific for the French Italian and Swedish networks.

IRI: *http://data.europa.eu/949/hotAxleBoxDetectorDirection*

Parameter of
Hot Axle Box Detector

General Information

Number:
1.1.1.1.7.9

XML Name:

IHS_HABDDirection

Deadline:
16 January 2020

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Hot Axle Box Detector Directions

Values :

Code	Value
10	N
20	O
30	B

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory if the HABD is not TSI compliant (the value of parameter 1.1.1.1.7.5 (Trackside HABD TSI compliant) is 'False')

Validation Rules:
Hot Axle Box Detector Direction Applicability
Comment: Specific for the French Italian and Swedish networks. If the direction of measurement is: - the same as the direction defined by the start and end of the SoL: (N); - the opposite to the direction defined by the start and end of the SoL: (O); - both directions: (B). "Y" if the answer to parameter 1.1.1.1.7.5 is "N".
Message: hotAxleBoxDetectorDirection (1.1.1.1.7.9): This error is due to HABD {?label}, violating the rule: "Y" if the answer to parameter 1.1.1.1.7.5 is "N"
Hot Axle Box Detector Direction
Comment: Direction of measurement of the trackside HABD.
Message: hotAxleBoxDetectorDirection (1.1.1.1.7.9): The HABD must have at most one direction of measurement of the hot axle box detector value that is an IRI. This error may be due to HABD having more than one value of hot axle box detector direction, or having a value that is not an IRI.
Hot Axle Box Detector Direction Country Applicability

Message: hotAxleBoxDetectorDirection: This property may only be used for HotAxleBoxDetectors located in France, Sweden, or Italy.
Hot Axle Box Detector Direction Skos
Comment: Direction of measurement of the trackside HABD.
Message: Indication of the hotAxleBoxDetectorDirection (1.1.1.1.7.9):): The HABD {$this} has a value {?concept} through the era:hotAxleBoxDetectorDirection property that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/hot-axle-box-detector-direction/HotAxleBoxDetectorDirections.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Specific for the French Italian and Swedish networks.
Applicable if trackside HABD is not TSI compliant, direction of measurement of trackside hot axle box detector.
If the direction of measurement is:
- the same as the direction defined by the start and end of the SoL: (N)
- the opposite to the direction defined by the start and end of the SoL: (O)
- both directions: (B)

Steady red lights required DP

Sections where two steady red lights are required in accordance with TSI OPE

IRI: *http://data.europa.eu/949/redLightsRequired*

Also Known As:
Permissive driving allowed

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.7.10

XML Name:
IHS_RedLights

Deadline:
1 January 2021

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Boolean

Format:
in XML: Y/N

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:

Red Lights Required
Comment: Sections where two steady red lights are required in accordance with Implementing Regulations (EU) 2019/773.
Message: redLightsRequired (1.1.1.1.7.10): The track must have at most one value that defines if two steady red lights are required and the value must be Y/N (boolean). This error may be due to having more than one value or having a value that is not Y/N (boolean).
Red Lights Required Country Applicability

Message: redLightsRequired: This property may only be used for RunningTracks located in Belgium, France, Italy, Portugal, or Spain. This error may be due to applying it to a country other that these, or not having an inCountry annotation in the parent element of the RunningTrack.

Additional Information

General explanation:

From Regulation (EU) 2019/773 (TSI OPE) on tail marking in normal operation: this parameter is only for
- freight trains during the transition phase until 31st December 2025 and
- specific cases of Belgium, France, Italy, Portugal, and Spain who may continue to apply notified national rules that require freight trains to be equipped with 2 steady red lights as a condition to run on sections of their network, where this is justified by operating practices already in place and/or national rules notified before end of January 2019.

Cooperation with neighbouring countries:
In the meantime Member States concerned, in particular at the request of the railway undertakings, shall perform an assessment with a view to accept the use of 2 reflective plates in one or more sections of their network if the result of the assessment is positive and define appropriate conditions, which shall be based upon an assessment of the risks and operational requirements. This assessment shall be completed within a maximum period of 6 months after receiving the railway undertaking's request. The acceptance of reflective plates shall be granted, unless the Member State can duly justify the refusal based on the negative result of the assessment.
Member States shall in particular endeavour to permit the use of reflective plates on rail freight corridors, with a view to prioritise the current bottlenecks. These sections and details of any conditions pertaining to them shall be recorded in the RINF. Until the information is encoded in RINF, the infrastructure manager shall ensure the information is communicated to railway undertakings by other appropriate means. The infrastructure manager shall identify the sections of lines on which 2 steady red lights are required in the RINF.

See also:

art 4.2.2.1.3.2. of Implementing Regulation (EU) 2019/773 'Freight trains'

References:

http://data.europa.eu/eli/reg_impl/2019/773/2025-03-31

Belonging to a quieter route DP

Belonging to a 'quieter route' in accordance with Article 5b of TSI NOI.

IRI: *http://data.europa.eu/949/isQuietRoute*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.7.11

XML Name:
IHS_QuietRoute

Deadline:
1 January 2021

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Boolean

Format:
in XML: Y/N

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Is Quiet Route
Comment: Belonging to a 'quiet route' in accordance with Article 5b of Regulation (EU) 1304/2014.
Message: isQuietRoute (1.1.1.1.7.11): The track must have at most one value that defines if it belongs to a 'quiet route' and the value must be Y/N (boolean). This error may be due to having more than one value or having a value that is not Y/N (boolean).

Additional Information

General explanation:
Art 5B: A quieter route means a part of the railway infrastructure with a minimum length of 20 km on which the average number of daily operated freight trains during the night-time as defined in national legislation transposing Directive 2002/49/EC of the European Parliament and of the Council (5) was higher than 12. The freight traffic in the years 2015, 2016 and 2017 shall be the basis for the calculation of that average number. In case the freight traffic due to exceptional circumstances diverges in a given year from that average number by more than 25 %, the Member State concerned can calculate the average number on the basis of the remaining two years.
Art 5.C 1: Member States shall designate quieter routes in accordance with Article 5b and the procedure set out in Appendix D.1 of the Annex. They shall provide the European Union Agency for Railways (the Agency) with a list of quieter routes six months after the date of publication of this Regulation at the latest. The Agency shall publish those lists on its website.

See also:
Art 5b of Regulation (EU) 1304/2014 (amended by Regulation (EU) 2019/774) of 16 May 2019

Conditions for use of reflective plates OP

Details of any conditions for using the reflective plates on freight corridors. Specific case for Portugal and Spain until 1.1.2025 and Belgium and France until 1.1.2026.

IRI: *http://data.europa.eu/949/conditionsUseReflectivePlates*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.7.12.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Conditions for use of reflective plates

Values :

Code	Value
00	Not applicable

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
A value is mandatory if the value of parameter "Permit of use of reflective plates" is boolean "Yes"

Validation Rules:
Conditions Use Reflective Plates
Comment: Details of any conditions for using the reflective plates on freight corridors. Specific case for Portugal and Spain until 1.1.2025 and Belgium and France until 1.1.2026.
Message: conditionsUseReflectivePlates (1.1.1.1.7.12.1): The track may have a value of the conditions for use of reflective plates. This error may be due to the track having a value that is not an IRI.
Conditions Use Reflective Plates Skos
Comment: Details of any conditions for using the reflective plates on freight corridors. Specific case for Portugal and Spain until 1.1.2025 and Belgium and France until 1.1.2026.
Message: Indication of the conditionsUseReflectivePlates (1.1.1.1.7.12.1): The track {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/conditions-use-reflective-plates/ConditionsUseReflectivePlates.

Additional Information

General explanation:

From TSI OPE: Member States shall in particular endeavour to permit the use of reflective plates on rail freight corridors, with a view to prioritise the current bottlenecks. These sections and details of any conditions pertaining to them shall be recorded in the RINF. Until the information is encoded in RINF, the infrastructure manager shall ensure the information is communicated to railway undertakings by other appropriate means. The infrastructure manager shall identify the sections of lines on which 2 steady red lights are required in the RINF.

See also:

4.2.2.1.3.2 of TSI OPE (Commission Implementing Regulation (EU) 2019/773 of 16 May 2019)

Tunnel DP OP

General Information

Number:

1.1.1.1.8
1.2.1.0.5
1.2.2.0.5

Belongs to parameters group

Infrastructure subsystem (1.1.1.1)

Related parameters

Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
Tunnel identification (1.1.1.1.8.2 | 1.2.1.0.5.2 | 1.2.2.0.5.2)
Start of tunnel kilometer (1.1.1.1.8.3)
Start of tunnel location (1.1.1.1.8.3)
End of tunnel (1.1.1.1.8.4)
End of tunnel kilometer (1.1.1.1.8.4)
EC declaration of verification relating to compliance with the requirements from TSIs applicable to railway tunnel (1.1.1.1.8.5 | 1.2.1.0.5.3 | 1.2.2.0.5.3)
EI declaration of demonstration (as defined in Recommendation 2014/881/EU) relating to compliance with the requirements from TSIs applicable to railway tunnel (1.1.1.1.8.6 | 1.2.1.0.5.4 | 1.2.2.0.5.4)
Length of tunnel (1.1.1.1.8.7 | 1.2.1.0.5.5 | 1.2.2.0.5.5)
Cross section area (1.1.1.1.8.8)
Compliance of the tunnel with TSI INF (1.1.1.1.8.8.1)
Document available from the IM with precise description of the tunnel (1.1.1.1.8.8.2)
Existence of emergency plan (1.1.1.1.8.9 | 1.2.1.0.5.6 | 1.2.2.0.5.6)
Fire category of rolling stock required (1.1.1.1.8.10 | 1.2.1.0.5.7 | 1.2.2.0.5.7)
National fire category of rolling stock required (1.1.1.1.8.11 | 1.2.1.0.5.8 | 1.2.2.0.5.8)
Existence of walkways (1.1.1.1.8.12 | 1.2.1.0.5.10 | 1.2.2.0.5.9)
Existence of evacuation and rescue points (1.1.1.1.8.13 | 1.2.1.0.5.11 | 1.2.2.0.5.10)
Kilometer number (1.2.0.0.0.6)
Diesel or other thermal traction allowed (1.2.1.0.5.9)

Tunnel identification DP

Unique tunnel identification or unique tunnel number within Member State

IRI: *http://data.europa.eu/949/tunnelIdentification*

Parameter of

Tunnel

General Information

Number:

1.1.1.1.8.2
1.2.1.0.5.2
1.2.2.0.5.2

XML Name:

SOLTunnelIdentification
OPTrackTunnelIdentification
OPSidingTunnelIdentification

Deadline:

In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group

Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)
Identifier

Data Format

Data Presentation

String

Flags

Applicability Flags:

Y

Has Characteristics:

Functional property (unique value)

Validation

Validation Rules:

Tunnel Identification
Comment: Unique tunnel identification or unique number within Member State.
Message: tunnelIdentification (1.1.1.1.8.2, 1.2.1.0.5.2, 1.2.2.0.5.2): Each Tunnel can be referred with only one identification. This error may be due to having a Tunnel with no identification, with more than one identification or with an identification that is not a character string.

OPE TSI References

Appendix D2 Index

3.2.3

Additional Information

General explanation:

Here should be given the name, number, code or any other expression which is normally used for the identification of the tunnel other than mentioned in parameters 1.1.1.1.8.3 1.1.1.1.8.4. In case when tunnel does not have its own identification within the Member State, the IM should deliver it himself

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Start of tunnel kilometer OP

Part of the Start of tunnel that indicates the km of the line at the beginning of a tunnel.

The Start of tunnel is the Geographical coordinates in decimal degrees and km of the line at the beginning of a tunnel.

IRI: *http://data.europa.eu/949/lineReferenceTunnelStart*

Parameter of
Tunnel

General Information

Number:
1.1.1.1.8.3

XML Name:
SOLTunnelStart

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
Net Point Reference

Flags

Applicability Flags:
Y

Validation

Validation Rules:
Line Reference Tunnel Start
Comment: Part of the Start of tunnel that indicates the km of the line at the beginning of a tunnel.
Message: lineReferenceTunnelStart (1.1.1.1.8.3): A Tunnel may have a start of tunnel location (lineReferenceTunnelStart). This error may be due to a value that is not an IRI, more than one value being provided, or a value that is not a NetPointReference.

Additional Information

General explanation:

Geographical coordinates according to the standard World Geodetic System (WGS). Precision for both geographical latitude and geographical longitude is assumed as [NN.NNNNNNN] in degrees with decimals what gives discretion of 10 cm in the network.
Kilometre shall concern the national line identification given in 1.1.0.0.0.2
Location of the point which is assumed to be the beginning of the tunnel it is the point on the track centre line where is laid the vertical shadow of the extreme part of the tunnel s portal.

Example:

```
Kilometer=`0.895`
```

Start of tunnel location OP

Part of the Start of tunnel that indicates the Geographical coordinates according to the standard World Geodetic System (WGS). Precision for both geographical latitude and geographical longitude is assumed as [NN.NNNNNNN] in degrees with decimals what gives discretion of 10 cm in the network.
The Start of tunnel is the Geographical coordinates in decimal degrees and km of the line at the beginning of a tunnel.

IRI: *http://data.europa.eu/949/startLocation*

Parameter of

Tunnel

General Information

Number:
1.1.1.1.8.3

XML Name:
SOLTunnelStart

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
HasGeometry (1.1.0.0.1.1 | 1.1.1.0.1.1 | 1.1.1.3.14.6 | 1.2.0.0.0.5 | 1.2.1.0.8.5)
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
Point

Flags

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:

Start Location
Comment: Part of the Start of tunnel that indicates the Geographical coordinates according to the standard World Geodetic System (WGS).
Message: startLocation (1.1.1.1.8.3): The Tunnel may have a start location (startLocation) reference that is a Geometry object or a Point. This error mey be due to a startLocation relationship from a Tunnel that is not a Geometry nor a Point.

End of tunnel OP

Geographical coordinates in decimal degrees and km of the line at the end of a tunnel.

IRI: *http://data.europa.eu/949/endLocation*

Parameter of

Tunnel

General Information

Number:
1.1.1.1.8.4

XML Name:
SOLTunnelEnd

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
HasGeometry (1.1.0.0.1.1 | 1.1.1.0.1.1 | 1.1.1.3.14.6 | 1.2.0.0.0.5 | 1.2.1.0.8.5)
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
Point

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
End Location
Comment: Geographical coordinates in decimal degrees and km of the line at the end of a tunnel.
Message: endLocation (1.1.1.1.8.4): The Tunnel may have an end location (endLocation) reference that is a Geometry object or a Point. This error mey be due to an endLocation relationship from a Tunnel that is not a Geometry nor a Point.

Additional Information

General explanation:

Geographical coordinates according to the standard World Geodetic System (WGS). Precision for both geographical latitude and geographical longitude is assumed as [NN.NNNNNNN] in degrees with decimals what gives discretion of 10 cm in the network.
Kilometre shall concern the national line identification given in 1.1.0.0.0.2
Location of the point which is assumed to be the end of the tunnel it is the point on the track centre line where is laid the vertical shadow of the extreme part of the tunnel s portal.

Example:

```
Latitude=`51.5479123` Longitude=`-0.076732`
```

End of tunnel kilometer OP

Part of the End of tunnel that indicates the km of the line at the end of a tunnel.

The End of tunnel is the Geographical coordinates in decimal degrees and km of the line at the end of a tunnel.

IRI: *http://data.europa.eu/949/lineReferenceTunnelEnd*

Parameter of

Tunnel

General Information

Number:
1.1.1.1.8.4

XML Name:
SOLTunnelEnd

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
Net Point Reference

Flags

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:

Line Reference Tunnel End
Comment: Part of the End of tunnel that indicates the km of the line at the end of a tunnel.
Message: lineReferenceTunnelEnd (1.1.1.1.8.4): A Tunnel may have an end of tunnel location (lineReferenceTunnelEnd). This error may be due to a value that is not an IRI, more than one value being provided, or a value that is not a NetPointReference.

Additional Information

General explanation:
Parameters of this group (from 1.1.1.1.8.1 to 1.1.1.1.8.13) are only applicable if tunnels exist on the SoL

Example:

```
Kilometer=`0.270`
```

EC declaration of verification relating to compliance with the requirements from TSIs applicable to railway tunnel DP

Unique number for EC declarations in accordance with Commission Implementing Regulation (EU) 2019/250.

IRI: *http://data.europa.eu/949/verificationSRT*

Parameter of

Subset with common characteristics
Tunnel

General Information

Number:
1.1.1.1.8.5
1.2.1.0.5.3
1.2.2.0.5.3

XML Name:
ITU_ECVerification

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
String

Format:
CC/RRRRRRRRRRRRR/YYYY/NNNNNN

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Verification Srt
Comment: Unique number for EC declarations following format requirements specified in the 'Document about practical arrangements for transmitting interoperability documents'
Message: verificationSRT (1.1.1.1.8.5, 1.2.1.0.5.3, 1.2.2.0.5.3): Each Tunnel may have one or more verificationSRT following this pattern country code/national registration number/year between 1900 and 2100/progressive counter. This error may be due to having a value that does not follow the pattern or that is not a character string.

Additional Information

General explanation:
(SRT) in title means that here we include only declarations concerning requirements of SRT TSI for infrastructure system on the specific track.
Parameter shall be repeated when different EC declarations were issued for different elements of infrastructure subsystem on the specific track in the tunnel.
With the extension of scope according to Interoperability Directive 2016/797, geographical scope of the INF, ENE and CCS TSIs now includes all the networks (TEN and off-TEN) with the following nominal track gauges: 1435, 1520, 1524, 1600 and 1668 mm

See also:
Document about practical arrangements for transmitting interoperability documents ERA/INF/10-2009/INT

References:
http://data.europa.eu/eli/reg/2014/1303/2024-01-29

EI declaration of demonstration (as defined in Recommendation 2014/881/EU) relating to compliance with the requirements from TSIs applicable to railway tunnel DP

Unique number for EI declarations following the same format requirements as specified for EC declarations in Annex VII of Commission Implementing Regulation (EU) 2019/250.

IRI: *http://data.europa.eu/949/demonstrationSRT*

Parameter of

Subset with common characteristics
Tunnel

General Information

Number:
1.1.1.1.8.6
1.2.1.0.5.4
1.2.2.0.5.4

XML Name:

ITU_EIDemonstration

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
String

Format:
CC/RRRRRRRRRRRRR/YYYY/NNNNNN

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Applicable in case when the demonstration was executed and EI declaration was issued.

The procedure for demonstration that existing network fits to requirements of the TSIs is executed on voluntary bases, so when EI declaration do not exist then the parameter is optional.

Validation Rules:
Demonstration Srt
Comment: Unique number for EI declarations following the same format requirements as specified in the 'Document about practical arrangements for transmitting interoperability documents'
Message: demonstrationSRT (1.1.1.1.8.6, 1.2.1.0.5.4, 1.2.2.0.5.4): Each Tunnel may have one or more demonstrationSRT following this pattern country code/national registration number/year between 1900 and 2100/progressive counter. This error may be due to having a value that does not follow the pattern or that is not a character string.

Additional Information

General explanation:
(SRT) in title means that here we include only declarations concerning requirements of SRT TSI for infrastructure system on the specific track.
Parameter shall be repeated when different EI declarations were issued for different elements of infrastructure subsystem on the specific track in the tunnel.
It may happen that several EI declarations were issued then parameter has to be repeated as many times as many declarations were issued.
The procedure for demonstration that existing network fits to requirements of the TSIs is executed on voluntary bases, so when EI declaration do not exist then the parameter is optional.

See also:
Recommendation 2014/881/EU

References:
http://data.europa.eu/eli/reco/2014/881/oj
http://data.europa.eu/eli/reg/2014/1303/2024-01-29

Length of tunnel DP

Length of a tunnel in metres from entrance portal to exit portal.

IRI: *http://data.europa.eu/949/lengthOfTunnel*

Parameter of

Tunnel

General Information

Number:
1.1.1.1.8.7
1.2.1.0.5.5
1.2.2.0.5.5

XML Name:
ITU_Length

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)
Length

Data Format

Data Presentation
Double

Format:
NNNNN

Unit of Measure:
Metre

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Only applicable for a tunnel with length of 100 metres or more.

Validation Rules:
Length Of Tunnel
Comment: Length of a tunnel in metres from entrance portal to exit portal.
Message: length (1.1.1.1.8.7, 1.2.1.0.5.5, 1.2.2.0.5.5): A Tunnel must have at most one length declaration. This error may be due to having a tunnel with more than one length or to having a value that is not a double (real) number.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index

3.2.3

Additional Information

General explanation:
Length of a tunnel is expressed in metres from portal to portal at the level of the top of rail.

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Cross section area DP

Smallest cross section area in square metres of the tunnel

IRI: *http://data.europa.eu/949/crossSectionArea*

Parameter of

Subset with common characteristics
Tunnel

General Information

Number:
1.1.1.1.8.8

XML Name:
ITU_CrossSectionArea

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
Integer

Format:
NNN

Unit of Measure:
Square metre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory if the speed of the line is equal or greater than 200km/h

Validation Rules:

Cross Section Area T
Comment: Smallest cross section area in square metres of the tunnel.
Message: crossSectionArea (1.1.1.1.8.8): A Tunnel can have at most one crossSectionArea. This error may be due to having a tunnel with more than one crossSectionArea or having a value that is not an integer number.
Cross Section Area Applicability
Comment: Y (applicable) if is speed of the line equal or greater than 200km/h.
Message: crossSectionArea (1.1.1.1.8.8): The Tunnel {$this} ({?label}) has a maximum permitted speed of {?tunnelSpeed} Km/h . For any tunnel with a speed of the line equal or greater than 200km/h the crossSectionArea parameter is applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
Smallest real cross section area (expressed in square metres) of the tunnel.

Reference: 4.2.10.1 of INF TSI on Maximum pressure variations in tunnels.

See also:
https://eur-lex.europa.eu/eli/reg/2014/1299/2023-09-28#:~:text=4.2.10.1.%C2%A0%C2%A0%C2%A0%20Maximum%20pressure%20variations%20in%20tunnels [4.2.10.1 of INF TSI on Maximum pressure variations in tunnels |

Compliance of the tunnel with TSI INF DP

Compliance of the tunnel with TSI INF at the maximum permitted speed

IRI: *http://data.europa.eu/949/complianceInfTsi*

Parameter of
Subset with common characteristics
Tunnel

General Information

Number:
1.1.1.1.8.8.1

XML Name:
ITU_TSITunnel

Deadline:
1 January 2021

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory if the speed of the line is equal or greater than 200km/h

Validation Rules:
Compliance Inf Tsi P
Comment: Compliance of the tunnel with INF TSI at the maximum permitted speed.
Message: complianceInfTsi (1.1.1.1.8.8.1): A Tunnel can have at most one complianceInfTsi. This error may be due to having a tunnel with more than one complianceInfTsi or having a value type different than Y/N (boolean).
Compliance Inf Tsi Applicability
Comment: Y (applicable) if is speed of the line equal or greater than 200km/h.
Message: complianceInfTsi (1.1.1.1.8.9, 1.2.1.0.5.6, 1.2.2.0.5.6): The Tunnel {$this} ({?label}) has a maximum permitted speed of {?tunnelSpeed} Km/h . For any tunnel with a speed of the line equal or greater than 200km/h the complianceInfTsi parameter is applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

See also:
[4.2.10.1 of INF TSI on Maximum pressure variations in tunnels |]
https://eur-lex.europa.eu/eli/reg/2014/1299/2023-09-28#:~:text=4.2.10.1.%C2%A0%C2%A0%C2%A0%20Maximum%20pressure%20variations%20in%20tunnels

Document available from the IM with precise description of the tunnel OP

Electronic document available from the IM stored by the Agency with precise description of the clearance gauge and geometry of the tunnel.

IRI: *http://data.europa.eu/949/tunnelDocRef*

Parameter of
Tunnel

General Information

Number:
1.1.1.1.8.8.2

XML Name:
ITU_TunnelDocRef

Deadline:
1 January 2021

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:

Tunnel Doc Ref
Comment: Electronic document available from the IM stored by the Agency with precise description of the clearance gauge and geometry of the tunnel
Message: tunnelDocRef (1.1.1.1.8.8.2): A Tunnel has a tunnelDocRef with precise description of the clearance gauge and geometry of the tunnel, and it must be a Document. This error a due to having a value that is not an instance of Document

Additional Information

General explanation:

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Existence of emergency plan DP

Indication whether emergency plan exists.

IRI: *http://data.europa.eu/949/hasEmergencyPlan*

Parameter of

Subset with common characteristics
Tunnel

General Information

Number:

1.1.1.1.8.9
1.2.1.0.5.6
1.2.2.0.5.6

XML Name:

ITU_EmergencyPlan

Deadline:

In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group

Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation

Boolean

Flags

Applicability Flags:

Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory for tunnels longer than 1 km

Validation Rules:
Has Emergency Plan Applicability
Comment: Applicable for tunnels longer than 1 km.
Message: hasEmergencyPlan (1.1.1.1.8.9, 1.2.1.0.5.6, 1.2.2.0.5.6): The Tunnel {$this} ({?label}) has a length of {?tunnelLength} meters. Any tunnel longer than 1 Km makes the hasEmergencyPlan parameter applicable. This error is due to {$this} not having a value for such a parameter.
Has Emergency Plan
Comment: Indication whether emergency plan exists.
Message: hasEmergencyPlan (1.1.1.1.8.9, 1.2.1.0.5.6, 1.2.2.0.5.6): A Tunnel has an indication about the existence of an emergency plan. This error may be due to having a tunnel with more than one value for hasEmergencyPlan or having a value type different than Y/N (boolean).

Additional Information

General explanation:
A value may not be applicable for tunnels shorter than 1 km, as for them the fire category according SRT TSI does not exist.
Emergency plan has to be a document developed for each tunnel under the direction of the IM, in co-operation, where appropriate, with RUs, Rescue services and relevant authorities. It shall be consistent with the self-rescue, evacuation and rescue facilities provided.
It is applicable for tunnels longer than 1 km, in accordance with section 4.4.2 of SRT TSI, the emergency plan is mandatory only for tunnel length of more than 1km.

SRT TSI: 4.4.2
OPE TSI: 4.2.3.7

See also:
SRT TSI: 4.4.2
OPE TSI: 4.2.3.7

References:
http://data.europa.eu/eli/reg/2014/1303/2024-01-29

Fire category of rolling stock required OP

Categorisation how a passenger train with a fire on board will continue to operate for a defined time period

IRI: *http://data.europa.eu/949/rollingStockFireCategory*

Parameter of

Subset with common characteristics
Tunnel

General Information

Number:
1.1.1.1.8.10
1.2.1.0.5.7

1.2.2.0.5.7

XML Name:
ITU_FireCatReq

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Rolling Stock Fire Categories

Values :

Code	Value	Also Known As	Explanation
10	A		Rolling stock which is designed and built to operate on underground sections and tunnels of not more than 5 km in length, with side evacuation available is defined as category A
20	B		Rolling stock which is designed and built to operate in all tunnels of the trans-European Network is defined as category B
30	None	None	None of rolling stock fire categories A or B shall be applied on a tunnel

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory for tunnels longer than 1 km

Validation Rules:
Rolling Stock Fire Category Applicability
Comment: Applicable for tunnels longer than 1 km.
Message: rollingStockFireCategory (1.1.1.1.8.10, 1.2.1.0.5.7, 1.2.2.0.5.7): The Tunnel {$this} ({?label}) has a length of {?tunnelLength} meters. Any tunnel longer than 1 Km makes the rollingStockFireCategory parameter applicable. This error is due to {$this} not having a value for such a parameter.

Rolling Stock Fire Category Skos
Comment: Categorisation on how a passenger train with a fire on board will continue to operate for a defined time period
Message: Categorisation on how a passenger train with a fire on board will continue to operate (1.1.1.1.8.10, 1.2.1.0.5.7, 1.2.2.0.5.7): The tunnel {$this} (label {?tunnelLabel}) has a value {? concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/rolling-stock-fire/Categories.
Rolling Stock Fire Category
Comment: Categorisation on how a passenger train with a fire on board will continue to operate for a defined time period
Message: rollingStockFireCategory (1.1.1.1.8.10, 1.2.1.0.5.7, 1.2.2.0.5.7): A Tunnel may have an indication about the rollingStockFireCategory. This error may be due to having a tunnel without a rollingStockFireCategory declaration or having a literal as value. This error may be due to a tunnel having more than one value or having a value that is not an IRI.

OPE TSI References

Part of RCC Algorithm:
true

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3.2.3

Additional Information

General explanation:
Wherever category B is not needed, generally the category A has to be understood as the default value. None shall be selected when none of A or B fire category is applied for a specific tunnel.
For tunnels shorter than 1km, the fire category according to SRT TSI does not exist.

See also:
SRT TSI: 4.2.3.3.4
LOC&PAS TSI : 4.2.10.4.4

References:
http://data.europa.eu/eli/reg/2014/1302/2023-09-28
http://data.europa.eu/eli/reg_impl/2019/773/oj
http://data.europa.eu/eli/reg/2014/1303/2024-01-29

National fire category of rolling stock required DP

Categorisation of how a passenger train with a fire on board will continue to operate for a defined time period - according to national rules if they exist.

IRI: *http://data.europa.eu/949/nationalRollingStockFireCategory*

Parameter of

Subset with common characteristics
Tunnel

General Information

Number:
1.1.1.1.8.11
1.2.1.0.5.8
1.2.2.0.5.8

XML Name:
ITU_NatFireCatReq

Deadline:

In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory for tunnels without value for 1.1.1.8.10 and where national values exist.

Validation Rules:
National Rolling Stock Fire Category Applicability
Comment: Applicable only for tunnels when for the parameter 1.1.1.1.8.10 the option 'none' was selected and national rules exist.
Message: nationalRollingStockFireCategory (1.1.1.1.8.11, 1.2.1.0.5.8, 1.2.2.0.5.8): The Tunnel {$this} ({?clsLabel}), has a 'rolling stock fire' category that makes the nationalRollingStockFireCategory parameter applicable. This error is due to {$this} not having a value for such a parameter.
National Rolling Stock Fire Category
Comment: Categorisation on how a passenger train with a fire on board will continue to operate for a defined time period - according to national rules if they exist.
Message: nationalRollingStockFireCategory (1.1.1.1.8.11, 1.2.1.0.5.8, 1.2.2.0.5.8): A Tunnel may have an indication about the nationalRollingStockFireCategory. This error may be due to having a tunnel with more than one value or having a value type different than string.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Data shall include both the category and brief name of the document introducing the categorisation.
A value is mandatory only for tunnels when the value of the parameter 1.1.1.1.8.10 is none and national rules exist.
It may be not applicable when respective national rules do not exist

See also:
SRT TSI: 4.2.3.3.4
LOC&PAS TSI : 4.2.10.4.4

References:
http://data.europa.eu/eli/reg/2014/1303/2024-01-29

Existence of walkways DP

Indication of existence of walkways

IRI: *http://data.europa.eu/949/hasWalkway*

Also Known As:
Existence of walkways in tunnel

Parameter of
Subset with common characteristics
Tunnel

General Information

Number:
1.1.1.1.8.12
1.2.1.0.5.10
1.2.2.0.5.9

XML Name:
ITU_Walkways

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
Boolean

Format:
[Y/N]

If =Y then TSI-Compliant OR NON-TSI-Compliant

Flags

Applicability Flags:
Y/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory for TSI-compliant tunnels longer than 0.5 km

Validation Rules:
Has Walkway
Comment: Indication of existence of walkways.
Message: hasWalkway (1.1.1.1.8.12, 1.2.1.0.5.10, 1.2.2.0.5.9): A Tunnel can have at most one hasWalkway. This error may be due to having a tunnel with more than one hasWalkway or having a value type different than Y/N (boolean).

OPE TSI References

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3.2.3

Additional Information

General explanation:

Indicates the existence of "Escape walkways", if the tunnel is longer than 0.5km then definition from Section 4.2.1.6 of TSI SRT applies.
If the selected value is "true", provide the boolean value for "Is TSI compliant".
On top of the requirements set out in the TSI SRT, the application guide to the TSI allows to use a ballastless track as a walkway. So, a 'Yes' in this parameters might not result in a physical standalone walkway.

For Siding the mechanism to locate a specific object is different depending on the member state. The TWG is still working on it.

See also:

Point 4.2.1.6. "Escape walkways" of the Commission Regulation (EU) No 1303/2014 of 18 November 2014 concerning the technical specification for interoperability relating to safety in railway tunnels of the rail system of the European Union|https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1566396648532&uri=CELEX%3A02014R1303-20190616

References:

http://data.europa.eu/eli/reg_impl/2019/773/oj

Existence of evacuation and rescue points DP

Indication of existence of evacuation and rescue points

IRI: *http://data.europa.eu/949/hasEvacuationAndRescuePoints*

Parameter of

Subset with common characteristics
Tunnel

General Information

Number:

1.1.1.1.8.13
1.2.1.0.5.11
1.2.2.0.5.10

XML Name:

ITU_EvacAndRescuePoints

Deadline:

12 months after publication of Article 7 Guide

Belongs to parameters group

Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation

Boolean

Flags

Applicability Flags:

Y/N/NYA

Has Characteristics:

Functional property (unique value)

Validation

Dependencies:
Mandatory for TSI-compliant tunnels longer than 0.5 km

Validation Rules:
Has Evacuation And Rescue Points
Comment: Indication of existence of evacuation and rescue points.
Message: hasEvacuationAndRescuePoints (1.1.1.1.8.13, 1.2.1.0.5.11, 1.2.2.0.5.10): A Tunnel has an indication about the existence of an evacuation and rescue points. This error may be due to having a tunnel with more than one value for hasEvacuationAndRescuePoints or having a value type different than Y/N (boolean).

OPE TSI References

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3.2.3

Additional Information

See also:
Point 4.2.1.7. "Evacuation and rescue points" of the Commission Regulation (EU) No 1303/2014 of 18 November 2014 concerning the technical specification for interoperability relating to safety in railway tunnels of the rail system of the European Union|https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1566396648532&uri=CELEX%3A02014R1303-20190616

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Energy subsystem DP OP

General Information

Number:
1.1.1.2

Belongs to parameters group
RINF Technical characteristic

Related parameters
Declarations of verification for track (1.1.1.2.1)
Contact line system (1.1.1.2.2)
Pantograph (1.1.1.2.3)
OCL separation sections (1.1.1.2.4)
Requirements for rolling stock (1.1.1.2.5)

Declarations of verification for track DP

General Information

Number:
1.1.1.2.1

Belongs to parameters group
Energy subsystem (1.1.1.2)

Related parameters
EC declaration of verification for track relating to compliance with the requirements from TSIs applicable to energy subsystem (1.1.1.2.1.1)
EI declaration of demonstration (as defined Recommendation 2014/881/EU) for track relating to compliance with the requirements from TSIs applicable to energy subsystem (1.1.1.2.1.2)

EC declaration of verification for track relating to compliance with the requirements from TSIs applicable to energy subsystem DP

Unique number for EC declarations in accordance with Commission Implementing Regulation (EU) 2019/250.

IRI: *http://data.europa.eu/949/verificationENE*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.1.1

XML Name:
EDE_ECVerification

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Declarations of verification for track (1.1.1.2.1)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:

Verification Ene
Comment: Unique number for EC declarations following format requirements specified in the 'Document about practical arrangents for transmitting interoperability documents' .
Message: verificationENE (1.1.1.2.1.1): The track has a number for EC declarations that must follow format CC/XXXXXXXXXXXXX/YYYY/NNNNNN where CC is country code, XXXXX... is a number, YYYY is a year between 1900 and 2100, NNNNNN is the number for the EC declaration. This error may be due to the track having a value that does not follow the pattern.

EI declaration of demonstration (as defined Recommendation 2014/881/EU) for track relating to compliance with the requirements from TSIs applicable to energy subsystem DP

Unique number for EI declarations following the same format requirements as specified for EC declarations in Annex VII of Commission Implementing Regulation (EU) 2019/250.

IRI: *http://data.europa.eu/949/demonstrationENE*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.1.2

XML Name:
EDE_EIDemonstration

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Declarations of verification for track (1.1.1.2.1)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:

Demonstration Ene
Comment: Unique number for EI declarations following the same format requirements as specified in the 'Document about practical arrangents for transmitting interoperability documents'.
Message: demonstrationENE (1.1.1.2.1.2): The track has a number for EI declarations that must follow format CC/XXXXXXXXXXXXXX/YYYY/NNNNNN where CC is country code, XXXXX... is a number, YYYY is a year between 1900 and 2100, NNNNNN is the number for the EI declaration. This error may be due to the track having a value that is not a tring or that does not follow the pattern.

Additional Information

References:
http://data.europa.eu/eli/reco/2014/881/oj

Contact line system DP OP

General Information

Number:
1.1.1.2.2

Belongs to parameters group
Energy subsystem (1.1.1.2)

Related parameters
Type of contact line system (1.1.1.2.2.1.1)
Energy supply system (Voltage and frequency) (1.1.1.2.2.1.2)
Umax2 for the French network (1.1.1.2.2.1.3)
Maximum train current (1.1.1.2.2.2)
Maximum current at standstill per pantograph (1.1.1.2.2.3 | 1.2.2.0.6.1)
Conditions applying in regards to regenerative braking (1.1.1.2.2.4.1)
Maximum contact wire height (1.1.1.2.2.5)
Minimum contact wire height (1.1.1.2.2.6)
Permission for charging electric energy storage for traction purposes at standstill (1.2.1.0.7.1)
Permitted conditions for charging electric energy storage for traction purposes at standstill (1.2.1.0.7.2)

Type of contact line system OP

Indication of the type of the contact line system.

IRI: *http://data.europa.eu/949/contactLineSystemType*

Parameter of
Contact Line System

General Information

Number:
1.1.1.2.2.1.1

XML Name:

ECS_SystemType

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Contact line system (1.1.1.2.2)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Contact Line Systems

Values :

Code	Value
10	Overhead contact line (OCL)
20	Third Rail
30	Fourth Rail
40	Not electrified

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
If this parameter is repeated, parameters 1.1.1.2.2.1.2, and 1.1.1.2.2.2 shall be created also for the corresponding type. These two parameters are to be considered children of the current.

Validation Rules:
Contact Line System Type Third Or Fourth Rail Applicability
Comment: When the value “Third Rail” or “Fourth Rail” is chosen, parameters 1.1.1.2.2.3, 1.1.1.2.2.5 - 1.1.1.2.4.2.3, 1.1.1.2.5.2 and 1.1.1.2.5.3 are not applicable
Message: contactLineSystemType (1.1.1.2.2.1.1): The Contact Line System {$this} ({?clsLabel}), has a 'Third Rail' or 'Fourth Rail' type, and at least one of its parameters has values for at least one of the parameters 1.1.1.2.2.3, 1.1.1.2.2.5 - 1.1.1.2.4.2.3, 1.1.1.2.5.2 and 1.1.1.2.5.3. This happens at least with property {?p} (RINF index {?index}).
Contact Line System Type Not Electrified Applicability
Comment: When the value "not electrified" is chosen, all parameters 1.1.1.2.2.1.2 - 1.1.1.2.5.3 are not applicable
Message: contactLineSystemType (1.1.1.2.2.1.1): The Contact Line System {$this} ({?clsLabel}), has a 'Not electrified' type, and at least one of its parameters has values for at least one of the range of parameters between 1.1.1.2.2.1.2 and 1.1.1.2.5.3. This happens at least with property {?p} (RINF index {?index}).
Contact Line System Type
Comment: Indication of the type of the contact line system
Message: contactLineSystemType (1.1.1.2.2.1.1): The contact line system must have a contact line system type, and its value must be an IRI. This error is due to the contact line system not having a value for this property, having more than one value for this property, or having a value that is not an IRI.

Contact Line System Type Skos
Comment: Indication of the type of the contact line system
Message: contactLineSystemType (1.1.1.2.2.1.1): The contact line system {$this} has a value {? concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/contact-line-systems/ContactLineSystems.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
When the value is "not electrified", then all parameters 1.1.1.2.2.1.2 - 1.1.1.2.5.3 are not applicable.
When the value is “Third Rail” or “Fourth Rail”, then parameters 1.1.1.2.2.3, 1.1.1.2.2.5 - 1.1.1.2.4.2.3, 1.1.1.2.5.2 and 1.1.1.2.5.3 are not applicable

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, if this parameter is repeated, parameters 1.1.1.2.2.1.2, 1.1.1.2.2.2, 1.1.1.2.2.4 and 1.1.1.2.5.1 shall be created also for the corresponding type. These four parameters are to be considered children of the current.
For grouping “children” parameters of the current parameter, an XML attribute called “set” must be declared at the parent and children levels with the same keyword value.

Energy supply system (Voltage and frequency) OP

Indication of the traction supply system (nominal voltage and frequency).

IRI: *http://data.europa.eu/949/energySupplySystem*

Parameter of
Contact Line System
Vehicle Type

General Information

Number:
1.1.1.2.2.1.2

XML Name:
ECS_VoltFreq

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Contact line system (1.1.1.2.2)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
Energy Supply Systems

Values :

Code	Value	Also Known As
AC10	AC 25kV-50Hz	
AC20	AC 15kV-16.7Hz	15kV-16 2/3Hz : 2646 kW , 1kV-16 2/3 Hz or 50 Hz
DC30	DC 3kV	3000V DC, 3kV (PL, CZ, SK)
DC40	DC 1.5kV	1.5kV Specific Case IE, 1.5kV (Specific Case IE), 1500
DC60	DC 750V	DC 750V third rail, Vía Urbana e Interurbana 750 Vdc, 750V, DC750V
DC70	DC 650V	
DC80	DC 600 V	
DC90	DC 850V	

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
When `not electrified` is chosen in parameter 1.1.1.2.2.1.1, then this parameter is not applicable.

Validation Rules:
Energy Supply System
Comment: Indication of the traction supply system
Message: energySupplySystem (1.1.1.2.2.1.2): The contact line system defines the energy supply system.This error is due to a contact line system having more than one value for this property or having a value that is not an IRI.
Energy Supply System Skos
Comment: Indication of the traction supply system
Message: energySupplySystem (1.1.1.2.2.1.2): The contact line system {$this} has a value {? concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/energy-supply-systems/EnergySupplySystems.

OPE TSI References

Part of RCC Algorithm:
true

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3.3.1

Additional Information

General explanation:

If the real values exceed range of the EN 50163:2004+A1:2007+A2:2020+A3:2022, they could be introduced by the Agency on request via a process of change request.
See: ENE TSI: 4.2.3 and EN 50163:2004: clause 4

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, an XML attribute called “Set” will be used to link the value of this parameter to the parameter 1.1.1.2.2.1.1 / ECS_SystemType

See also:
EN 50163:2004+A1:2007+A2:2020+A3:2022: clause 4
ENE TSI:4.2.3
ENE TSI: 4.2.3 and EN 50163:2004: clause 4

References:
http://data.europa.eu/eli/reg/2014/1301/2023-09-28
http://data.europa.eu/eli/reg_impl/2019/773/oj

Umax2 for the French network DP

Highest non-permanent voltage (Umax2) for France on lines not compliant with values defined in the EN50163:2004+A1:2007+A2:2020+A3:2022

IRI: *http://data.europa.eu/949/umax2*

Parameter of
Contact Line System

General Information

Number:
1.1.1.2.2.1.3

XML Name:
ECS_Umax2

Deadline:
16 January 2020

Belongs to parameters group
Contact line system (1.1.1.2.2)

Data Format

Data Presentation
Integer

Unit of Measure:
Volt

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:

When `not electrified` is chosen in parameter 1.1.1.2.2.1.1, then this parameter is not applicable.

Validation Rules:

Umax2
Comment: Umax2 for lines referred to in sections 7.4.2.2.1 and 7.4.2.11.1 of Regulation (EU) 1301/2014
Message: umax2 (1.1.1.2.2.1.3): The contact line system defines the Umax2 . This error is due to having more than one value for this property, having a value that is not an integer, or having an integer that does not follow the pattern [NNNNNN].

OPE TSI References

Part of RCC Algorithm:

true

Additional Information

General explanation:

Specific for the French network. It may concern DC 1.5kV and AC 25kV.

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, an XML attribute called “Set” will be used to link the value of this parameter to the parameter 1.1.1.2.2.1.1 / ECS_SystemType

See also:

ENE TSI: 4.2.4.1

Maximum train current DP

Indication of the maximum allowable train current expressed in amperes.

IRI: *http://data.europa.eu/949/maxTrainCurrent*

Parameter of

Contact Line System

General Information

Number:

1.1.1.2.2.2

XML Name:

ECS_MaxTrainCurrent

Deadline:

In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group

Contact line system (1.1.1.2.2)

Data Format

Data Presentation

Integer

Unit of Measure:

Ampere

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
When `not electrified` is chosen in parameter 1.1.1.2.2.1.1, then this parameter is not applicable.

Validation Rules:
Maximum Train Current
Comment: Indication of the maximum allowable train current
Message: maxTrainCurrent (1.1.1.2.2.2): Defines the maximum allowable train current of the contact line system. This error is due to having more than one value for this property, having a value that is not an integer, or having an integer that does not follow the pattern [NNNN].

OPE TSI References

Appendix D2 Index
3.3.2

Additional Information

General explanation:
For RINF XML data sets:
As long as the data provision through XML data sets is allowed, an XML attribute called "Set" will be used to link the value of this parameter to the parameter 1.1.1.2.2.1.1 / ECS_SystemType

Maximum current at standstill per pantograph DP

Indication of the maximum allowable train current at standstill expressed in amperes.

IRI: *http://data.europa.eu/949/maxCurrentStandstillPantograph*

Parameter of

Contact Line System
Siding
Vehicle type configuration parameter set

General Information

Number:
1.1.1.2.2.3
1.2.2.0.6.1

XML Name:
ECS_MaxStandstillCurrent

Deadline:
In accordance with Implementing Decision 2014/880/EU and
- by 16 March 2019 at the latest for DC systems;
- by 30 June 2024 for AC systems.

Belongs to parameters group

Contact line system (1.1.1.2.2)
Vehicle type technical characteristic

Data Format

Data Presentation
Integer

Unit of Measure:
Ampere

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
This parameter is applicable only the type of contact line system is 'Overhead contact line (OCL)'
In sidings, it may be not applicable, in the following cases:
- siding is not electrified
- Siding is destined to freight traffic, whose trains have a low consumption in stationary (the maximum demand of energy is due to air conditioning systems, which is not significant in these trains).
- Siding is used in access to depots or workshops.
[ERATV] This parameter is applicable only if Overhead contact line (OCL) is selected for parameter 1.1.1.2.2.1.1.

Validation Rules:
Max Current Standstill Pantograph Applicability
Comment: This parameter is applicable (“Y”) only if “Overhead contact line (OCL)” is selected for parameter 1.1.1.2.2.1.1.
Message: maxCurrentStandstillPantograph (1.1.1.2.2.3, 1.2.2.0.6.1):The Contact Line System {$this} ({?clsLabel}), has a 'Overhead contact line (OCL)' type which makes the maxCurrentStandstillPantograph parameter applicable. This error is due to {$this} not having a value for such a parameter.
Max Current Standstill Pantograph
Comment: Indication of the maximum allowable current at standstill per pantograph
Message: maxCurrentStandstillPantograph (1.1.1.2.2.3, 1.2.2.0.6.1): Defines the maximum allowable current at standstill per pantograph for the contact line system. This error is due to having more than one value for this property, having a value that is not an integer, or having an integer that does not follow the pattern [NNN].
Max Current Standstill Pantograph S
Comment: Indication of the maximum allowable train current at standstill for DC systems expressed in amperes
Message: maxCurrentStandstillPantograph (1.1.1.2.2.3, 1.2.2.0.6.1): Each siding may define the maximum allowable train current at standstill for DC systems expressed in amperes. This error is due to having a max current standstill pantograph value that is not a double (real) number.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.3.8

Additional Information

General explanation:

Parameter related to current taken by the vehicle when it is not in a traction or regenerative mode, e.g. preheating, air-condition, etc.
Due to operational reasons, trains can get stuck on SoL for hours, and in some cases, this parameter is even the reason the air-condition is shut down
[ERATV] Parameter related to current taken by the vehicle when it is not in a traction or regenerative mode, e.g. preheating, air-condition, etc.
When used for VehicleType, the parameter must have as range a VehicleTypeConfigParameterSet, of which the VehicleTypeConfiguration at least contains one EnergySystem, from the ones recorded under `era:energySupplySystem`. Further, all of the ENE supply systems mentioned under that parameter
must have a value for this parameter `era:maxCurrentStandstillPantograph`.

See also:
ENE TSI: 4.2.5, LOC&PAS TSI: 4.2.8.2.5

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Permission for regenerative braking OP

Indication whether regenerative braking is permitted, not permitted, or permitted under specific conditions.

IRI: *http://data.europa.eu/949/conditionalRegenerativeBrake*

Parameter of
Contact Line System

General Information

Number:
1.1.1.2.2.4

XML Name:
ECS_RegenerativeBraking

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Track parameters (1.1.1.1.4 | 1.2.1.0.4)
Track resistance to applied loads (1.1.1.1.6)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Regenerative Braking

Values :

Code	Value
10	Allowed
20	Allowed under conditions
30	Allowed only for emergency brake
40	Allowed under conditions only for emergency brake
50	Not allowed

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
When `not electrified` is chosen in parameter 1.1.1.2.2.1.1, then this parameter is not applicable.

Validation Rules:
Conditional Regenerative Brake Skos
Comment: Indication whether regenerative braking is permitted, not permitted, or permitted under specific conditions.
Message: conditionalRegenerativeBrake (1.1.1.2.2.4):): The track {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/regenerative-braking/RegenerativeBraking.
Conditional Regenerative Brake
Comment: Indication whether regenerative braking is permitted, not permitted, or permitted under specific conditions.
Message: conditionalRegenerativeBrake (1.1.1.2.2.4): The track defines if the regenerative brake is permitted. This error is due to having more than one value for this property or having a value that is not an IRI.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.3.7

Additional Information

General explanation:
When regenerative braking is "allowed under conditions", a document must be provided under 1.1.1.2.2.4.1.

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, an XML attribute called “Set” will be used to link the value of this parameter to the parameter 1.1.1.2.2.1.1 / ECS_SystemType

Conditions applying in regards to regenerative braking
OP

Name and/or reference of the document specifying the conditions applying in regards to regenerative braking.

IRI: *http://data.europa.eu/949/conditionsAppliedRegenerativeBraking*

Parameter of
Contact Line System

General Information

Number:
1.1.1.2.2.4.1

XML Name:
ECS_ConditionRegBraking

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Contact line system (1.1.1.2.2)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
When `not electrified` is chosen in parameter 1.1.1.2.2.1.1, then this parameter is not applicable. Mandatory when parameter 1.1.1.2.2.4 announces Conditions.

Validation Rules:
Conditions Applied Regenerative Braking
Comment: Name and/or reference of the document specifying the conditions applying in regards to regenerative braking.
Message: conditionsAppliedRegenerativeBraking (1.1.1.2.2.4.1): The contact line system has a conditionsAppliedRegenerativeBraking reference that must be a Document. This error is due to having more than one value for this property or having a value that is not a Document.
Conditions Applied Regenerative Braking Applicability
Comment: This parameter is applicable ("Y") only if "Overhead contact line (OCL)" is selected for parameter 1.1.1.2.2.1.1 and the regenerative braking status is "under conditions" (20) or "under conditions only for emergency brake" (40).
Message: conditionsAppliedRegenerativeBraking (1.1.1.2.2.4.1):The Contact Line System {$this} ({?clsLabel}), has a 'Overhead contact line (OCL)' type and a conditional regenerative braking status which makes the conditionsAppliedRegenerativeBraking parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Appendix D2 Index
3.3.7

Additional Information

General explanation:
The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj
http://data.europa.eu/eli/reg_impl/2019/777/2023-09-28

Maximum contact wire height DP

Indication of the maximum contact wire height expressed in metres.

IRI: *http://data.europa.eu/949/maximumContactWireHeight*

Parameter of

Contact Line System
Vehicle Type

General Information

Number:
1.1.1.2.2.5

XML Name:
ECS_MaxWireHeight

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Contact line system (1.1.1.2.2)
Vehicle type technical characteristic

Data Format

Data Presentation
Double

Format:
N.NN

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory only if “Overhead contact line (OCL)” is selected in 1.1.1.2.2.1.1, otherwise the parameter is not applicable.

Validation Rules:
Maximum Contact Wire Height
Comment: Indication of the maximum contact wire height expressed in metres
Message: maximumContactWireHeight (1.1.1.2.2.5): The contact line system defines a maximum contact wire height expressed in metres. This error is due to having more than one value for this property, having a value that is not a double (real) number, or having a number that does not follow the pattern [N.NN] (with up to 2 decimals).
Maximum Contact Wire Height Applicability
Comment: This parameter is applicable (“Y”) only if “Overhead contact line (OCL)” is selected for parameter 1.1.1.2.2.1.1.
Message: maximumContactWireHeight (1.1.1.2.2.6):The Contact Line System {$this} ({?clsLabel}), has a 'Overhead contact line (OCL)' type which makes the maximumContactWireHeight parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The value given can be design value or the last known measured value. If there is no change in height, nominal value will be given.

Values shall be given in metres with precision of 0.01 m.
When used for VehicleType, the parameter must have as range a VehicleTypeConfigParameterSet, of which the VehicleTypeConfiguration at least contains one EnergySystem, from the ones recorded under `era:energySupplySystem`. Further, all of the ENE supply systems mentioned under that parameter
must have a value for this parameter `era:maximumContactWireHeight`.

Minimum contact wire height DP

Indication of the minimum contact wire height expressed in metres.

IRI: *http://data.europa.eu/949/minimumContactWireHeight*

Parameter of
Contact Line System
Vehicle type configuration parameter set

General Information

Number:
1.1.1.2.2.6

XML Name:
ECS_MinWireHeight

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Contact line system (1.1.1.2.2)
Vehicle type technical characteristic

Data Format

Data Presentation
Double

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
When `not electrified` is chosen in parameter 1.1.1.2.2.1.1, then this parameter is not applicable.

Validation Rules:
Minimum Contact Wire Height
Comment: Indication of the minimum minimum contact wire height expressed in metres
Message: minimumContactWireHeight (1.1.1.2.2.6): The contact line system defines a minimum contact wire height expressed in metres. This error is due to having more than one value for this property, having a value that is not a double (real) number, or having a number that does not follow the pattern [N.NN] (with up to 2 decimals).
Minimum Contact Wire Height Applicability
Comment: This parameter is applicable (“Y”) only if “Overhead contact line (OCL)” is selected for parameter 1.1.1.2.2.1.1.
Message: minimumContactWireHeight (1.1.1.2.2.6):The Contact Line System {$this} ({?clsLabel}), has a 'Overhead contact line (OCL)' type which makes the minimumContactWireHeight parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
When used for VehicleType, the parameter must have as range a VehicleTypeConfigParameterSet, of which the VehicleTypeConfiguration
at least contains one EnergySystem, from the ones recorded under `era:energySupplySystem`. Further, all of the ENE supply systems mentioned under that parameter
must have a value for this parameter `era:minimumContactWireHeight`.

The value given can be design value or the last known measured value. If there is no change in height, nominal value will be given.

Values shall be given in metres with precision of 0.01 m.

Pantograph DP OP

General Information

Number:
1.1.1.2.3

Belongs to parameters group
Energy subsystem (1.1.1.2)

Related parameters
Accepted TSI compliant pantograph heads (1.1.1.2.3.1)
Accepted other pantograph heads (1.1.1.2.3.2)
Requirements for number of raised pantographs and spacing between them, at the given speed (1.1.1.2.3.3)
Contact strip material metallic content (1.1.1.2.3.4)
Permitted contact strip material (1.1.1.2.3.4)

Accepted TSI compliant pantograph heads OP

Indication of TSI compliant pantograph heads which are allowed to be used.

IRI: *http://data.europa.eu/949/tsiPantographHead*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.3.1

XML Name:
EPA_TSIHeads

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Pantograph (1.1.1.2.3)

Data Format

Data Presentation
Concept

Taxonomy Reference:
CompliantPantograph Heads

Values :

Code	Value
10	1950 mm (Type 1) with non-insulated horns
20	1600 mm (EP)
30	2000 mm – 2260 mm
40	None
50	1950 mm (Type 1) with insulated horns

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Mandatory only if “Overhead contact line (OCL)” is selected in 1.1.1.2.2.1.1, otherwise the parameter is not applicable.

Validation Rules:
Tsi Pantograph Head Applicability
Comment: Indication of TSI compliant pantograph heads which are allowed to be used.
Message: tsiPantographHead (1.1.1.2.3.1): This error is due to the track {?trackLabel} , violating the rule: This parameter is applicable ('Y') only if “Overhead contact line (OCL)” is selected for 1.1.1.2.2.1.1.
Tsi Pantograph Head
Comment: Indication of TSI compliant pantograph heads which are allowed to be used.
Message: tsiPantographHead (1.1.1.2.3.1): The track may have TSI compliant pantograph head values and each must be an IRI. This error may be due to having a value that is not an IRI.
Tsi Pantograph Head Skos
Comment: Accepted TSI compliant pantograph heads.
Message: Indication of the tsiPantographHead (1.1.1.2.3.1):): The track {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/compliant-pantograph-heads/CompliantPantographHeads.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The parameter can contain more than one pantograph defined in LOC&PAS TSI. Presentation of those pantographs is done by repetition of the parameter with a single selection.
If declaring acceptance of pantograph heads 1950 (type 1), both insulated and conductive horns shall be accepted.
The head geometry of pantograph type 1600 mm is as depicted in the points 4.2.8.2.9.2.1 of LOC&PAS TSI which refers to EN 50367:2020+A1:2022 Annex A.2 Figure A.6.
The head geometry of pantograph type 1950 mm is as depicted in the points 4.2.8.2.9.2.2 of LOC&PAS TSI which refers to EN 50367:2020+A1:2022 Annex A.2 Figure A.7.
The head geometry for pantograph type 2000/2260 mm is depicted in the point 4.2.8.2.9.2.3 of LOC&PAS TSI.

See also:
LOC&PAS TSI: 4.2.8.2.9.2
EN 50367 (2012): Annex A.2 and EN 50206-1 (2010): 4.2 and 6.2.3

References:
http://data.europa.eu/eli/reg/2014/1302/2023-09-28

Accepted other pantograph heads OP

Indication of pantograph heads which are allowed to be used.

IRI: *http://data.europa.eu/949/otherPantographHead*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.3.2

XML Name:
EPA_OtherHeads

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Pantograph (1.1.1.2.3)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Other Pantograph Heads

Values :

Code	Value
10	1950 mm (Type2)
20	1950 mm (PL)
30	1800 mm (NO,SE)
40	1760 mm (BE)
70	1450 mm
90	None
100	1700 mm (ES)
110	1700 mm with insulated horns (ES)
120	1860 mm with insulated horns (ES)

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Mandatory only if “Overhead contact line (OCL)” is selected in 1.1.1.2.2.1.1, otherwise the parameter is not applicable.

Validation Rules:
Other Pantograph Head Applicability
Comment: Indication of pantograph heads which are allowed to be used.
Message: otherPantographHead (1.1.1.2.3.2): This error is due to the track {?trackLabel} , violating the rule: This parameter is applicable ('Y') only if “Overhead contact line (OCL)” is selected for 1.1.1.2.2.1.1.
Other Pantograph Head
Comment: Indication of pantograph heads which are allowed to be used.
Message: otherPantographHead (1.1.1.2.3.2): The track may have other pantograph head values and each must be an IRI. This error may be due to having a value that is not an IRI.
Other Pantograph Head Skos
Comment: Indication of which other pantograph heads are allowed to be used.
Message: Indication of the otherPantographHead (1.1.1.2.3.2):): The track {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/other-pantograph-heads/OtherPantographHeads.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The parameter may contain more than one type of the pantograph head - all of them shall be indicated by repetition of the parameter with different single selections.
Additional values than the already identified in the list above are possible. They will be introduced by the Agency on request via a process of change request.

See also:

EN 50367:2020+A1:2022: Annex B3
LOC&PAS TSI: 7.3.2.14 (specific cases)

References:
http://data.europa.eu/eli/reg/2014/1302/2023-09-28

Requirements for number of raised pantographs and spacing between them, at the given speed OP

Indication of maximum number of raised pantographs per train allowed and minimum spacing centre line to centre line of adjacent pantograph heads, expressed in metres, at the given speed.

IRI: *http://data.europa.eu/949/trackRaisedPantographsDistanceAndSpeed*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.3.3

XML Name:
EPA_NumRaisedSpeed

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Pantograph (1.1.1.2.3)

Data Format

Data Presentation
Requirements for number of raised pantographs and spacing between them, at the given speed

Format:
Three values: [N] is number of pantographs; [NNN] is minimum distance between pantographs, in metres; [NNN] is the speed considered in km/h.

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Mandatory only if “Overhead contact line (OCL)” is selected in 1.1.1.2.2.1.1, otherwise the parameter is not applicable.

Validation Rules:

Track Raised Pantographs Distance And Speed
Comment: Relates the track with the class RaisedPantporaphsDistanceAndSpeed. Indication of maximum number of raised pantographs per train allowed and minimum spacing centre line to centre line of adjacent pantograph heads, expressed in metres, at the given speed.
Message: trackRaisedPantographsDistanceAndSpeed (1.1.1.2.3.3): The track defines a raised pantographs distance and speed value that must be an instance of RaisedPantographsDistanceAndSpeed.
Track Raised Pantograph Distance And Speed Applicability
Comment: Relates the track with the class RaisedPantographsDistanceAndSpeed. Indication of maximum number of raised pantographs per train allowed and minimum spacing centre line to centre line of adjacent pantograph heads, expressed in metres, at the given speed.
Message: trackRaisedPantographsDistanceAndSpeed (1.1.1.2.3.3): This error is due to the track {?trackLabel} , violating the rule: This parameter is applicable ('Y') only if “Overhead contact line (OCL)” is selected for 1.1.1.2.2.1.1.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
This parameter gives the information about the number of pantographs and the distance between them at a given speed for which the Overhead Contact Line (OCL) has been designed.

As for different speeds different combinations of number of pantographs and distance between them may exist, so this parameter can be repeated to present all of them.

The raised pantographs distance and speed is the indication of maximum number of raised pantographs per train allowed and minimum spacing centre line to centre line of adjacent pantograph heads, expressed in metres, at the given speed.

See 4.2.13 (TSI ENE) and 4.2.8.2.9.7 (TSI LOC&PAS)

See also:
ENE TSI: 4.2.13 ;
LOC&PAS TSI: 4.2.8.2.9.7

References:
http://data.europa.eu/eli/reg/2014/1302/2023-09-28
http://data.europa.eu/eli/reg/2014/1301/2023-09-28

Contact strip material metallic content DP

Indication of max. percentage of contact strip material Impregnated Carbon permitted to be used.

IRI: *http://data.europa.eu/949/contactStripMaterialMetallicContent*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.3.4

XML Name:
EPA_StripMaterial

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Pantograph (1.1.1.2.3)

Data Format

Data Presentation
Integer

Flags

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory only if impregnated carbon ([NN] % of metallic content)" is selected in 1.1.1.2.3.4, otherwise no value should be provided

Validation Rules:
Contact Strip Material Metallic Content
Comment: In case that the value of the property era:contactStripMaterial is impregnated carbon, it is the metallic content, the maximum percentage allowed.
Message: contactStripMaterialMetallicContent (1.1.1.2.3.4): The track has an indication of the material of the contact strip that must be an integer. This error may be due to the track having a value that is not an integer.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
In case that the value of the property era:contactStripMaterial is "impregnated carbon", it is the metallic content in % (this value must be added). This is the maximum percentage allowed.

See also:
LOC&PAS TSI: 4.2.8.2.9.4.2

References:
http://data.europa.eu/eli/reg/2014/1302/2023-09-28

Permitted contact strip material OP

Indication of which contact strip materials are permitted to be used on the infrastructure or with which the vehicles (of the VehicleType) may be equipped with.

IRI: *http://data.europa.eu/949/contactStripMaterial*

Parameter of

Running track
Subset with common characteristics
Vehicle type configuration parameter set

General Information

Number:
1.1.1.2.3.4

XML Name:
EPA_StripMaterial

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Pantograph (1.1.1.2.3)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
Contact strip materials

Values :

Code	Value
10	Copper
20	Plain carbon
30	Copper steel
40	Copper alloy
50	Impregnated carbon (% of metallic content)
60	Carbon with additive material
70	Carbon with cladded copper
80	Sintered copper

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Mandatory only if “Overhead contact line (OCL)” is selected in 1.1.1.2.2.1.1, otherwise the parameter is not applicable.

Validation Rules:

Contact Strip Material
Comment: Indication of the material of the contact strip.
Message: contactStripMaterial (1.1.1.2.3.4): The track has an indication of the material of the contact strip that must be an IRI.
Contact Strip Material Skos
Comment: Indication of the material of the contact strip.
Message: Indication of the contactStripMaterial (1.1.1.2.3.4):): The track {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/contact-strip-materials/ContactStripMaterials.
Contact Strip Material Applicability
Comment: Indication of which contact strip materials are permitted to be used.
Message: contactStripMaterial (1.1.1.2.3.4): This error is due to the track {?trackLabel} , violating the rule: This parameter is applicable ('Y') only if “Overhead contact line (OCL)” is selected for 1.1.1.2.2.1.1.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
[ERATV] When used for VehicleType, the parameter must have as range a VehicleTypeConfigParameterSet, of which the VehicleTypeConfiguration at least contains one EnergySystem, from the ones recorded under `era:energySupplySystem`. Further, all of the ENE supply systems mentioned under that parameter must have a value for this parameter `era:contactStripMaterial`.
[NN] for impregnated carbon concern the metallic content in %. In case of selection of this option, the respective value of the metallic content has to be added. [NN] is the maximum percentage allowed. In case of permitted material different than specified in predefined list, the option other shall be selected.
[NN] for impregnated carbon concern the metallic content in %. In case of selection of this option, the respective value of the metallic content has to be added. [NN] is the maximum percentage allowed.

In case of permitted material different than specified in predefined list, send ERA a change request.

When more than one value of the parameter has to be published, then parameter will to be repeated as many times as the number of values.

See also:
LOC&PAS TSI: 4.2.8.2.9.4.2

OCL separation sections DP OP

General Information

Number:
1.1.1.2.4

Belongs to parameters group
Energy subsystem (1.1.1.2)

Related parameters
Phase separation (1.1.1.2.4.1.1)
Information on phase separation (1.1.1.2.4.1.2)
System separation (1.1.1.2.4.2.1)
Information on system separation (1.1.1.2.4.2.2)
Distance between signboard and phase separation ending (1.1.1.2.4.3)

Phase separation DP

Indication of existence of phase separation and required information.

IRI: *http://data.europa.eu/949/hasPhaseSeparation*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.4.1.1

XML Name:
EOS_Phase

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
OCL separation sections (1.1.1.2.4)

Data Format

Data Presentation
Boolean

Format:
in XML: Y/N

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value is mandatory only if 1.1.1.2.2.1.1 parameter values is Overhead contact line (OCL) , otherwise applicability flag is "N" (not applicable)

Validation Rules:
Has Phase Separation Applicability
Comment: Indication of existence of phase separation and required information.
Message: hasPhaseSeparation (1.1.1.2.4.1.1): This error is due to the track {? trackLabel} , violating the rule: This parameter is applicable ('Y') only if “Overhead contact line (OCL)” is selected for 1.1.1.2.2.1.1.
Has Phase Separation
Comment: Indication of existence of phase separation and required information.
Message: hasPhaseSeparation (1.1.1.2.4.1.1): The track defines at most one existence of phase separation and required information value that is Y/N (boolean). This error may be due to the track having more than one value or having a value that is not Y/N (boolean).

Additional Information

General explanation:
In case of existence of phase separation on the track or on the section of the line the option True shall be selected.

Information on phase separation OP

Relates the Track with PhaseInfo. Indication of required several information on phase separation.

IRI: *http://data.europa.eu/949/trackPhaseInfo*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.4.1.2

XML Name:
EOS_InfoPhase

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
OCL separation sections (1.1.1.2.4)

Data Format

Data Presentation
Phase info

Format:
In RDF the range is an instance of the era:PhaseInfo class with all its properties.

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, the data format is a character string with the following structure: distance type [MIN/MAX] + length [NNN] + switch off breaker [Y/N] + lower pantograph [Y/N] + km [NNN.NNN]. The structure of the string is as follows:
- distance type [MIN/MAX] - single selection of 'MIN=minimum' or 'MAX=maximum' to show whether the length is a minimum distance between the inner contact strips of the pantographs or a maximum distance between the outer contact strips of the pantographs. Multiple strings for this parameter are accepted;
- length [NNN] - the length of the phase separation in meters;
- switch off breaker [Y/N], single selection of 'yes' or 'no' to show whether the breaker has to be switched off;
- lower pantograph [Y/N], single selection of 'yes' or 'no' to show whether the pantograph has to be lowered,
- Km [NNN.NNN] - the location from the start of the line where the new value is valid.

Flags

Applicability Flags:

Y/N

Validation

Dependencies:
A value is mandatory only if 1.1.1.2.4.1.1 parameter "Phase separation" value is "Y" (true), otherwise applicability flag is "N" (not applicable)

Validation Rules:
Track Phase Info
Comment: Relates the Track with PhaseInfo. Indication of required several information on phase separation.
Message: trackPhaseInfo (1.1.1.2.4.1.2): The track defines a track phase info value that must be an instance of PhaseInfo.
Track Phase Info Applicability
Comment: Relates the Track with PhaseInfo. Indication of required several information on phase separation.
Message: trackPhaseInfo (1.1.1.2.4.1.2): This error is due to the track {?trackLabel} , violating the rule: Applicable when in parameter 1.1.1.2.4.1.1 selected option is 'Y'

Additional Information

See also:
ENE TSI: 4.2.15

System separation DP

Indication of existence of system separation

IRI: *http://data.europa.eu/949/hasSystemSeparation*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.4.2.1

XML Name:
EOS_System

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
OCL separation sections (1.1.1.2.4)

Data Format

Data Presentation
Boolean

Format:
Y/N

Flags

Applicability Flags:

Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
It is applicable (Y) only if the value Overhead contact line (OCL) is selected for parameter "Type of contact line system"

Validation Rules:
Has System Separation
Comment: Indication of existence of system separation.
Message: hasSystemSeparation (1.1.1.2.4.2.1): The track has at most one existence of system separation value that must be Y/N (boolean). This error may be due to the track having more than one value or to having a value that is not Y/N (boolean).
Has System Separation Applicability
Comment: Indication of existence of system separation.
Message: hasSystemSeparation (1.1.1.2.4.2.1): This error is due to the track {? trackLabel} , violating the rule: This parameter is applicable ('Y') only if “Overhead contact line (OCL)” is selected for 1.1.1.2.2.1.1.

Additional Information

General explanation:
In case of existence of system separation on the track or on the section of the line and required information on the section of the line, the option Y=yes shall be selected.

Information on system separation OP

Indication of required several information on system separation

IRI: *http://data.europa.eu/949/trackSystemSeparationInfo*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.4.2.2

XML Name:
EOS_InfoSystem

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
OCL separation sections (1.1.1.2.4)

Data Format

Data Presentation
System separation info

Format:

In RDF, the range is an instance of the era:SystemSeparationInfo class with all its properties.

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, the data format is a character string with the following structure: length [NNN] + switch off breaker [Y/N] + lower pantograph [Y/N] + km [NNN.NNN]

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Mandatory if there is an indication of existence of system separation (parameter 1.1.1.2.4.2.1)

Validation Rules:
Track System Separation Info
Comment: Relates the Track with the SystemSeparationInfo. Indication of required several information on system separation.
Message: trackSystemSeparationInfo (1.1.1.2.4.2.2): The track defines a system separation info value that must be an instance of SystemSeparationInfo.
Track System Separation Info Applicability
Comment: Relates the Track with the SystemSeparationInfo. Indication of required several information on system separation.
Message: trackSystemSeparationInfo (1.1.1.2.4.2.2): This error is due to the track {? trackLabel} , violating the rule: Applicable when in parameter 1.1.1.2.4.2.1 selected option is 'Y'

Additional Information

General explanation:
Length - the length of the system separation in meters
Switch off breaker - single selection of Y=yes or N=no to show whether the breaker has to be switched off
Lower pantograph - single selection of Y=yes or N=no to show whether the pantograph has to be lowered
Km - the location from the start of the line where the new value is valid

See also:
ENE TSI: 4.2.16

Distance between signboard and phase separation ending DP

Distance between the signboard authorizing the driver to raise pantograph or close the circuit breaker after passing the phase separation and the end of the phase separation section.

IRI: *http://data.europa.eu/949/distSignToPhaseEnd*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.4.3

XML Name:
EOS_DistSignToPhaseEnd

Deadline:
16 January 2020

Belongs to parameters group
OCL separation sections (1.1.1.2.4)

Data Format

Data Presentation
Integer

Format:
NNN

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
It is applicable (Y) only if the value Overhead contact line (OCL) is selected for parameter "Type of contact line system"

Validation Rules:
Dist Sign To Phase End
Comment: Specific for route compatibility check on French network. Distance between the signboard authorizing the driver to 'raise pantograph' or 'close the circuit breaker' after passing the phase separation and the end of the phase separation section.
Message: distSignToPhaseEnd: The track must have at most one value of the distance between the signboard authorizing the driver to 'raise pantograph' or 'close the circuit breaker' after passing the phase separation and the end of the phase separation section, and the value is an integer. This error is due to the track having more than one value or to having a value that is not an integer.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Specific for route compatibility check on French network.

Requirements for rolling stock DP OP

General Information

Number:
1.1.1.2.5

Belongs to parameters group
Energy subsystem (1.1.1.2)

Related parameters
Current or power limitation on board required (1.1.1.2.5.1)
Contact force permitted (1.1.1.2.5.2)
Automatic dropping device required (1.1.1.2.5.3)
Document with restriction related to power consumption of specific electric traction unit(s) (1.1.1.2.5.4)
Document with restriction related to the position of Multiple Traction unit(s) to comply with contact line separation (1.1.1.2.5.5)

Current or power limitation on board required DP

Indication of whether an on board current or power limitation function on vehicles is required.

IRI: *http://data.europa.eu/949/currentLimitationRequired*

Parameter of
Contact Line System

General Information

Number:
1.1.1.2.5.1

XML Name:
ERS_PowerLimitOnBoard

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Requirements for rolling stock (1.1.1.2.5)

Data Format

Data Presentation
Boolean

Format:
Y/N

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
When "not electrified" is chosen in parameter "Type of contact line system", then this parameter is not applicable.

Validation Rules:
Current Limitation Required
Comment: Indication of whether an on board current or power limitation function on vehicles is required.
Message: currentLimitationRequired (1.1.1.2.5.1): The track may have a current limitation required value that is a boolean. This error may be due to the track having a value that is not a boolean.
Current Limitation Required Applicability
Comment: Indication of whether an on board current or power limitation function on vehicles is required.
Message: currentLimitationRequired (1.1.1.2.5.1): This error is due to the track {? trackLabel} , violating the rule: When 'not electrified' is chosen in parameter 1.1.1.2.2.1.1, then this parameter is not applicable selection ‘N’.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

See also:
LOC&PAS TSI: 4.2.8.2.4

Contact force permitted DP

Indication of contact force allowed expressed in newton.

IRI: *http://data.europa.eu/949/permittedContactForce*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.5.2

XML Name:
ERS_ContactForce

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Requirements for rolling stock (1.1.1.2.5)

Data Format

Data Presentation
String

Format:

The force is either given as: a value of the static force and of the maximum force expressed in newtons, or as a formula for function of the speed

Unit of Measure:
Newton

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value is mandatory if the value Overhead contact line (OCL) is selected for parameter "Type of contact line system"

Validation Rules:
Permitted Contact Force Applicability
Comment: Indication of contact force allowed expressed in newton.
Message: permittedContactForce (1.1.1.2.5.2): This error is due to the track {? trackLabel} , violating the rule: This parameter is applicable ('Y') only if “Overhead contact line (OCL)” is selected for 1.1.1.2.2.1.1.
Permitted Contact Force
Comment: Indication of contact force allowed expressed in newtons.
Message: permittedContactForce (1.1.1.2.5.2): The track must have at most one value of the contact force allowed expressed in newtons. This error is due to the track having more than one value or to having a value that is not a character string.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The formula of the function shall represent the curve describing the value of the contact force in relation to the speed.
Static and maximum forces are given only for the maximum permitted line speed (see parameter number 1.1.1.1.2.5).

See also:
LOC&PAS TSI: 4.2.8.2.9.6
ENE TSI: 4.2.11
EN 50367:2020+A1:2022 Table 6

Automatic dropping device required DP

Indication of whether an automatic dropping device (ADD) required on the vehicle.

IRI: *http://data.europa.eu/949/automaticDroppingDeviceRequired*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.5.3

XML Name:
ERS_AutoDropRequired

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Requirements for rolling stock (1.1.1.2.5)

Data Format

Data Presentation
Boolean

Format:
Y/N

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value is mandatory if the value Overhead contact line (OCL) is selected for parameter "Type of contact line system"

Validation Rules:
Automatic Dropping Device Required
Comment: Indication of the requirement of automatic dropping device.
Message: automaticDroppingDeviceRequired (1.1.1.2.5.3): The track must have at most one value of the requirement of automatic dropping device and it is Y/N (boolean). This error is due to the track having more than one value or to having a value that is not Y/N (boolean).
Automatic Dropping Device Required Applicability
Comment: Indication of whether an automatic dropping device (ADD) required on the vehicle.
Message: automaticDroppingDeviceRequired (1.1.1.2.5.3): This error is due to the track {?trackLabel} , violating the rule: This parameter is applicable ('Y') only if “Overhead contact line (OCL)” is selected for 1.1.1.2.2.1.1.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

See also:
LOC&PAS TSI: 4.2.8.2.9.10
EN 50206-1:2010

Document with restriction related to power consumption of specific electric traction unit(s) OP

Name and/or reference of the document specifying the restriction(s) related to power consumption of specific electric traction unit(s).

IRI: *http://data.europa.eu/949/documentRestrictionPowerConsumption*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.5.4

XML Name:
ERS_RestrictionPowerConsDoc

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Requirements for rolling stock (1.1.1.2.5)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Document Restriction Power Consumption
Comment: Document with restriction related to power consumption of specific electric traction unit(s).
Message: documentRestrictionPowerConsumption (1.1.1.2.5.4): The track may have a Document with restriction related to power consumption of specific electric traction unit(s) value that is a Document. This error may be due to the track having a value that is not a Document.

Additional Information

General explanation:
The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Document with restriction related to the position of Multiple Traction unit(s) to comply with contact line separation OP

Name and/or reference of the document specifying the restriction(s) related to the position of Multiple Traction unit(s) to comply with contact line separation.

IRI: *http://data.europa.eu/949/documentRestrictionPositionContactLineSeparation*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.5.5

XML Name:
ERS_RestrictionMTDoc

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Requirements for rolling stock (1.1.1.2.5)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Document Restriction Position Contact Line Separation
Comment: Document with restriction related to the position of Multiple Traction unit(s) to comply with contact line separation.
Message: documentRestrictionPositionContactLineSeparation (1.1.1.2.5.5): The track may have a Document with restriction related to the position of Multiple Traction unit(s) to comply with contact line separation value that is a Document. This error may be due to the track having a value that is not a Document.

Additional Information

General explanation:

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Control-command and signalling subsystem DP OP

General Information

Number:
1.1.1.3

Belongs to parameters group
RINF Technical characteristic

Related parameters
Declarations of verification for track (1.1.1.3.1)
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)
Train detection systems defined based on frequency bands (1.1.1.3.4 | 1.2.1.1.3)
Train protection legacy systems (1.1.1.3.5 | 1.2.1.1.4)
Radio Legacy Systems (1.1.1.3.6 | 1.2.1.1.5)
Other train detection systems (1.1.1.3.7 | 1.2.1.1.6)
Transitions between systems (1.1.1.3.8 | 1.2.1.1.7)
Parameters related to electromagnetic interferences (1.1.1.3.9 | 1.2.1.1.8)
Line-side system for degraded situation (1.1.1.3.10 | 1.2.1.1.9)
Brake related parameters (1.1.1.3.11)
Automated Train Operation (ATO) (1.1.1.3.13 | 1.2.1.1.10)
Signal (1.1.1.3.14)

Declarations of verification for track DP OP

General Information

Number:
1.1.1.3.1

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
EC declaration of verification for track relating to compliance with the requirements from TSIs applicable to control, command signalling subsystem (1.1.1.3.1.1)
Error corrections required for the on-board ETCS, GSM-R and/or ATO function (1.1.1.3.1.2 | 1.2.1.1.1.19)
Reasons for Error corrections required, but accepted by the IM for the on-board ETCS, GSM-R and/or ATO function (1.1.1.3.1.2 | 1.2.1.1.1.19)

EC declaration of verification for track relating to compliance with the requirements from TSIs applicable to control, command signalling subsystem DP

Unique number for EC declarations in accordance with Commission Implementing Regulation (EU) 2019/250.

IRI: *http://data.europa.eu/949/verificationCCS*

Parameter of

Running track
Subset with common characteristics
Vehicle Registration Case

General Information

Number:
1.1.1.3.1.1

XML Name:
CDE_ECVerification

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Declarations of verification for track (1.1.1.3.1)

Data Format

Data Presentation
String

Format:
CC/RRRRRRRRRRRRR/YYYY/NNNNNN

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Verification Ccs
Comment: Unique number for EC declarations following format requirements specified in the 'Document about practical arrangements for transmitting interoperability documents'.
Message: verificationCCS (1.1.1.3.1.1): The track defines the unique number for EC declarations following format requirements specified in the 'Document about practical arrangements for transmitting interoperability documents; the value must be a string that follows the pattern [CC/RRRRRRRRRRRRR/YYYY/NNNNNN] where the YYYY characters must be a number between 1900 and 2100, and the NNNNNN characters must be digits. This error is due to having a value that does not follow the pattern.

Additional Information

General explanation:

(CCS) in title means that here we include only declarations concerning command control and signalling subsystem on the specific track. For the specific track the several EC declarations may be issued, so parameter has to repeated as many times as many numbers of declarations has to be presented.

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Error corrections required for the on-board ETCS, GSM-R and/or ATO function OP

List of unacceptable errors impacting the IM network that are required to be solved in the on-board according to the TSI CCS point 7.2.10.3 specification maintenance point (ETCS, GSM-R and/or ATO). An additional parameter (era:errorCorrectionsOnboardExplanation) must document if a non-implemented CR has been accepted by the IM.

IRI: *http://data.europa.eu/949/errorCorrectionsOnboard*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.1.2
1.2.1.1.1.19

Deadline:
12 months after the entry into force of TSI CCS and at least 12 months after publication of Article 7 Guide

Belongs to parameters group
Declarations of verification for track (1.1.1.3.1)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Onboard Error Corrections

Values :

Code	Value	Explanation
887	CR887	Position Report Consistency (Follow-up of CR556)
940	CR940	Minimum Safe Rear End position and position reporting ambiguities
994	CR994	Text message start conditions
1021	1021	Brake command revocation/acknowledgement issues
1023	1023	Conditions for start/end message
1028	1028	End condition for sending MA requests
1120	CR1120	Uncertain handling of some infill information
1128	1128	Passing Level 0 / Level NTC border in PT mode
1130	1130	Contradiction between SRS 3.12.2.8 (Trip at route unsuitability) and SRS 3.13.10.2.6/7
1146	CR1146	Euroradio HDLC parameters
1162	1162	Functions that could use linking information in modes without linking consistency check
1166	CR1166	Ambiguities in driver acknowledgement requirements
1170	CR1170	Ambiguity about the list of traction systems accepted by a diesel engine
1171	CR1171	Messages containing shifted location reference when orientation of LRBG is unknown
1240	CR1240	attack from unlinked balise
1251	CR1251	Use of inconsistent or incomplete terms for the cooperative MA shortening function
1252	CR1252	Ambiguities about release speed and application of A.3.4 in case a train accepts a CES
1259	CR1259	Accuracy of distances measured on-board not considered when determining Release Speed from MRSP

Code	Value	Explanation
1263	CR1263	MA request condition when LoA speed is above MRSP
1264	CR1264	Exhaustiveness of the list of actions not to be reverted or executed twice
1267	CR1267	Acquiring the list of available networks whilst communication session is established
1274	CR1274	Problem to compare locations in the absence of linking information
1282	CR1282	Subset-044 chapter on safety is inconsistent with Subset-026 regarding handling of EOLM info
1288	CR1288	Shortcomings due to specific locations temporarily considered as the EOA/SvL
1290	1290	The acquisition of the train running number via the train interface is not covered by Subset-034
1292	1292	RAMS related supervision is missing in the active function table
1293	CR1293	Ambiguity about clauses to be applied to messages containing high priority data
1295	CR1295	TSR inhibition in SB and SR modes
1296	CR1296	Wrong assumption in on-board calculation of release speed
1300	CR1300	Follow-up to CR977
1304	1304	Missing Level 3 safety requirements
1306	CR1306	Undefined sequence of actions following the filtering of trackside information as per SRS 4.8
1307	1307	Miscellaneous editorial findings in B3R2
1309	CR1309	Enhancement of HDLC to handle retransmission of SABME message
1310	CR1310	DNS/ETCS on-board communication handling

Code	Value	Explanation
1311	CR1311	Inconsistency in Subset-026 regarding the relevance of Q_SLEEPSESSION for session termination orders
1312	CR1312	Undefined sequence of actions following the filtering of trackside information as per SRS 4.8 (part 2)
1313	CR1313	Unclear management of train position status on passing unlinked BG(s)
1317	1317	No explicit handling of loop message consistency error
1318	CR1318	Ambiguity in determination of location accuracy
1319	CR1319	Support of different transmission speeds (ETCS data)
1320	1320	MA request issues
1321	1321	Transition PS-SF inconsistent with other slave modes
1322	1322	Unavailability of Referenced Adaptation Layer Entity Conformance Requirements
1324	CR1324	Problems with applying SRS clauses related to the supervision of an unprotected LX
1325	CR1325	Rejection of safety relevant information due to pending acknowledgement of validated train data
1326	CR1326	Display conflict in area D of ETCS DMI
1327	CR1327	Reset of confidence interval
1328	1328	Unclear expected on-board behaviour in case a change of mode has to be reported while the communication session with the RBC is under termination
1329	1329	Issues with SRS section 3.16 “Data Consistency
1330	1330	The permitted speed to display can be lower than the speed of the MRDT

Code	Value	Explanation
1331	1331	Inconsistent DRIVER_ID specification in the SUBSET-027
1332	CR1332	Release speed calculated on-board while a LTO in rear of the EOA is stored on-board
1333	CR1333	Subset-026 clause 3.12.4.4 does not cover the case of reception of a new MA without mode profile
1334	CR1334	Ambiguity regarding the mode and level end events for the display of a text message
1335	CR1335	Train categories B3 on B2
1338	CR1338	Issues regarding the forwarding of data to a National System
1340	CR1340	Maximum D_LRBG exceeded
1341	1341	Inconsistent use of the term 'reverse movement'
1342	CR1342	Unpractical coexistence between level 2 and level 3
1345	1345	Missing requirement for CMD function
1347	CR1347	Unclear specification of 'balise detection degradation' function
1348	CR1348	No change of speed and distance monitoring supervision status
1349	CR1349	Ambiguity in display of override status
1353	CR1353	Undefined term 'the level is configured on-board'
1354	CR1354	Misleading term 'the expected balise group is found'
1358	CR1358	Missing confidence interval to supervise the SR distance
1370	CR1370	Relocation without linking
1371	1371	Missing PS IP network protocol conformance requirements
1372	CR1372	Uniqueness of BG IDs vs. VBC function
1376	CR1376	List of available levels after

Code	Value	Explanation
		transition announcement
1377	CR1377	Handling of an RBC transition order for a different RBC during an on-going RBC/RBC handover
1382	CR1382	Repositioning information in a BG containing infill MA
1383	1383	Wrong formulation of non-leading input information from rolling stock
1384	CR1384	Issues when the on-board supervises an MA with release speed
1386	CR1386	Inconsistent speed and distance monitoring transition when the train speed is equal to the release or target speed
1387	CR1387	Inconsistency regarding the way to send the Train Data during SoM
1389	CR1389	Reaction when CI of the odometry is exceeding the accuracy requirement of 5m+5% (SS-41)
1395	1395	Unclear on-board handling of a Packet 76 in an X=1 message
1396	CR1396	Resolution of the VBC validity period
1397	CR1397	Sorting speed based upon mass per unit length
1398	CR1398	Risk for deadlock in the clock offset update procedure in SUBSET-098
1405	1405	Error in the applicability conditions of [TS 27.010]
1406	CR1406	Handling of location based information referred to different BGs when the information cannot be relocated to the same BG
1408	CR1408	Train data before SoM position report
1409	CR1409	'Infinite' information in RRI
1410	1410	Sending static information to a vehicle regarding area in advance of an RBC-border
1411	CR1411	Inconsistency section timer expires

Code	Value	Explanation
1413	1413	Speed limit for mode change OS, SH, LS
1414	CR1414	Traction cut-off ambiguity
1415	CR1415	KMS protocol issue
1417	CR1417	TCP connection loss detection
1418	CR1418	Unclear management of MA section timers
1419	CR1419	Undue extension of MA via a mode profile for further location
1423	CR1423	Unacceptable risks with High Priority Data
1427	CR1427	Radio hole functionality shortcomings
1428	CR1428	Alignment of KM related variables and messages
1429	1429	Harmonisation of the FQDN
1431	CR1431	Unclear management of the time stamp of the SH request included in the SH Authorised message
1432	CR1432	Wrong value of T_traction in on-board calculation of release speed
5036	5036	Support of different transmission speeds (voice)
5037	CR5037	Use of High Priority call GID 200
5038	CR5038	FN Numbers registration/deregistration
5039	CR5039	Call arbitration table for cab radios
5040	CR5040	MI/M misalignments in the specifications
5041	CR5041	Radio characteristics for EDOR
5042	CR5042	Handling of temporary functional numbers during cab radio power on
5049	CR5049	PPP Activation timeout is not defined and ETCS DNS query repetition is missing
5050	CR5050	Errors & inconsistencies found in FFFIS for SIM card

Code	Value	Explanation
5054	5054	RBC number format defined on FFFIS for Euroradio needs to be aligned with Subset-054
5057	5057	Not possible to support Mobile Class A for EDOR, update of references, chapters numbering and other misalignments.

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Error Corrections Onboard
Comment: List of applicable CR's required to be solved in the on-board according to the TSI CCS point 7.2.10.3 specification maintenance point (ETCS, GSM-R and/or ATO).
Message: errorCorrectionsOnboard (1.1.1.3.1.2, 1.2.1.1.1.19): The track may have an error correction required for the on-board ETCS, GSM-R and/or ATO function value that is an IRI. This error is due to having more than one value or having a value that is not an IRI.
Error Corrections Onboard Skos
Comment: List of applicable CR's required to be solved in the on-board according to the TSI CCS point 7.2.10.3 specification maintenance point (ETCS, GSM-R and/or ATO).
Message: errorCorrectionsOnboard (1.1.1.3.1.2, 1.2.1.1.1.19): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/error-corrections/OnboardErrorCorrections.

Additional Information

General explanation:
This parameter should be limited to those required for the onboard, in order to allow normal service as defined in Art. 10 CR. The values will come from a list.
IM's may choose to make available the optional ETCS error corrections as well, but this should be done using other means than the RINF register.
This parameter should also be understood as ETCS, ATO and GSM-R related error corrections required for the on-board. pending a formal update and approval of the relevant legislative annex.
For the specific track the error corrections to be applied is one list only.

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Reasons for Error corrections required, but accepted by the IM for the on-board ETCS, GSM-R and/or ATO function DP

Explanation on why a mandatory onboard CR required to be solved in the on-board (ETCS, GSM-R and/or ATO) was accepted by the IM.

IRI: *http://data.europa.eu/949/errorCorrectionsOnboardExplanation*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.1.2
1.2.1.1.1.19

Deadline:
12 months after the entry into force of TSI CCS and at least 12 months after publication of Article 7 Guide

Belongs to parameters group
Declarations of verification for track (1.1.1.3.1)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Error Corrections Onboard Explanation
Comment: Explanation on why a mandatory onboard CR required to be solved in the on-board (ETCS, GSM-R and/or ATO) was accepted by the IM.
Message: errorCorrectionsOnboardExplanation (1.1.1.3.1.2, 1.2.1.1.1.19): The errorCorrectionsOnboardExplanation must be a string. This error is due to having more than one value or having a value that is not a string.

TSI compliant train protection system (ETCS) DP OP

General Information

Number:
1.1.1.3.2
1.2.1.1.1

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
European Train Control System (ETCS) level (1.1.1.3.2.1 | 1.2.1.1.1.1)
ETCS baseline (1.1.1.3.2.2 | 1.2.1.1.1.2)
ETCS infill necessary for line access (1.1.1.3.2.3 | 1.2.1.1.1.3)
ETCS infill installed line-side (1.1.1.3.2.4 | 1.2.1.1.1.4)
Has ETCS national packet 44 application implemented (1.1.1.3.2.5 | 1.2.1.1.1.5)
Existence of operating restrictions or conditions (1.1.1.3.2.6 | 1.2.1.1.1.6)
Train integrity confirmation from on-board (not from driver) necessary for line access (1.1.1.3.2.8 | 1.2.1.1.1.8)
ETCS system compatibility (1.1.1.3.2.9 | 1.2.1.1.1.9)
ETCS M_version (1.1.1.3.2.10 | 1.2.1.1.1.10)
Safe consist length information from on-board necessary for access the line and SIL (1.1.1.3.2.11 | 1.2.1.1.1.11)
Is the ETCS trackside engineered to transmit Track Conditions (1.1.1.3.2.12 | 1.2.1.1.1.12)
Track conditions which can be transmitted (1.1.1.3.2.12.1 | 1.2.1.1.1.12.1)
ETCS trackside implements level crossing procedure or an equivalent solution (1.1.1.3.2.13 | 1.2.1.1.1.13)
Cant Deficiency used for the basic SSP (1.1.1.3.2.14 | 1.2.1.1.1.14)
Other Cant Deficiency train categories for which the ETCS trackside is configured to provide SSP (1.1.1.3.2.14.1 | 1.2.1.1.1.14.1)
Reasons for which an ETCS Radio Block Center can reject a train (1.1.1.3.2.15 | 1.2.1.1.1.15)
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)
ID of ERTMS/ETCS Radio Block Center (1.1.1.3.2.17 | 1.2.1.1.1.17)
Phone number of ERTMS/ETCS Radio Block Center (1.1.1.3.2.17 | 1.2.1.1.1.17)
Big Metal Mass (1.1.1.3.2.18 | 1.2.1.1.1.18)
Document with operating restrictions or conditions
ETCS baseline incompatibility indication
ETCS national packet 44 application implemented

European Train Control System (ETCS) level OP

ETCS application level related to the track side equipment.

IRI: *http://data.europa.eu/949/etcsLevelType*

Parameter of
ETCS

General Information

Number:
1.1.1.3.2.1
1.2.1.1.1.1

XML Name:
CPE_Level

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Concept

Taxonomy Reference:
ETCS Levels

Values :

Code	Value
20	1
30	2
50	0
60	NTC
70	ETCS under construction

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Etcs Level Type
Comment: Indicates the type associated as a SKOS concept from the era:ETCSLevel related to the track side equipment.
Message: etcsLevelType (1.1.1.3.2.1, 1.2.1.1.1.1): The ETCS has at most one etcsLevelType value and it must be an IRI. This error is due to the ETCS having more than one value or having a value that is not an IRI.
Etcs Level Type Skos
Comment: Indicates the type associated as a SKOS concept from the era:ETCSLevel related to the track side equipment.
Message: Indication of the etcsLevelType (1.1.1.3.2.1, 1.2.1.1.1.1): The ETCS {$this} has a value {? concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-levels/.

OPE TSI References

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3.2.7

Additional Information

General explanation:

The different ERTMS / ETCS application levels are a way to express the possible operating relationships between track and train.

Level definitions are principally related to the track side equipment used, to the way the track side information reaches the on-board units and to which functions are processed in the track side and in the on-board equipment respectively.

If ETCS is on the trackside (one or more levels are selected), all other ETCS parameters (from 1.1.1.3.2.2 to 1.1.1.3.2.10) are applicable and mandatory to be populated with values .
If the line is only equipped with Class B, this should be reflected in Parameter 1.1.1.3.5.3, and this parameter is “N”(not applicable).

The ETCS value NTC is only relevant when the line is dual equipped with ETCS (i.e., balises are placed in the track) and Class B system, and both systems are in operation at the same time.
In those cases, this parameter should be filled relevant ETCS Level and repeated with the value NTC.

If the line is only equipped with Class B, this should be reflected in Parameter 1.1.1.3.5.3, and this parameter etcsLevelType should not be used.

See: TSI CCS (Subset-026, Chapter 2, 2.6)

See also:
TSI CCS (Subset-026, Chapter 2, 2.6)

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

ETCS infill necessary for line access DP

Indication whether infill is required to access the line for safety reasons.

IRI: *http://data.europa.eu/949/etcsInfillLineAccess*

Parameter of
ETCS
Subset with common characteristics

General Information

Number:
1.1.1.3.2.3
1.2.1.1.1.3

XML Name:
CPE_Infill

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1) and the ETCS level is 1.

Validation Rules:
Etcs Infill Line Access Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: etcsInfillLineAccess (1.1.1.3.2.3, 1.2.1.1.1.3):The ETCS or subset {$this} ({?thisLabel}), has a 'ETCS Level Type' defined which makes the etcsInfillLineAccess parameter applicable. This error is due to {$this} not having a value for such a parameter.
Etcs Infill Line Access
Comment: Indication whether infill is required to access the line for safety reasons.
Message: etcsInfillLineAccess (1.1.1.3.2.3, 1.2.1.1.1.3): Each ETCS or subset may define the existence of a ETCS infill necessary for line access. This error is due to having more than one indication of ETCS infill necessary for line access value or having an indication of ETCS infill necessary for line access value that is not Y/N (boolean).

Additional Information

General explanation:
As indicated in CCS TSI section 7.2.9.1, an ETCS Level 1 trackside application may require that the on-board is equipped with the corresponding in-fill data transmission (Euroloop or radio)
if the release speed is set to zero for safety reasons.

See also:
TSI CCS 7.2.9.1 & 4.2.3

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

ETCS infill installed line-side OP

Information about installed trackside equipment capable to transmit infill information by loop or Global System for Mobile communications for Railways (GSM-R) for level 1 installations.

IRI: *http://data.europa.eu/949/etcsInfill*

Parameter of
ETCS
Vehicle Type

General Information

Number:
1.1.1.3.2.4
1.2.1.1.1.4

XML Name:

CPE_InfillLineSide

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
ETCS Infills

Values :

Code	Value	Also Known As
10	None	
20	Euroloop	Euroloop infill
30	Radio infill	Radio, GSM-R
40	Euroloop & Radio	Euroloop & Radio infill

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory in case of ETCS level 1 and infill device(s) are installed. Otherwise it is not applicable.

Validation Rules:
Etcs Infill Skos
Comment: Information about installed trackside equipment capable of transmitting infill information by loop or Global System for Mobile communications for Railways (GSM-R) for level 1 installations.
Message: etcsInfill (1.1.1.3.2.4, 1.2.1.1.1.4): The ETCS {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-infills/.
Etcs Infill
Comment: Information about installed trackside equipment capable of transmitting infill information by loop or Global System for Mobile communications for Railways (GSM-R) for level 1 installations.
Message: etcsInfill (1.1.1.3.2.4, 1.2.1.1.1.4): The ETCS may have an ETCS infill, and its value must be an IRI. This error is due to the ETCS instance having more than one value or having a value that is not an IRI.
Etcs Infill Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 contains 1. Related to rule for etcsLevelType
Message: etcsInfill (1.1.1.3.2.4, 1.2.1.1.1.4): The ETCS {$this} ({?thisLabel}), has a ETCS level type value of 1 which makes the etcsInfill parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
TSI CCS (4.2.2 & 4.3.3)

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Has ETCS national packet 44 application implemented
DP

Indication whether data for national packet 44 applications is transmitted between track and train.

IRI: *http://data.europa.eu/949/hasEtcsNationalPacket44*

Parameter of

ETCS
Subset with common characteristics

General Information

Number:
1.1.1.3.2.5
1.2.1.1.1.5

XML Name:
CPE_NatApplication

Deadline:
12 months after publication of Article 7 Guide
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Boolean

Flags

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).

Validation Rules:

Has Etcs National Packet44
Comment: Indication whether data for national packet 44 applications is transmitted between track and train.
Message: hasEtcsNationalPacket44 (1.1.1.3.2.5, 1.2.1.1.1.5): Each ETCS or subset may define the existence of an ETCS national packet 44 application. This error is due to having more than one indication of ETCS national packet 44 application value or having an indication of ETCS national packet 44 application value that is not Y/N (boolean).
Has Etcs National Packet44applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: hasEtcsNationalPacket44 (1.1.1.3.2.5, 1.2.1.1.1.5):The ETCS {$this} ({? thisLabel}), has an 'ETCS Level Type' defined that makes the hasEtcsNationalPacket44 parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:

Value can be `false` or a link to the implemented functions. The hasEtcsNationalPacket44 property represents the true or false value. The etcsNationalPacket44Function represents the functions.

Packets 44 are the means to transmit data for national applications between train and track and vice versa, using the data transmission facilities included within the ETCS.
NID_XUSER values managed by ERA in a document about ETCS variables available on ERA website.

See also:

https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632
TSI CCS (7.4.3 & 6.2.4.2).

References:

http://data.europa.eu/eli/reg_impl/2023/1695/oj

Existence of operating restrictions or conditions DP

Indication whether restrictions or conditions due to partial compliance with the TSI CCS exist.

IRI: *http://data.europa.eu/949/hasETCSRestrictionsConditions*

Parameter of

ETCS
Subset with common characteristics

General Information

Number:

1.1.1.3.2.6
1.2.1.1.1.6

XML Name:

CPE_RestrictionsConditions

Deadline:

12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Has Etcsrestrictions Conditions
Comment: Indication whether restrictions or conditions due to partial compliance with the TSI CCS exist.
Message: hasETCSRestrictionsConditions (1.1.1.3.2.6, 1.2.1.1.1.6): Each ETCS or subset may define the existence of operating restrictions or conditions. This error is due to having more than one value or having a value that is not Y/N (boolean).
Has Etcsrestrictions Conditions Applicability
Comment: Only applicable (true) when selected value for 1.1.1.3.2.1 (ETCS present).
Message: hasETCSRestrictionsConditions (1.1.1.3.2.6, 1.2.1.1.1.6):The ETCS or subset {$this} ({?thisLabel}), has a 'ETCS level' type selected which makes the hasETCSRestrictionsConditions parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
If operational restrictions and conditions are applicable, a document will be provided as a value of era:era:etcsRestrictionsConditionsDoc property. The RU has to contact the IM to be informed about these conditions.

These conditions and restrictions of use are considered in section 6.4 of the CCS TSI. They should be described using the template available on Agency website (Certification
and deviations - Guidelines for using the ERA template) with the following link: https://www.era.europa.eu/activities/european-rail-traffic-management-system-ertms_en#meeting6.

See also:
https://www.era.europa.eu/content/certification-issues
https://www.era.europa.eu/system/files/2022-11/restrictions_and_added_functions_en_1.doc

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Train integrity confirmation from on-board (not from driver) necessary for line access DP

Indication whether train confirmation from on-board is required to access the line for safety reasons.

IRI: *http://data.europa.eu/949/trainIntegrityOnBoardRequired*

Parameter of

ETCS
Subset with common characteristics

General Information

Number:
1.1.1.3.2.8
1.2.1.1.1.8

XML Name:
CPE_IntegrityConfirmation

Deadline:
16 January 2020
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS Level 2 is present, ETCS Baseline > 4 MR1 and IM confirms train integrity function is required).
Parameter only applicable when ETCS Baseline > 4 MR1 with operation requiring train integrity.

Validation Rules:
Train Integrity On Board Required
Comment: Indication whether train confirmation from on-board is required to access the line for safety reasons.
Message: trainIntegrityOnBoardRequired (1.1.1.3.2.8, 1.2.1.1.1.8): value must be xsd:boolean (true/false) and at most one value is allowed.

OPE TSI References

Part of RCC Algorithm:
true

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3.4.11

Additional Information

General explanation:

Value is modeled as xsd:boolean:
- true = required
- false = not required

In hybrid operation, the requirement may depend on the operational mode; represent the applicable case using true/false, or omit the statement when not applicable.

References:

http://data.europa.eu/eli/reg_impl/2023/1695/oj

ETCS system compatibility OP

ETCS requirements used for demonstrating technical compatibility.

IRI: *http://data.europa.eu/949/etcsSystemCompatibility*

Parameter of

ETCS
Vehicle Type

General Information

Number:

1.1.1.3.2.9
1.2.1.1.1.9

XML Name:

CPE_SystemCompatibility

Deadline:

12 months after publication of Article 7 Guide for OP tracks
16 January 2020

Belongs to parameters group

TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)
Vehicle type technical characteristic

Data Format

Data Presentation

Concept

Taxonomy Reference:

ETCS System Compatibilities

Values :

Code	Value
10	Not Defined
20	ESC-EU-0
30	ESC-SE-01-HiL2
50	ESC-SE-03-L3
60	ESC-SE-04-HiL2B3
70	ESC-SE-05-BoL2B3
71	ESC-ES-211
72	ESC-ES-221
73	ESC-ES-231
74	ESC-ES-232
75	ESC-ES-241
76	ESC-ES-251
77	ESC-ES-262
78	ESC-ES-271
79	ESC-ES-281
80	ESC-ES-292
81	ESC-ES-311
82	ESC-ES-312
83	ESC-ES-321
84	ESC-ES-332
85	ESC-ES-341
86	ESC-ES-351
87	ESC-ES-381
88	ESC-ES-412
89	ESC-ES-422
90	ESC-ES-432
91	ESC-ES-441
92	ESC-ES-511
93	ESC-ES-521

Code	Value
94	ESC-ES-541
95	ESC-SE-07
96	ESC-ES-442
101	ESC-NL-01
102	ESC-NL-02
103	ESC-NL-03
105	ESC-NL-05
106	ESC-NL-06
107	ESC-NL-07
108	ESC-NL-08
109	ESC-NL-09
110	ESC-NL-10
111	ESC-NL-11
112	ESC-NL-12
113	ESC-NL-13
114	ESC-NL-14
115	ESC-NL-15
116	ESC-NL-16
117	ESC-NL-17
118	ESC-NL-18
119	ESC-NL-19
120	ESC-NL-20
121	ESC-NL-21
122	ESC-NL-22
123	ESC-NL-23
124	ESC-NL-24
125	ESC-NL-25
126	ESC-NL-26
127	ESC-NL-27

Code	Value
128	ESC-NL-28
201	ESC-FR-01-LB
202	ESC-FR-02-LB
203	ESC-FR-03-LB
204	ESC-FR-04-LB
205	ESC-FR-05-LB
206	ESC-FR-06-LB
207	ESC-FR-07-SF
208	ESC-FR-08-SF
209	ESC-FR-09-SF
210	ESC-FR-10-SF
211	ESC-FR-11-SF
212	ESC-FR-12-SF
213	ESC-FR-13-SF
214	ESC-FR-14-SF
215	ESC-FR-15-SF
216	ESC-FR-16-SF
217	ESC-FR-17-SF
218	ESC-FR-18-SF
219	ESC-FR-19-SF
220	ESC-FR-20-SF
221	ESC-FR-21-SF
222	ESC-FR-22-LB
223	ESC-FR-23-LB
224	ESC-FR-27-LGVEE
225	ESC-FR-28-LGVEE
226	ESC-FR-29-LGVEE
227	ESC-FR-30-LGVEE
228	ESC-FR-31-LGVEE

Code	Value
229	ESC-FR-32-LGVEE
230	ESC-BE-02-L2FS
231	ESC-BE-03-L1LS
237	ESC-IT-06-RFI-1.0_L2_AVp_DD_01
239	ESC-PL-01-L1
240	ESC-PL-02-L1LS
241	ESC-PL-03-L2
242	ESC-PL-04-L2
243	ESC-NO-01
245	ESC-IT-09-RFI-2.0_L1_Cs_CHIASSO_01
246	ESC-IT-10-RFI-2.1_L2_Cs_NOPD_01
247	ESC-IT-11-RFI-2.0_L1_Cs_PTLU_01
248	ESC-BE-01-L1FS
249	ESC-BE-04-LGV3_4
250	ESC-DK-01-East
251	ESC-DK-02-West
252	ESC-AT-01
253	ESC-FR-24-AA
254	ESC-FR-25-AD
255	ESC-FR-26-AE
256	ESC-FR-33-SEA
257	ESC-FR-34-SEA
258	ESC-FR-35-BPL
259	ESC-FR-36-BPL
260	ESC-IT-12-RFI-2.0_L1_Cs_ISDO_CH_01

Code	Value
261	ESC-IT-13-RFI-2.0_L1_Cs_PTLU_CH_01
263	ESC-IT-15-RFI_2.1_L1_Cs_VENTIMIGLIA_FR_01
266	ESC-PL-05-L2
267	ESC-PL-06-L2
268	ESC-CZ-01
269	ESC-CZ-02
270	ESC-RO-01
271	ESC-DE-01-B2_L2
272	ESC-DE-02-B3_L2
273	ESC-NO-02
280	ESC-CH-01-L1LS
281	ESC-CH-02-L2
282	ESC-CH-03-L1LSL2
283	ESC-LU-01-RFN
284	ESC-LU-02-MSM
285	ESC-LU-03-IG
286	ESC-DE-03-B3_L1LS
287	ESC-DE-05-B3-L2
288	ESC-DE-08-B3-L2
289	ESC-IT-24-RFI_B2_L2AV_AF_01
290	ESC-IT-25-RFI_B2_L2AV_HR_01
291	ESC-IT-26-RFI_B3_L2s_HR_01
292	ESC-IT-27-RFI_B3_L2s_AF_01

Code	Value
293	ESC-IT-28-RFI_2.1_L1_Cs_VENTIMIGLIA_IT_01
294	ESC-IT-29-RFI_B3_L1LS_NAZIONALE_01
295	ESC-IT-30-RFI_B3_L1RI_NAZIONALE_01
296	ESC-IT-31-RFI_2.0_L1_Cs_ISDO_IT_01
297	ESC-IT-32-RFI_2.0_L1_Cs_PTLU_IT_01
298	ESC-SI-01

Flags

Applicability Flags:

Y/N/NYA

Validation

Dependencies:

A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:

Etcs System Compatibility Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: etcsSystemCompatibility (1.1.1.3.2.9, 1.2.1.1.1.9): The ETCS {$this} ({?thisLabel}), has a ETCS level type which makes the etcsSystemCompatibility parameter applicable. This error is due to {$this} not having a value for such a parameter.
Etcs System Compatibility Skos
Comment: ETCS requirements used for demonstrating technical compatibility.
Message: etcsSystemCompatibility (1.1.1.3.2.9, 1.2.1.1.1.9): The ETCS {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-system-compatibilities/ETCSSystemCompatibilities.
Etcs System Compatibility
Comment: ETCS requirements used for demonstrating technical compatibility.
Message: etcsSystemCompatibility (1.1.1.3.2.9, 1.2.1.1.1.9): The ETCS has a etcsSystemCompatibility value that must be an IRI. This error is due to the ETCS having a value that is not an IRI.

OPE TSI References

Part of RCC Algorithm:

true

Additional Information

General explanation:

The Values "Not defined" or "ESC-EU-0" should not be combined with other values.

For application in CCS Onboard:
The vehicles are considered compatible with the infrastructure for this parameter, if their parameter value matches any of the values declared on the trackside.

For application in CCS Trackside:
The Infrastructure Manager is responsible for defining the ESC type(s). All sections of the Union network which require the same set of checks for the demonstration of ESC shall have the same ESC type.

See: TSI CCS, Appendix A, Table A 1, 4.2.17 a.
The list of ESC Types is published and maintained by the European Union Agency for Railways in the technical document "ESC/RSC technical document, TD/011REC1028".
The Agency shall assess the checks unless they have been assessed by a NoBo as required in Table 6.3 row 10.
The assessment by the Agency shall be done within 2 months of receipt thereof, unless a longer period is agreed between the Agency and the Infrastructure Manager but not exceeding 4 months in total.
The technical document will be updated within 10 working days after positive assessment.

The ESC Types shall only be used when published with status "Valid" in the Agency Technical document referred above.

See also:
TSI CCS, Appendix A, Table A 1, 4.2.17 a.
https://www.era.europa.eu/system/files/2023-05/esc-rsc_technical_document_en.pdf
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

ETCS M_version OP

ETCS M_version according to the specification referenced in Appendix A-1, index [C], SRS 7.5.1.9.

IRI: *http://data.europa.eu/949/etcsMVersion*

Parameter of
ETCS

General Information

Number:
1.1.1.3.2.10
1.2.1.1.1.10

XML Name:
CPE_MVersion

Deadline:
12 months after publication of Article 7 Guide for OP tracks
1 January 2021

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Concept

Taxonomy Reference:
ETCS M Versions

Values :

Code	Value
00	Previous
10	1.0
11	1.1
20	2.0
21	2.1
22	2.2
23	2.3
30	3.0

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Etcs Mversion
Comment: ETCS_M version according to SRS 7.5.1.9
Message: etcsMVersion (1.1.1.3.2.10, 1.2.1.1.1.10): The ETCS has at most one ETCS_M version value and it must be an IRI. This error is due to the ETCS having more than one value or having a value that is not an IRI.
Etcs Mversion Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 contains 1. Related to rule for etcsLevelType
Message: etcsMVersion (1.1.1.3.2.10, 1.2.1.1.1.10): The ETCS {$this} ({?thisLabel}), has a ETCS level type '1' which makes the etcsMVersion parameter applicable. This error is due to {$this} not having a value for such a parameter.
Etcs Mversion Skos
Comment: ETCS_M version according to SRS 7.5.1.9
Message: Indication of the etcsMVersion (1.1.1.3.2.10, 1.1.1.3.2.10):): The ETCS {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-m-versions/ETCSMVersions.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
See: TSI CCS (Subset-026, Chapter 7, 7.5.1.79 M_VERSION)

See also:
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Safe consist length information from on-board necessary for access the line and SIL [OP]

Indication whether safe consist train length information from on-board is required to access the line for safety reasons and the required safety integrity level.

IRI: *http://data.europa.eu/949/safeConsistLengthInformationNecessary*

Parameter of

Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.3.2.11
1.2.1.1.1.11

XML Name:
CPE_SafeLenghtInf

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Safe Consistent Length required with SIL

Values :

Code	Value
00	N
02	Y+2
04	Y+4

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Safe Consist Length Information Necessary Skos
Comment: Indication whether safe consist train length information from on-board is required to access the line for safety reasons and the required safety integrity level.
Message: safeConsistLengthInformationNecessary (1.1.1.3.2.11, 1.2.1.1.1.11): The ETCS or subset {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/safe-consist-length/SafeConsistLengthNecessary.
Safe Consist Length Information Necessary
Comment: Indication whether safe consist train length information from on-board is required to access the line for safety reasons and the required safety integrity level.
Message: safeConsistLengthInformationNecessary (1.1.1.3.2.11, 1.2.1.1.1.11): The ETCS or subset must have a single Safe consist length information from on-board necessary for access the line and SIL value that is an IRI. This error is due to having more than one value or having a value that is not an IRI.
Safe Consist Length Information Necessary Applicability
Comment: Only applicable when parameter 1.1.1.3.2.1 is applicable (its Applicable: 'Y').
Message: safeConsistLengthInformationNecessary (1.1.1.3.2.11, 1.2.1.1.1.11):The ETCS or subset {$this} ({?thisLabel}), has an 'ETCS Level Type' defined which makes the safeConsistLengthInformationNecessary parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

See also:
TSI CCS (Subset-026, Chapter 7, 7.5.1.112.1 and P10)
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Is the ETCS trackside engineered to transmit Track Conditions DP

If the trackside does not provide Track Conditions, the driver will need to be informed about such conditions via alternative methods.
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/etcsTransmitsTrackConditions*

Parameter of
ETCS

General Information

Number:

1.1.1.3.2.12
1.2.1.1.1.12

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Etcs Transmits Track Conditions
Comment: If the trackside does not provide Track Conditions, the driver will need to be informed about such conditions via alternative methods.
Message: etcsTransmitsTrackConditions (1.1.1.3.2.12, 1.2.1.1.1.12): Each Track may define the existence of ETCS trackside engineered to transmit Track Conditions. This error is due to having more than one value or having a value that is not Y/N (boolean).
Etcs Transmits Track Conditions Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: etcsTransmitsTrackConditions (1.1.1.3.2.12.1, 1.2.1.1.1.12.1): The ETCS {$this} ({?thisLabel}), has a ETCS level type which makes the etcsTransmitsTrackConditions parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
According to the specification referenced in Appendix A-1, index [C]
If the trackside does not provide Track Conditions, the driver will need to be informed about such conditions via alternative methods.
In ETCS level NTC and level 0 track conditions are not managed (at least in Baseline 2)

See also:
TSI CCS (Subset-026, Chapter 5, section 5.18)
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Track conditions which can be transmitted OP

Transmittable track conditions by the CCSSubsystem, according to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/etcsTransmittedTrackConditions*

Parameter of

ETCS

General Information

Number:
1.1.1.3.2.12.1
1.2.1.1.1.12.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Track Conditions transmitted to the Onboard (Subset-026, version 4.0 - 5.8.12)

Values :

Code	Value	Explanation
5-8-12-a	5.8.12 a	Powerless section with pantograph to be lowered
5-8-12-b	5.8.12 b	Powerless section with main power switch to be switched off
5-8-12-c	5.8.12 c	Non-stopping area
5-8-12-d	5.8.12 d	Radio hole
5-8-12-e	5.8.12 e	Air tightness area
5-8-12-f	5.8.12 f	Inhibition of a defined type of brake
5-8-12-g	5.8.12 g	Tunnel stopping area
5-8-12-h	5.8.12 h	Sound horn
5-8-12-i	5.8.12 i	Change of traction system
bigMetalMasses	Big Metal Masses	Big metal masses, ignore on-board integrity check alarm of balise transmission
switchOffEddyCurrentBrakeForEmergencyBrake	Switch Off Eddy Current Brake For Emergency Brake	defines a switch Off Eddy Current Emergency Brake sections
switchOffEddyCurrentBrakeForServiceBrake	Switch Off Eddy Current Brake For Service Brake	defines a switch Off Eddy Current Brake sections
switchOffMagneticShoeBrake	Switch Off Magnetic Shoe Brake	defines a switch Off Magnetic Shoe Brake sections
switchOffRegenerativeBrake	Switch Off Regenerative Brake	defines a switch Off Regenerative Brake sections

Flags

Applicability Flags:

Y/N/NYA

Validation

Dependencies:

Mandatory when ETCS is present (a value is provided on 1.1.1.3.2.1) and value of 1.1.1.3.2.12 is True.

Validation Rules:

Etcs Transmitted Track Conditions Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: etcsTransmittedTrackConditions (1.1.1.3.2.12.1, 1.2.1.1.1.12.1): The ETCS {$this} ({? thisLabel}), has a ETCS level type which makes the etcsTransmittedTrackConditions parameter applicable. This error is due to {$this} not having a value for such a parameter.

Etcs Transmitted Track Conditions Skos
Comment: Transmittable track conditions by the CCSSubsystem, as per CCS TSI.
Message: etcsTransmittedTrackConditions (1.1.1.3.2.12.1, 1.2.1.1.1.12.1): The ETCS {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-transmitted-tcs/TransmittedTrackConditions.
Etcs Transmitted Track Conditions
Comment: Transmittable track conditions by the CCSSubsystem, as per CCS TSI.
Message: etcsTransmittedTrackConditions (1.1.1.3.2.12.1, 1.2.1.1.1.12.1): The ETCS has at most one etcsTransmittedTrackConditions value and it must be an IRI. This error is due to the ETCS having more than one value or having a value that is not an IRI.

Additional Information

See also:
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632
TSI CCS (Subset-026, Chapter 5, section 5.18.1.1)

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

ETCS trackside implements level crossing procedure or an equivalent solution DP

If the trackside does not implement any solution to cover non-protected LXs (which are normally protected by means of a technical system), then drivers will be required to comply with instructions received from other sources

IRI: *http://data.europa.eu/949/etcsImplementsLevelCrossingProcedure*

Parameter of
ETCS
Subset with common characteristics

General Information

Number:
1.1.1.3.2.13
1.2.1.1.1.13

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Applicable and mandatory when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Etcs Implements Level Crossing Procedure Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: etcsImplementsLevelCrossingProcedure (1.1.1.3.2.13, 1.2.1.1.1.13):The ETCS or subset {$this} ({?thisLabel}), has an 'ETCS Level Type' defined that makes the etcsImplementsLevelCrossingProcedure parameter applicable. This error is due to {$this} not having a value for such a parameter.
Etcs Implements Level Crossing Procedure
Comment: If the trackside does not implement any solution to cover defective LXs (which are normally protected by means of a technical system), then drivers will be required to comply with instructions received from other sources.
Message: etcsImplementsLevelCrossingProcedure (1.1.1.3.2.13, 1.2.1.1.1.13): Each ETCS or subset may define the existence of level crossing procedure or an equivalent solution for ETCS trackside. This error is due to having more than one value or having a value that is not Y/N (boolean).

Additional Information

See also:
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632
TSI CCS (Subset-026, Chapter 5, section 5.16)

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Cant Deficiency used for the basic SSP OP

Essential information for railway undertakings with a worse (lower) tolerated cant deficiency than those for which the ETCS trackside provides SSP (Static Speed Profiles) in conjunction with parameter "Other Cant Deficiency train categories for which the ETCS trackside is configured to provide SSP".

IRI: *http://data.europa.eu/949/cantDeficiencyBasicSSP*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.14
1.2.1.1.1.14

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation

Concept

Unit of Measure:
Millimetre

Taxonomy Reference:
Cant Deficiencies - Static Speed Profile Categories (Basic and Specific, type 1)

Values :

Code	Value
80	80
100	100
130	130
150	150
165	165
180	180
210	210
225	225
245	245
275	275
300	300

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Cant Deficiency Basic Ssp
Comment: Essential information for drivers of trains with a worse (lower) tolerated cant deficiency than those for which the ETCS trackside provides SSP (Static Speed Profiles) in conjunction with parameter "Other Cant Deficiency train categories for which the ETCS trackside is configured to provide SSP".
Message: cantDeficiencyBasicSSP (1.1.1.3.2.14, 1.2.1.1.1.14): The ETCS or subset must have a cant deficiency used for the basis SSP value that is an IRI.
Cant Deficiency Basic Sspapplicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: cantDeficiencyBasicSSP (1.1.1.3.2.14, 1.2.1.1.1.14):The ETCS or subset {$this} ({? thisLabel}), has a 'ETCS Level Type' defined which makes the cantDeficiencyBasicSSP parameter applicable. This error is due to {$this} not having a value for such a parameter.

Cant Deficiency Basic Sspskos
Comment: Essential information for drivers of trains with a worse (lower) tolerated cant deficiency than those for which the ETCS trackside provides SSP (Static Speed Profiles) in conjunction with parameter "Other Cant Deficiency train categories for which the ETCS trackside is configured to provide SSP".
Message: cantDeficiencyBasicSSP (1.1.1.3.2.14, 1.2.1.1.1.14): The ETCS {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/cant-deficiencies/CantDeficiencies.

Additional Information

General explanation:
The values indicated in millimetres correspond to tracks with UIC gauge. For tracks with a gauge different from UIC, the values provided here are the equivalent ones for UIC gauge, as the actual physical cant deficiency values differ. Please refer to parameter 1.1.1.1.4.2 for more details.
Subset-026 (3.11.3.2.1.1) definition:
a) The "Cant Deficiency" SSP categories: the cant deficiency value assigned to one category shall define the maximum speed, determined by suspension design, at which a particular train can traverse a curve and thus can be used to set a specific speed limit in a curve with regards to this category.

See also:
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Other Cant Deficiency train categories for which the ETCS trackside is configured to provide SSP OP

Essential information for drivers of trains with a worse (lower) tolerated cant deficiency than those for which the ETCS trackside provides SSP (Static Speed Profiles) in conjunction with parameter "Cant Deficiency used for the basic SSP".
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/otherCantDeficiencyBasicSSP*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.14.1
1.2.1.1.1.14.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Concept

Unit of Measure:
Millimetre

Taxonomy Reference:
Cant Deficiencies - Static Speed Profile Categories (Basic and Specific, type 1)

Values :

Code	Value
80	80
100	100
130	130
150	150
165	165
180	180
210	210
225	225
245	245
275	275
300	300

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Other Cant Deficiency Basic Ssp
Comment: Essential information for drivers of trains with a worse (lower) tolerated cant deficiency than those for which the ETCS trackside provides SSP (Static Speed Profiles) in conjunction with parameter 'Cant Deficiency used for the basic SSP'.
Message: otherCantDeficiencyBasicSSP (1.1.1.3.2.14.1, 1.2.1.1.1.14.1): The ETCS or subset must have other Cant Deficiency train categories basic SSP value that is an IRI. This error is due to having more than one value or having a value that is not an IRI
Other Cant Deficiency Basic Sspskos
Comment: Essential information for drivers of trains with a worse (lower) tolerated cant deficiency than those for which the ETCS trackside provides SSP (Static Speed Profiles) in conjunction with parameter 'Cant Deficiency used for the basic SSP'.
Message: otherCantDeficiencyBasicSSP (1.1.1.3.2.14.1, 1.2.1.1.1.14.1): The ETCS or subset {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/cant-deficiencies/CantDeficiencies.
Other Cant Deficiency Basic Sspapplicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: otherCantDeficiencyBasicSSP (1.1.1.3.2.14.1, 1.2.1.1.1.14.1):The ETCS or subset {$this} ({?thisLabel}), has an 'ETCS Level Type' defined which makes the otherCantDeficiencyBasicSSP parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:

The values indicated in millimetres correspond to tracks with UIC gauge. For tracks with a gauge different from UIC, the values provided here are the equivalent ones for UIC gauge, as the actual physical cant deficiency values differ. Please refer to parameter 1.1.1.1.4.2 for more details.

Subset-026 (3.11.3.2.1.1) definition: b) The "other specific" SSP categories: it groups all other specific SSP categories corresponding to the other international train categories.

See also:

https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632

References:

http://data.europa.eu/eli/reg_impl/2023/1695/oj

Reasons for which an ETCS Radio Block Center can reject a train OP

List of cases subject to system design choices made by the infrastructure manager according to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/reasonsEtcsRadioBlockCenterReject*

Parameter of

ETCS

General Information

Number:

1.1.1.3.2.15
1.2.1.1.1.15

Deadline:

12 months after publication of Article 7 Guide

Belongs to parameters group

TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation

Concept

Taxonomy Reference:

ETCS Reasons RBC can reject a train

Values :

Code	Value
00	N/A - no usage of Message 40 (Train rejected)
01	Invalid ETCS-key
02	Non-matching ETCS-ID
03	Incompatible baseline

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Reasons Etcs Radio Block Center Reject
Comment: List of cases subject to system design choices made by the infrastructure manager according to the specification referenced in TSI CCS.
Message: reasonsEtcsRadioBlockCenterReject (1.1.1.3.2.15, 1.2.1.1.1.15): The ETCS or subset must have a single reasons for which an ETCS Radio Block Center can reject a train value that is an IRI. This error is due to having more than one value or having a value that is not an IRI.
Reasons Etcs Radio Block Center Reject Skos
Comment: List of cases subject to system design choices made by the infrastructure manager according to the specification referenced in TSI CCS.
Message: reasonsEtcsRadioBlockCenterReject (1.1.1.3.2.15, 1.2.1.1.1.15): The ETCS or subset {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-rbc-reject-reasons/ETCSRBCRejectionReasons.

Additional Information

General explanation:
1. Distinguish between mandatory and optional: decision was only to record the mandatory ones, but optional reasons can be added.
2. Providing the non-implemented CR-solution which have been accepted by IM, after check/approval with RU's, is also allowed.

See also:
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

ETCS National Values DP OP

General Information

Number:
1.1.1.3.2.16
1.2.1.1.1.16

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Related parameters
D_NVROLL (1.1.1.3.2.16.1 | 1.2.1.1.1.16.1)
Q_NVEMRRLS (1.1.1.3.2.16.2 | 1.2.1.1.1.16.2)
V_NVALLOWOVTRP (1.1.1.3.2.16.3 | 1.2.1.1.1.16.3)
V_NVSUPOVTRP (1.1.1.3.2.16.4 | 1.2.1.1.1.16.4)
D_NVOVTRP (1.1.1.3.2.16.5 | 1.2.1.1.1.16.5)
T_NVOVTRP (1.1.1.3.2.16.6 | 1.2.1.1.1.16.6)
D_NVPOTRP (1.1.1.3.2.16.7 | 1.2.1.1.1.16.7)
T_NVCONTACT (1.1.1.3.2.16.8 | 1.2.1.1.1.16.8)
M_NVCONTACT (1.1.1.3.2.16.9 | 1.2.1.1.1.16.9)
M_NVDERUN (1.1.1.3.2.16.10 | 1.2.1.1.1.16.10)
Q_NVDRIVER_ADHES (1.1.1.3.2.16.11 | 1.2.1.1.1.16.11)
Q_NVSBTSMPERM (1.1.1.3.2.16.12 | 1.2.1.1.1.16.12)
National Values used for the brake model (1.1.1.3.2.16.13 | 1.2.1.1.1.16.13)

D_NVROLL DP

Parameter used by the ETCS on-board to supervise the distance allowed to be travelled under the roll-away protection and the reverse movement protection, in metres
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/dNvroll*

Parameter of
ETCS
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.1
1.2.1.1.1.16.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Format:
A number of form at NNNNNN.N, from 0 to 327670

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Dnvroll Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: dNvroll (1.1.1.3.2.16.7, 1.2.1.1.1.16.7):The ETCS or subset {$this} ({? thisLabel}), has an 'ETCS Level Type' defined which makes the dNvroll parameter applicable. This error is due to {$this} not having a value for such a parameter.
Dnvroll
Comment: Parameter used by the ETCS on-board to supervise the distance allowed to be travelled under the roll-away protection and the reverse movement protection, in metres.
Message: dNvroll (1.1.1.3.2.16.1, 1.2.1.1.1.16.1): Each ETCS or subset must define the parameter used by the ETCS on-board to supervise the distance allowed to be travelled under the roll-away protection and the reverse movement protection expressed in metres. This error is due to having more than one value or having a value that is not a double (real) number.

Additional Information

General explanation:
Precision: [NNNNNN.N], with N a decimal number (0 9).

See also:
TSI CCS (Subset 26, chapter 7. 7.5.1.17 D_NVROLL)
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Q_NVEMRRLS OP

Qualifier defining whether the application of the emergency brake for reasons other than a trip can be revoked as soon as the conditions for it have disappeared or after the train has come to a complete standstill.
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/qNvemrrls*

Parameter of
ETCS
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.2
1.2.1.1.1.16.2

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Emergency Brake Release Command Qualifiers

Values :

Code	Value	Also Known As
0	Revoke emergency brake command at standstill	0
1	Revoke emergency brake command when permitted speed supervision limit is no longer exceeded	1

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Qnvemrrls Skos
Comment: Qualifier defining whether the application of the emergency brake for reasons other than a trip can be revoked as soon as the conditions for it have disappeared or after the train has come to a complete standstill.
Message: qNvemrrls (1.1.1.3.2.16.2, 1.2.1.1.1.16.2): The ETCS or subset {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/ebr-qualifier/EBReleaseQualifier.
Qnvemrrls
Comment: Qualifier defining whether the application of the emergency brake for reasons other than a trip can be revoked as soon as the conditions for it have disappeared or after the train has come to a complete standstill.
Message: qNvemrrls (1.1.1.3.2.16.2, 1.2.1.1.1.16.2): The ETCS or subset must have a single Q_NVEMRRLS value that is an IRI. This error is due to having more than one value or having a value that is not an IRI.

Qnvemrrls Applicability
Comment: Only applicable when parameter 1.1.1.3.2.1 is applicable (its Applicable: 'Y').
Message: qNvemrrls (1.1.1.3.2.16.2, 1.2.1.1.1.16.2):The ETCS or subset {$this} ({?thisLabel}), has an 'ETCS Level Type' defined which makes the qNvemrrls parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
According to the specification referenced in Appendix A-1, index [C] - TSI CCS (Subset-026, chapter 7, 7.5.1.123 Q_NVEMRRLS)

See also:
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

V_NVALLOWOVTRP DP

Speed limit allowing the driver to select the override function in km/h
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/vNvallowovtrp*

Parameter of
ETCS
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.3
1.2.1.1.1.16.3

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Format:
NNF, with N a decimal number (0 9), NNF must be divisible by 5, so F=(0|5), max. `600`

Unit of Measure:
Kilometre per Hour

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Vnvallowovtrp
Comment: Speed limit allowing the driver to select the “override” function in km/h.
Message: vNvallowovtrp (1.1.1.3.2.16.3, 1.2.1.1.1.16.3): The ETCS or subset defines a speed limit allowing the driver to select the “override” function (V_NVALLOWOVTRP). This error is due to having more than one value, having a value that is not an integer or having an integer that does not follow the pattern [NNF], with N a decimal number (0÷9), F=(0|5), max. `600`.
Vnvallowovtrp Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: vNvallowovtrp (1.1.1.3.2.16.3, 1.2.1.1.1.16.3):The ETCS or subset {$this} ({?thisLabel}), has an 'ETCS Level Type' defined which makes the vNvallowovtrp parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
Format: [NNF], with N a decimal number (0÷9), [NNF] must be divisible by 5, so F= (0|5), max. `600`.

See also:
TSI CCS (Subset-026, Chapter 7. 7.5.1.161)
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

V_NVSUPOVTRP DP

Override speed limit to be supervised when the "override" function is active in km/h.
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/vNvsupovtrp*

Parameter of

ETCS
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.4
1.2.1.1.1.16.4

Deadline:
12 months after publication of Article 7 Guide for OP tracks
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Format:
NNF, with N a decimal number (0 9), NNF must be divisible by 5, so F=(0|5), max. `600`

Unit of Measure:
Kilometre per Hour

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Vnvsupovtrp Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: vNvsupovtrp (1.1.1.3.2.16.4, 1.2.1.1.1.16.4):The ETCS or subset {$this} ({?thisLabel}), has an 'ETCS Level Type' defined which makes the vNvsupovtrp parameter applicable. This error is due to {$this} not having a value for such a parameter.
Vnvsupovtrp
Comment: Override speed limit to be supervised when the “override” function is active in km/h.
Message: vNvsupovtrp (1.1.1.3.2.16.4, 1.2.1.1.1.16.4): The ETCS or subset defines a override speed limit to be supervised when the “override” function is active (V_NVSUPOVTRP). This error is due to having more than one value, having a value that is not an integer or having an integer that does not follow the pattern [NNF], with N a decimal number (0÷9), F=(0|5), max. `600`.

Additional Information

General explanation:
Format: [NNF], with N a decimal number (0÷9), [NNF] is divisible by 5 so F=(0|5), max. `600`.

See also:
TSI CCS (Subset-026, chapter 7. 7.5.1.163 V_NVSUPOVTRP)
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

D_NVOVTRP DP

Maximum distance for overriding the train trip in metres, according to the specification referenced in Appendix A-1, index [C].

IRI: *http://data.europa.eu/949/dNvovtrp*

Parameter of

ETCS

Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.5
1.2.1.1.1.16.5

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Format:
NNNNNNN.N whereby the last digit is only used when Q_SCALE = 10 CM

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Dnvovtrp Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present)
Message: dNvovtrp (1.1.1.3.2.16.5, 1.2.1.1.1.16.5):The ETCS or subset {$this} ({? thisLabel}), has an 'ETCS Level Type' defined which makes the dNvovtrp parameter applicable. This error is due to {$this} not having a value for such a parameter.
Dnvovtrp
Comment: Maximum distance for overriding the train trip in metres.
Message: dNvovtrp (1.1.1.3.2.16.5, 1.2.1.1.1.16.5): Each ETCS or subset must define the maximum distance for overriding the train trip expressed in metres. This error is due to having maximum distance for overriding the train trip value that is not a double (real) number.

Additional Information

General explanation:
Precision: the value must be expressed in meter.

Depending on the chosen Q_SCALE, the maximal value will be: +327670 M, +32767 M or +3276.7 M.

As in TSI CCS Subset 26, chapter 7. 7.5.1.15 D_NVOVTRP.

See also:
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

T_NVOVTRP DP

Maximum time for overriding the train trip in seconds.
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/tNvovtrp*

Parameter of

ETCS
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.6
1.2.1.1.1.16.6

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Format:
NNN, with N as a digit from 0 to 9. Value NNN = 255 means ∞ (infinity), so values cannot be higher.

Unit of Measure:
Second

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Tnvovtrp Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: tNvovtrp (1.1.1.3.2.16.6, 1.2.1.1.1.16.6):The ETCS or subset {$this} ({? thisLabel}), has an 'ETCS Level Type' defined which makes the tNvovtrp parameter applicable. This error is due to {$this} not having a value for such a parameter.
Tnvovtrp
Comment: Maximum time for overriding the train trip in seconds.
Message: tNvovtrp (1.1.1.3.2.16.6 , 1.2.1.1.1.16.6): The ETCS or subset defines a T_NVOVTRP. This error is due to having more than one value, having a value that is not an integer or having an integer that does not follow the pattern [NNN].

Additional Information

General explanation:
Precision: [NNN], with N a decimal number (0÷9)

See also:
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632
TSI CCS (Subset 26, chapter 7. 7.5.1.149 T_NVOVTRP)

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

D_NVPOTRP DP

Maximum distance for reversing in Post Trip mode in metres, according to the specification referenced in Appendix A-1, index [C].

IRI: *http://data.europa.eu/949/dNvpotrp*

Parameter of
ETCS
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.7
1.2.1.1.1.16.7

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Format:
NNNNNNN.N whereby the last digit is only used when Q_SCALE = 10 CM

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Dnvpotrp Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: dNvpotrp (1.1.1.3.2.16.7, 1.2.1.1.1.16.7):The ETCS or subset {$this} ({? thisLabel}), has an 'ETCS Level Type' defined which makes the dNvpotrp parameter applicable. This error is due to {$this} not having a value for such a parameter.

Dnvpotrp
Comment: Maximum distance for reversing in Post Trip mode in metres
Message: dNvpotrp (1.1.1.3.2.16.7, 1.2.1.1.1.16.7): Each ETCS must define the maximum distance for reversing in Post Trip mode in metres. This error is due to having maximum distance for reversing in Post Trip mode value that is not a double (real) number.

Additional Information

General explanation:
Precision: the value must be expressed in meter.
Depending on the chosen Q_SCALE, the maximal value will be: +327670 M, +32767 M or +3276.7 M.

See also:
TSI CCS (Subset 26, chapter 7. 7.5.1.16 D_NVPOTRP)
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

T_NVCONTACT DP

Maximum time without a safe message from Radio Block Center before train reacts in seconds.
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/tNvcontact*

Parameter of

ETCS
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.8
1.2.1.1.1.16.8

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Format:
NNN, with N as a digit from 0 to 9. Value NNN = 255 means ∞ (infinity), so values cannot be higher.

Unit of Measure:
Second

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Tnvcontact
Comment: Maximum time without a safe message from Radio Block Center before train reacts in seconds.
Message: tNvcontact (1.1.1.3.2.16.8, 1.2.1.1.1.16.8): The ETCS or subset defines a maximum time without a safe message from Radio Block Center. This error is due to having more than one value, having a value that is not an integer or having an integer that does not follow the pattern [NNN].
Tnvcontact Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: tNvcontact (1.1.1.3.2.16.8, 1.2.1.1.1.16.8):The ETCS or subset {$this} ({? thisLabel}), has an 'ETCS Level Type' defined which makes the tNvcontact parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
Precision: [NNN], with N a decimal number (0÷9), NNN = 255 means ∞ seconds, so values cannot be higher.

See also:
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

M_NVCONTACT OP

On-Board system reaction when T_NVCONTACT expires
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/mNvcontact*

Parameter of
ETCS
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.9
1.2.1.1.1.16.9

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Data Presentation
Concept

Taxonomy Reference:
ETCS Reactions after expired T_NVCONTACT

Values :

Code	Value
00	Train Trip
01	Apply Service Brake
10	No reaction
11	Reserved spare

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Mnvcontact Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: mNvcontact (1.1.1.3.2.16.9, 1.2.1.1.1.16.9):The ETCS or subset {$this} ({?thisLabel}), has an 'ETCS Level Type' defined which makes the mNvcontact parameter applicable. This error is due to {$this} not having a value for such a parameter.
Mnvcontact Skos
Comment: On-Board system reaction when T_NVCONTACT expires.
Message: mNvcontact (1.1.1.3.2.16.9, 1.2.1.1.1.16.9): The ETCS or subset {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-reactions-contact/ETCSReactionsNVContact.
Mnvcontact
Comment: On-Board system reaction when T_NVCONTACT expires.
Message: mNvcontact (1.1.1.3.2.16.9, 1.2.1.1.1.16.9): The ETCS or subset may have an M_NVCONTACT value that is an IRI. This error is due to having more than one value or having a value that is not an IRI

Additional Information

See also:
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632
TSI CCS (Subset-026, chapter 7. 7.5.1.74 M_NVCONTACT)

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

M_NVDERUN DP

Entry of Driver ID permitted while running According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/mNvderun*

Parameter of

ETCS
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.10
1.2.1.1.1.16.10

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Mnvderun
Comment: Entry of Driver ID permitted while running.
Message: mNvderun (1.1.1.3.2.16.10, 1.2.1.1.1.16.10): Each ETCS or subset may define the M_NVDERUN value. This error is due to having more than one value or having a value that is not Y/N (boolean).
Mnvderun Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: mNvderun (1.1.1.3.2.16.10, 1.2.1.1.1.16.10):The ETCS or subset {$this} ({?thisLabel}), has an 'ETCS Level Type' defined which makes the mNvderun parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

See also:
TSI CCS (Subset 26, chapter 7. 7.5.1.75 M_NVDERUN)
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632

References:

http://data.europa.eu/eli/reg_impl/2023/1695/oj

Q_NVDRIVER_ADHES OP

Qualifier determining whether the driver is allowed to modify the adhesion factor used by the ETCS on-board to calculate the braking curves.
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/qNvdriverAdhes*

Parameter of

ETCS
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.11
1.2.1.1.1.16.11

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Driver allowed to change adhesion factor Qualifiers

Values :

Code	Value	Also Known As
0	Not allowed	0
1	Allowed	1

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:

Qnvdriver Adhes
Comment: Qualifier determining whether the driver is allowed to modify the adhesion factor used by the ETCS on-board to calculate the braking curves.
Message: qNvdriverAdhes (1.1.1.3.2.16.11, 1.2.1.1.1.16.11): The ETCS or subset must have a single Q_NVDRIVER_ADHES value that is an IRI. This error is due to having more than one value or having a value that is not an IRI.
Qnvdriver Adhes Skos
Comment: Qualifier determining whether the driver is allowed to modify the adhesion factor used by the ETCS on-board to calculate the braking curves.
Message: qNvdriverAdhes (1.1.1.3.2.16.11, 1.2.1.1.1.16.11): The ETCS or subset {$this} (label {? label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/adhf-qualifier/AdhesionFactorChange.
Qnvdriver Adhes Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: qNvdriverAdhes (1.1.1.3.2.16.11, 1.2.1.1.1.16.11):The ETCS or subset {$this} ({? thisLabel}), has an 'ETCS Level Type' defined which makes the qNvdriverAdhes parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

See also:
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632
TSI CCS (Subset 26, chapter 7. 7.5.1.122 Q_NVDRIVER_ADHES)

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Q_NVSBTSMPERM DP

Permission to use service brake in target speed monitoring

IRI: *http://data.europa.eu/949/qNvsbtsmperm*

Parameter of
ETCS
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.12
1.2.1.1.1.16.12

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:

Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Qnvsbtsmperm Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: qNvsbtsmperm (1.1.1.3.2.16.12, 1.2.1.1.1.16.12):The ETCS or subset {$this} ({?thisLabel}), has an 'ETCS Level Type' defined which makes the qNvsbtsmperm parameter applicable. This error is due to {$this} not having a value for such a parameter.
Qnvsbtsmperm
Comment: Permission to use service brake in target speed monitoring.
Message: qNvsbtsmperm (1.1.1.3.2.16.12, 1.2.1.1.1.16.12): Each ETCS or subset may define the Q_NVSBTSMPERM value. This error is due to having more than one value or having a value that is not Y/N (boolean).

Additional Information

See also:
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632
TSI CCS (Subset-026, chapter 7. 7.5.1.124 Q_NVSBTSMPERM)

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

National Values used for the brake model DP

Set of parameters for adapting the braking curves calculated by the ETCS on-board system to match accuracy, performance and safety margins imposed by the infrastructure manager.
It copies the content of Packet 3 or of Packet 203 as defined in the specification referenced in Appendix A-1, index [C].

IRI: *http://data.europa.eu/949/nationalValuesBrakeModel*

Parameter of

ETCS
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.13
1.2.1.1.1.16.13

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
National Values Brake Model
Comment: Set of parameters for adapting the braking curves calculated by the ETCS on-board system to match accuracy, performance and safety margins imposed by the infrastructure manager.
Message: nationalValuesBrakeModel (1.1.1.3.2.16.13, 1.2.1.1.1.16.13): The ETCS or subset has a National Value used for the brake model that must be a string and follow the format [±NNNN.NNN]. The error is due to having more than one value, having a vaalue that is not a string, or it is due to the value not following the pattern.
National Values Brake Model Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: nationalValuesBrakeModel (1.1.1.3.2.16.13, 1.2.1.1.1.16.13):The ETCS or subset {$this} ({?thisLabel}), has an 'ETCS Level Type' defined which makes the nationalValuesBrakeModel parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
Non-harmonizable character string: [Contents of P3/P203] (TSI CCS, Annex I, Appendix A, Table A.2 - Subset-026)

See also:
https://www.era.europa.eu/domains/technical-specifications-interoperability/control-command-and-signalling-tsi_en#oe-content-paragraph-1632

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

ID of ERTMS/ETCS Radio Block Center DP

Unique RBC identification (NID_C+NID_RBC) as defined in the specification referenced in Appendix A-1, index [C] (TSI CCS).

IRI: *http://data.europa.eu/949/rbcID*

Parameter of
Radio Block Center

General Information

Number:

1.1.1.3.2.17
1.2.1.1.1.17

XML Name:
CEN_IDRBC

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)
Identifier

Data Format

Data Presentation
String

Format:
NNNN NNNN with N a decimal number (0÷9)

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Rbc Idfuture Required

Message: This property is not yet required but will be 12 months after publication of Article 7 Guide.
Rbc Id
Comment: Unique RBC identification (NID_C+NID_RBC) as defined in the specification referenced in TSI CCS.
Message: rbcID (1.1.1.3.2.17, 1.2.1.1.1.17): The radio block center id must be represented as a String and follow the pattern [NNNN NNNN]. This error may be due to having a value that is not a string or that does not follow the pattern.

OPE TSI References

Appendix D2 Index
3.4.7

Additional Information

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Phone number of ERTMS/ETCS Radio Block Center DP

Unique RBC calling number (NID_RADIO) as defined in the specification referenced in Appendix A-1, index [C].

IRI: *http://data.europa.eu/949/rbcPhone*

Parameter of

Radio Block Center

General Information

Number:
1.1.1.3.2.17
1.2.1.1.1.17

XML Name:
CEN_PhoneNumbRBC

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
String

Format:
NNNN NNNN NNNN NNNN with N a decimal number (0-9)

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Rbc Phone
Comment: Unique RBC calling number (NID_RADIO) as defined in the specification referenced in TSI CCS.
Message: rbcPhone (1.1.1.3.2.17, 1.2.1.1.1.17): The radio block center phone must be represented as a String and follow the pattern [NNNN NNNN NNNN NNNN].This error may be due to having a value that is not a string or that does not follow the pattern

OPE TSI References

Appendix D2 Index
3.4.7

Additional Information

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Big Metal Mass DP

Indication of existence of metal mass in the vicinity of the location, susceptible of perturbating the reading of balises by the on-board system.

IRI: *http://data.europa.eu/949/bigMetalMass*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.18
1.2.1.1.1.18

XML Name:
CEN_BigMetalMass

Deadline:
12 months after publication of Article 7 Guide for OP tracks
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Boolean

Format:
Y/N

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Big Metal Mass Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: bigMetalMass (1.1.1.3.2.18, 1.2.1.1.1.18):The track {$this} ({?label}), has an 'ETCS Level Type' defined which makes the bigMetalMass parameter applicable. This error is due to {$this} not having a value for such a parameter.
Big Metal Mass
Comment: Indication of existence of metal mass in the vicinity of the location, susceptible of perturbating the reading of balises by the on-board system.
Message: bigMetalMass (1.1.1.3.2.18, 1.2.1.1.1.18): Each track may define the existence of a metal mass in the vicinity of the location. This error is due to having more than one indication of existence of big metal mass value or having an indication of big metal mass value that is not Y/N (boolean).

OPE TSI References

Appendix D2 Index
3.4.10

Additional Information

General explanation:
According to the specification referenced in TSI CCS.

References:

http://data.europa.eu/eli/reg_impl/2023/1695/oj

TSI compliant radio (RMR) DP OP

General Information

Number:
1.1.1.3.3
1.2.1.1.2

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
GSM-R version (1.1.1.3.3.1 | 1.2.1.1.2.1)
Number of active GSM-R mobiles (EDOR) or simultaneous communication session on board for ETCS level 2 needed to perform radio block centre handovers without having an operational disruption (1.1.1.3.3.2 | 1.2.1.1.2.2)
Optional GSM-R functions (1.1.1.3.3.3 | 1.2.1.1.2.3)
Additional information on network characteristics (1.1.1.3.3.3.1 | 1.2.1.1.2.3.1)
GPRS for ETCS (1.1.1.3.3.3.2 | 1.2.1.1.2.3.2)
Area of implementation of GPRS (1.1.1.3.3.3.3 | 1.2.1.1.2.3.3)
GSM-R use of group 555 (1.1.1.3.3.4 | 1.2.1.1.2.4)
GSM-R networks covered by a roaming agreement (1.1.1.3.3.5 | 1.2.1.1.2.5)
Existence of GSM-R roaming to public networks (1.1.1.3.3.6 | 1.2.1.1.2.6)
Details on GSM-R roaming to public networks (1.1.1.3.3.7 | 1.2.1.1.2.7)
No GSMR coverage (1.1.1.3.3.8 | 1.2.1.1.2.8)
Radio system compatibility voice (1.1.1.3.3.9 | 1.2.1.1.2.9)
Radio system compatibility data (1.1.1.3.3.10 | 1.2.1.1.2.10)
GSM-R network is configured to allow forced de-registration of a functional number by another driver (1.1.1.3.3.11 | 1.2.1.1.2.11)
Radio Network ID (1.1.1.3.3.12 | 1.2.1.1.2.13)
Specific constraints imposed by the GSM-R network operator on ETCS on-board units only able to operate in circuit-switch (1.2.1.1.2.12)

GSM-R version OP

GSM-R functional requirements specification (FRS) and system requirements specification (SRS) in accordance with the specification respectively referenced in Appendix A-1, index [E] and index [F], version number or baseline installed.

IRI: *http://data.europa.eu/949/gsmRVersion*

Parameter of
Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.3.3.1
1.2.1.1.2.1

XML Name:
CRG_Version

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest 12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
GSM-R Versions

Values :

Code	Value
00	Baseline 0
50	Baseline 1

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
GSM-R must be installed for this parameter to be applicable and a value to be provided. If this property is not used, all GSM-R related properties should not be used either.

Validation Rules:
Gsm Rversion
Comment: GSM-R functional requirements specification and system requirements specification in accordance with the specification respectively referenced in TSI CCS (Annex), version number installed lineside.
Message: gsmRVersion (1.1.1.3.3.1, 1.2.1.1.2.1): The track must have a GSM-R version value that is an IRI.
Gsm Rversion Skos
Comment: GSM-R functional requirements specification and system requirements specification in accordance with the specification respectively referenced in TSI CCS (Annex), version number installed lineside.
Message: gsmRVersion (1.1.1.3.3.1, 1.2.1.1.2.1): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/gsmr-versions/GSMRVersions.

OPE TSI References

Appendix D2 Index
3.1.7

Additional Information

General explanation:

GSM-R functional requirements specification and system requirements specification in accordance with the specification respectively referenced in TSI CCS (Annex), version number installed lineside.

Since more than one version may be installed in different areas, this property can have multiple values.
In case there is no GSM-R network available, this property shall be flagged as not applicable and all other GSM-R parameters ('Number of active GSM-R mobiles (EDOR) or simultaneous communication session on-board for ETCS Level 2 needed to perform radio block centre handovers without having an operational disruption' and 'Optional GSM-R functions') shall be flagged as not applicable.

See also:
Referenced in Appendix A-1, index [E] and index [F]

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Number of active GSM-R mobiles (EDOR) or simultaneous communication session on board for ETCS level 2 needed to perform radio block centre handovers without having an operational disruption OP

Number of simultaneous communication session on board for ETCS level 2 required for a smooth running of the train. This relates to the radio block centre (RBC) handling of communication sessions. Not safety critical and no matter of interoperability.

IRI: *http://data.europa.eu/949/gsmRActiveMobiles*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.2
1.2.1.1.2.2

XML Name:
CRG_NumActiveMob

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Number of active GSM-R mobiles

Values :

Code	Value
10	0
20	1
30	2

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
GSM-R and ETCS level 2 must be installed for this parameter to be applicable.

Validation Rules:
Gsm Ractive Mobiles
Comment: Number of simultaneous communication session on board for ETCS level 2 required for a smooth running of the train. This relates to the radio block centre (RBC) handling of communication sessions. Not safety critical and no matter of interoperability.
Message: gsmRActiveMobiles (1.1.1.3.3.2, 1.2.1.1.2.2): The track must have a number of active GSM-R mobiles (EDOR) or simultaneous communication session on-board for ETCS Level 2 needed to perform radio block centre handovers without having an operational disruption value that is a single IRI. This error is due to having more than one value or having a value that is not an IRI.
Gsm Ractive Mobiles Skos
Comment: Number of simultaneous communication session on board for ETCS level 2 required for a smooth running of the train. This relates to the radio block centre (RBC) handling of communication sessions. Not safety critical and no matter of interoperability.
Message: gsmRActiveMobiles (1.1.1.3.3.2, 1.2.1.1.2.2): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/gsmr-number-active-mobiles/NumberActiveMobiles.
Gsm Ractive Mobiles Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) and ETCS L2 (parameter 1.1.1.3.2.1) must be installed for this parameter to be applicable.
Message: gsmRActiveMobiles (1.1.1.3.3.2, 1.2.1.1.2.2):The track {$this} ({?label}), has a 'GSM-R version' defined and a 'ETCS level' type selected which makes the gsmRActiveMobiles parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
In case there is no ETCS Level 2 in the line, do this parameter must be flagged as Not Applicable.
In case there is ETCS Level 2 in the line, the minimum number of EDOR required on board would be 1.
In case ETCS baseline 3 release 2 or baseline 4 is selected, select "2" .
Please select " 1" or "2" , taking into account that TSI compliant trains may only be fitted with 1 EDOR.

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Optional GSM-R functions OP

Use of optional GSM-R functions which might improve operation on the line. They are for information only and not for network access criteria.

IRI: *http://data.europa.eu/949/gsmROptionalFunctions*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.3
1.2.1.1.2.3

XML Name:
CRG_OptionalFunctions

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Optional GSM-R functions

Values :

Code	Value
10	Network selection manual (*1)
20	Network selection via balise (*1)
30	Network selection automatic (*1)
40	Public emergency (112) available (*2)
50	Broadcast calls (VBS) used (*3)
60	Text message service used (SMS) (*4)
70	Restriction of display of called/calling user (*5)
80	Automatically forward of incoming call if no reply (*5)
90	Automatically forward of incoming call if not reachable (*5)
100	Use of chargeable Network Services (*6)
110	General data applications (*7)
130	ETCS RBC or other devices alerted when initiating a REC (Railway Emergency Call) (*8)
140	Display at the controller terminal of the location of the mobile initiating a REC (Railway Emergency Call) (*8)
150	Use of enhanced Railway Emergency Call (eREC) (*8)
160	GSM-R shunting used (*8)

Code	Value
170	Data recorded in case of Shunting Emergency Call (*8)
180	Extended frequency bands used (*9)

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable

Validation Rules:
Gsm Roptional Functions Skos
Comment: Use of optional GSM-R functions which might improve operation on the line. They are for information only and not for network access criteria.
Message: gsmROptionalFunctions (1.1.1.3.3.2, 1.2.1.1.2.2): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/gsmr-optional-functions/OptionalFunctions.
Gsm Roptional Functions
Comment: Use of optional GSM-R functions which might improve operation on the line. They are for information only and not for network access criteria.
Message: gsmROptionalFunctions (1.1.1.3.3.3, 1.2.1.1.2.3): The track must have optional GSM-R functions value that is an IRI. This error is due to having a avalue that is not an IRI
Gsm Roptional Functions Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable.
Message: gsmROptionalFunctions (1.1.1.3.3.2, 1.2.1.1.2.2):The track {$this} ({?label}), has a 'GSM-R version' defined which makes the gsmROptionalFunctions parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:

(*1) These inputs refer to the expected behaviour by the network, i.e. if there is any area or point where an automatic selection of network should be done or if there is any location where balises to instruct a change of radio network have been installed.
In order to be able to attend to these indications (automatic network, network change by balise) some configuration is needed in the mobile.
In case there is a balise used to announce the change of the network, or if there are locations where the network selection is planned by the IM to be done automatically (and not manually, as stated in the requirements). It should be considered as an item that is related to the design of the infrastructure.

(*2) the possibility to dial 112 is something specific to the network that should be communicated to the vehicles accessing it.

(*3) the use of broadcast calls is something specific to the network that has to be configured in it.

(*4) it is something specific to the network that has to be configured in it if the service is provided.

(*5) it is something specific to the network that has to be configured in it if the service is provided; something may need to be configured on the network but also in the mobile subscriber data if it wants to use the service. What is requested here is the information of the network capability.

(*6) if they are configured on the network. Please indicate which in the "Other information" box.

(*7) To be selected if other data applications, different from ETCS L2, can be used within the network
-

(*8) if it is configured on the network.
"GSM-R Shunting used" in order to make public if the GSM-R is used in the network for shunting activities.

(*9) Please specify in the "Other information" box for which services /applications are they planned and which are the frequencies in use.

(*11) Please use this field to indicate any additional information on network characteristics, e.g.; interference level, leading to the need of additional on-board protection;

Additional information on network characteristics OP

Any additional information on network characteristics or corresponding document available from the IM and stored by the Agency, e.g.; interference level, leading to the recommendation of additional on-board protection.

IRI: *http://data.europa.eu/949/gsmRAdditionalInfo*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.3.1
1.2.1.1.2.3.1

XML Name:
CRG_AdditionalnetworkInfo

Deadline:

1 January 2021
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
GSM-R must be installed for this parameter to be applicable

Validation Rules:
Gsm Radditional Info Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable.
Message: gsmRAdditionalInfo (1.1.1.3.3.3.1, 1.2.1.1.2.3.1):The track {$this} ({? label}), has a 'GSM-R version' defined which makes the gsmRAdditionalInfo parameter applicable. This error is due to {$this} not having a value for such a parameter.
Gsm Radditional Info
Comment: Any additional information on network characteristics or corresponding document available from the IM and stored by the Agency, e.g.; interference level, leading to the recommendation of additional on-board protection.
Message: gsmRAdditionalInfo (1.1.1.3.3.3.1 , 1.2.1.1.2.3.1): The track has additional information on network characteristics that must be a Document.

Additional Information

General explanation:
Please use this field to indicate any additional information on the GSM-R network.

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

GPRS for ETCS DP

Indication if GPRS can be used for ETCS

IRI: *http://data.europa.eu/949/gprsForETCS*

Parameter of
Running track

Subset with common characteristics

General Information

Number:
1.1.1.3.3.3.2
1.2.1.1.2.3.2

XML Name:
CRG_GPRSForETCS

Deadline:
1 January 2021
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
GSM-R and ETCS L2 must be installed for this parameter to be applicable.

Validation Rules:
Gprs For Etcs
Comment: Indication if GPRS can be used for ETCS.
Message: gprsForETCS (1.1.1.3.3.3.2, 1.2.1.1.2.3.2): Each track may define the existence of GPRS for ETCS. This error is due to having more than one value or having a value that is not Y/N (boolean).
Gprs For Etcsapplicability
Comment: GSM-R (parameter 1.1.1.3.3.1) and ETCS L2 (parameter 1.1.1.3.2.1) must be installed for this parameter to be applicable.
Message: gprsForETCS (1.1.1.3.3.3.2, 1.2.1.1.2.3.2):The track {$this} ({?label}), has a 'GSM-R version' defined and a 'ETCS level' type selected which makes the gprsForETCS parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
Sections of EIRENE and ETCS subsets for trackside in TSI

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Area of implementation of GPRS DP

Indication of the area in which GPRS can be used for ETCS, expressed as a list of GPRS-enabled RBCs.

IRI: *http://data.europa.eu/949/gprsImplementationArea*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.3.3
1.2.1.1.2.3.3

XML Name:
CRG_GPRSAreaOfImpl

Deadline:
1 January 2021
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
GSM-R, ETCS L2 and GPRS for ETCS must be installed for this parameter to be applicable.

Validation Rules:
Gprs Implementation Area Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1), ETCS L2 (parameter 1.1.1.3.2.1) and GPRS for ETCS (parameter 1.1.1.3.3.3.2) must be installed for this parameter to be applicable.
Message: gprsImplementationArea (1.1.1.3.3.3.3, 1.2.1.1.2.3.3):The track {$this} ({? label}), has a 'GSM-R version' defined and a 'ETCS level' type selected which makes the gprsImplementationArea parameter applicable. This error is due to {$this} not having a value for such a parameter.
Gprs Implementation Area
Comment: Indication of the area in which GPRS can be used for ETCS, expressed as a list of GPRS-enabled RBC's.
Message: gprsImplementationArea (1.1.1.3.3.3.3, 1.2.1.1.2.3.3): The gprsImplementationArea must be a string. This error is due to the value not being a string.

Additional Information

General explanation:

Since GPRS can be used for ETCS, indicate in which areas it is implemented (e.g.: whole section, only between two signals, at the station…)

See also:
Sections of EIRENE optional for trackside in TSI

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

GSM-R use of group 555 DP

Indication if group 555 is used trackside or whether onboard has Voice SIM Card support for Group ID 555.

IRI: *http://data.europa.eu/949/usesGroup555*

Parameter of

Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.3.3.4
1.2.1.1.2.4

XML Name:
CRG_Needof555

Deadline:
12 months after publication of Article 7 Guide for OP tracks
16 January 2020

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
GSM-R and ETCS L2 must be installed for this parameter to be applicable.

Validation Rules:
Uses Group555
Comment: Indication if group 555 is used.
Message: usesGroup555 (1.1.1.3.3.4, 1.2.1.1.2.4): Each track may define the existence of GSM-R use of group 555. This error is due to having more than one value or having a value that is not Y/N (boolean).

Uses Group555applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) and ETCS L2 (parameter 1.1.1.3.2.1) must be installed for this parameter to be applicable.
Message: usesGroup555 (1.1.1.3.3.4, 1.2.1.1.2.4):The track {$this} ({?label}), has a 'GSM-R version' defined and a 'ETCS level' type selected which makes the usesGroup555 parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Sections of EIRENE not covered by references in TSI. GSM-R (parameter 1.1.1.3.3.1) and ETCS L2 (parameter 1.1.1.3.2.1) must be installed for this parameter to be applicable.

GSM-R networks covered by a roaming agreement OP

Name of the own GSM-R network and list of GSM-R networks which are covered by a roaming agreement (for CS services).

IRI: *http://data.europa.eu/949/gsmrNetworkCoverage*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.5
1.2.1.1.2.5

XML Name:
CRG_RoamingAgreement

Deadline:
12 months after publication of Article 7 Guide for OP tracks
16 January 2020

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
Concept

Taxonomy Reference:
GSM-R Networks

Values :

Code	Value
10	GSM-R A (Austria)
20	GSM-R AL (Albania)
30	GSM-R B (Belgium)
40	GSM-R BA (Bosnia Herzegovina)
50	GSM-R BG (Bulgaria)
60	GSM-R BY (Belarus)
70	GSM-R CH (Switzerland)
80	GSM-R CZ (Czech Rep.)
90	GSM-R D (Germany)
100	GSM-R DK (Denmark)
110	GSM-R E (Spain)
120	GSM-R EE (Estonia)
130	GSM-R F (France)
140	GSM-R FI (Finland)
150	GSM-R GB (UK (Great Britain))
160	GSM-R GR (Greece)
170	GSM-R HR (Croatia)
180	GSM-R HU (Hungary)
190	GSM-R I (Italy)
200	GSM-R IE (Ireland)
210	GSM-R IS (Iceland)
220	GSM-R KO (Kosovo)
230	GSM-R L (Luxembourg)
240	GSM-R LT (Lithuania)

Code	Value
250	GSM-R LV (Latvia)
260	GSM-R MD (Moldova)
270	GSM-R ME (Montenegro)
280	GSM-R MK (Macedonia)
290	GSM-R N (Norway)
300	GSM-R NL (Netherlands)
310	GSM-R P (Portugal)
320	GSM-R PL (Poland)
330	GSM-R RO (Romania)
340	GSM-R RU (Russia)
350	GSM-R S (Sweden)
360	GSM-R SI (Slovenia)
370	GSM-R SK (Slovakia)
380	GSM-R SR (Serbia)
390	GSM-R TR (Turkey)
400	GSM-R UA (Ukraine)

Flags

Applicability Flags:

Y/N/NYA

Validation

Dependencies:

GSM-R must be installed for this parameter to be applicable

Validation Rules:

Gsmr Network Coverage Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable.
Message: gsmrNetworkCoverage (1.1.1.3.3.5, 1.2.1.1.2.5):The track {$this} ({?label}), has a 'GSM-R version' defined which makes the gsmrNetworkCoverage parameter applicable. This error is due to {$this} not having a value for such a parameter.
Gsmr Network Coverage
Comment: List of GSM-R networks which are covered by a roaming agreement.
Message: gsmrNetworkCoverage (1.1.1.3.3.5, 1.2.1.1.2.5): The track must have a GSM-R networks covered by a roaming agreement value that is an IRI.

Gsmr Network Coverage Skos
Comment: List of GSM-R networks which are covered by a roaming agreement.
Message: gsmrNetworkCoverage (1.1.1.3.3.5, 1.2.1.1.2.5): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/gsmr-networks/GSMRNetworks.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Name of the own GSM-R network and list of GSM-R networks which are covered by a roaming agreement for CS services.
This list is managed by UIC. The Agency will monitor it in order to update the list of possible values when necessary.
For Route Compatibility purposes and simplicity, the own network needs to be declared by the IM, so the RUs can systematically check the compatibility.
For voice services, roaming for CS is applicable. For ETCS, as long as roaming for CS is ensured, the interoperability will be guaranteed.

Existence of GSM-R roaming to public networks DP

Existence of roaming to a public network.

In case of Y, provide the name of the public network(s) under parameter "Details on GSM-R roaming to public networks".

IRI: *http://data.europa.eu/949/publicNetworkRoaming*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.6
1.2.1.1.2.6

XML Name:
CRG_RoamingPublic

Deadline:
12 months after publication of Article 7 Guide for OP tracks
1 January 2021

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:

Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
GSM-R must be installed for this parameter to be applicable

Validation Rules:
Public Network Roaming
Comment: Existence of roaming to a public network.
Message: publicNetworkRoaming (1.1.1.3.3.6, 1.2.1.1.2.6): Each track may define the existence of GSM-R roaming to public networks. This error is due to having more than one value or having a value that is not Y/N (boolean).
Public Network Roaming Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable.
Message: publicNetworkRoaming (1.1.1.3.3.6, 1.2.1.1.2.6):The track {$this} ({? label}), has a 'GSM-R version' defined which makes the publicNetworkRoaming parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
Sections of EIRENE not covered by references in TSI.

Details on GSM-R roaming to public networks DP

If roaming to public networks is configured, please indicate to which networks, for which users and in which areas.

IRI: *http://data.europa.eu/949/publicNetworkRoamingDetails*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.7
1.2.1.1.2.7

XML Name:
CRG_RoamingPublicDetails

Deadline:
1 January 2021
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory if GSM-R is installed and era:publicNetworkRoaming is 'true'. Otherwise, it is not applicable.

Validation Rules:
Public Network Roaming Details Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable.
Message: publicNetworkRoamingDetails (1.1.1.3.3.7, 1.2.1.1.2.7):The track {$this} ({?label}), has a 'GSM-R version' defined which makes the publicNetworkRoamingDetails parameter applicable. This error is due to {$this} not having a value for such a parameter.
Public Network Roaming Details
Comment: If roaming to public networks is configured, please: 1. indicate to which networks, for which users and in which areas. 2. list if any GSM-R functionality is not available when roaming to a public network (e.g. REC, Functional Addressing, Group Calls). 3. also add if there is any operational restriction for vehicles that cannot roam into any of the available public networks.
Message: publicNetworkRoamingDetails (1.1.1.3.3.7, 1.2.1.1.2.7): Each track may have details on GSM-R roaming to public networks that is a character string. This error is due to having more than one publicNetworkRoamingDetails value or having a value that is not a string.

Additional Information

General explanation:
List if any GSM-R functionality is not available when roaming to a public network (e.g. REC, Functional Addressing, Group Calls).
Please also add if there is any operational restriction for vehicles that cannot roam into any of the available public networks.

No GSMR coverage DP

Indication if there is no GSMR coverage

IRI: *http://data.europa.eu/949/gsmRNoCoverage*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.8
1.2.1.1.2.8

XML Name:
CRG_GSMRNoCoverage

Deadline:

1 January 2021
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable.

Validation Rules:
Gsm Rno Coverage
Comment: Indication if there is no GSMR coverage.
Message: gsmRNoCoverage (1.1.1.3.3.8, 1.2.1.1.2.8): Each track may define the indication of existence of GSMR coverage. This error is due to having more than one value or having a value that is not Y/N (boolean).
Gsm Rno Coverage Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable.
Message: gsmRNoCoverage (1.1.1.3.3.8, 1.2.1.1.2.8):The track {$this} ({?label}), has a 'GSM-R version' defined which makes the gsmRNoCoverage parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
If GSM-R is not installed, this parameter should not be used.
This parameter is mainly to capture the case of Radio Hole functionality (lack of GSM-R coverage), that is foreseen in the ETCS specifications as packet 68.
Another possible use is the declaration of a temporary situation where, although the area is in principle covered by GSM-R, there is a long-term outage or a project for replacement of the radio (i.e. a section that will not be covered with GSM-R for half a year or longer).

Radio system compatibility voice OP

Radio requirements used for demonstrating technical compatibility voice.

IRI: *http://data.europa.eu/949/voiceRadioCompatible*

Parameter of
Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.3.3.9
1.2.1.1.2.9

XML Name:
CRG_RadioCompVoice

Deadline:
12 months after publication of Article 7 Guide for OP tracks
16 January 2020

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
Radio System Compatibilities Voice

Values :

Code	Value
10	Not Defined
20	RSC-EU-0
50	RSC-ES-03-V
60	RSC-ES-04-V
70	RSC-SE-01-V
80	RSC-FR-01-V
100	RSC-AT-01-V
110	RSC-BE-01-V
120	RSC-RO-01-V
130	RSC-ES-05-V
140	RSC-DE-01-V
150	RSC-LU-01-V
160	RSC-CH-01-V
180	RSC-PT-02-V
190	RSC-PL-01-V

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:

GSM-R must be installed for this parameter to be applicable.
In case of RSC-EU-0 or None, no other values are allowed.

Validation Rules:

Voice Radio Compatible Skos
Comment: Radio requirements used for demonstrating technical compatibility voice.
Message: voiceRadioCompatible (1.1.1.3.3.9, 1.2.1.1.2.9): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/radio-system-compatibilities-voice/RadioSystemCompatibilitiesVoice.
Voice Radio Compatible
Comment: Radio requirements used for demonstrating technical compatibility voice.
Message: voiceRadioCompatible (1.1.1.3.3.9, 1.2.1.1.2.9): The track may have a radio system compatibility voice value that is an IRI. This error is due to having a value that is not an IRI.
Voice Radio Compatible Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable.
Message: voiceRadioCompatible (1.1.1.3.3.9, 1.2.1.1.2.9):The track {$this} ({?label}), has a 'GSM-R version' defined which makes the voiceRadioCompatible parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:

Information on RSC voice requirements per country is given in the referred document.

Vehicles are considered compatible with the infrastructure regarding this parameter, if any of the values declared matches.
In case the value “Not Defined” or “RSC-EU-0” is used, repetitions with additional values are not expected.

See also:

https://www.era.europa.eu/system/files/2023-05/esc-rsc_technical_document_en.pdf
https://www.era.europa.eu/era-folder/radio-system-compatibility-rsc-voice-and-data-documents
https://www.era.europa.eu/system/files/2022-11/list_harmonised_national_restriction_codes_en.pdf

Radio system compatibility data OP

Radio requirements used for demonstrating technical compatibility data.

IRI: *http://data.europa.eu/949/dataRadioCompatible*

Parameter of

Running track
Subset with common characteristics
Vehicle Type

General Information

Number:

1.1.1.3.3.10
1.2.1.1.2.10

XML Name:

CRG_RadioCompData

Deadline:

12 months after publication of Article 7 Guide for OP tracks

16 January 2020

Belongs to parameters group

TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)
Vehicle type technical characteristic

Data Format

Data Presentation

Concept

Taxonomy Reference:

Radio System Compatibilities Data

Values :

Code	Value
10	Not Defined
20	RSC-EU-0
50	RSC-ES-03-D
60	RSC-ES-04-D
61	RSC-ES-04.LAXAVA-D
62	RSC-ES-04.ORESAN-D
63	RSC-ES-04.ARAVIL-D
64	RSC-ES-04.GENERAL-D
70	RSC-SE-01-D
80	RSC-FR-01-D
90	RSC-AT-01-D
100	RSC-PL-01-D
110	RSC-ES-05-D
111	RSC-ES-05.LEOPOL-D
112	RSC-ES-05.PEDORE-D
113	RSC-ES-05.GENERAL-D
114	RSC-ES-03.GENERAL-D
115	RSC-ES-03.SPECIFIC-D
160	RSC-CH-01-D
501	RSC-ES-03.ALBALI-D
502	RSC-ES-03.ANTGRA-D
503	RSC-ES-03.CHATO-D
504	RSC-ES-03.BAFI-D

Code	Value
505	RSC-ES-03.CORMAL-D
506	RSC-ES-03.SAGTOL-D
507	RSC-ES-03.MADBCN-D
508	RSC-ES-03.MADVLL-D
509	RSC-ES-03.MONMUR-D
510	RSC-ES-03.MOTVLCALB-D
511	RSC-ES-03.OLMPED-D
512	RSC-ES-05.PLACACBAD-D
513	RSC-ES-03.TORMOT-D
514	RSC-ES-03.VALLEOBUR-D
515	RSC-ES-03.VILTAR-D
516	RSC-ES-05.HOSMAT-D

Flags

Applicability Flags:

Y/N/NYA

Validation

Dependencies:

GSM-R and ETCS L2 must be installed for this parameter to be applicable.

Validation Rules:

Data Radio Compatible Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) and ETCS L2 (parameter 1.1.1.3.2.1) must be installed for this parameter to be applicable.
Message: dataRadioCompatible (1.1.1.3.3.10, 1.2.1.1.2.10):The track {$this} ({?label}), has a 'GSM-R version' defined and a 'ETCS level' type selected which makes the dataRadioCompatible parameter applicable. This error is due to {$this} not having a value for such a parameter.
Data Radio Compatible Skos
Comment: Radio requirements used for demonstrating technical compatibility data.
Message: dataRadioCompatible (1.1.1.3.3.10, 1.2.1.1.2.10): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/radio-system-compatibilities-data/RadioSystemCompatibilitiesData.

Data Radio Compatible
Comment: Radio requirements used for demonstrating technical compatibility data.
Message: dataRadioCompatible (1.1.1.3.3.10, 1.2.1.1.2.10): The track may have a radio system compatibility data value that is an IRI. This error is due to having a value that is not an IRI.

Additional Information

General explanation:
Information on RSC data requirements per country.

Vehicles are considered compatible with the infrastructure regarding this parameter, if any of the values declared matches.
In case the value “Not Defined” or “RSC-EU-0” is used, repetitions with additional values are not expected.

See also:
https://www.era.europa.eu/system/files/2022-11/list_harmonised_national_restriction_codes_en.pdf
https://www.era.europa.eu/system/files/2023-05/esc-rsc_technical_document_en.pdf
https://www.era.europa.eu/era-folder/radio-system-compatibility-rsc-voice-and-data-documents

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

GSM-R network is configured to allow forced de-registration of a functional number by another driver DP

This feature will determine the applicable operational rules for drivers and signallers when dealing with cab radios registered under wrong numbers.

IRI: *http://data.europa.eu/949/gsmrForcedDeregistrationFunctionalNumber*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.11
1.2.1.1.2.11

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
GSM-R and ETCS L2 must be installed for this parameter to be applicable.

Validation Rules:
Gsmr Forced Deregistration Functional Number
Comment: This feature will determine the applicable operational rules for drivers and signallers when dealing with cab radios registered under wrong numbers.
Message: gsmrForcedDeregistrationFunctionalNumber (1.1.1.3.3.11, 1.2.1.1.2.11): Each track may define the existence of GSM-R network configured to allow forced de-registration of a functional number by another driver. This error is due to having more than one value or having a value that is not Y/N (boolean).
Gsmr Forced Deregistration Functional Number Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) and ETCS L2 (parameter 1.1.1.3.2.1) must be installed for this parameter to be applicable.
Message: gsmrForcedDeregistrationFunctionalNumber (1.1.1.3.3.11, 1.2.1.1.2.11):The track {$this} ({?label}), has a 'GSM-R version' defined and a 'ETCS level' type selected which makes the gsmrForcedDeregistrationFunctionalNumber parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
See documents regarding Operational Harmonisation ETCS.

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Radio Network ID DP

Unique identification of the GSM-R network the calling mobile station has to register with, as defined in the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/radioNetworkId*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.12
1.2.1.1.2.13

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)
Identifier

Data Format

Data Presentation
String

Format:

NNNNNN with N a decimal number (0 9).

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
GSM-R must be installed for this parameter to be applicable.

Validation Rules:
Radio Network Id
Comment: Unique identification of the GSM-R network the calling mobile station has to register with, as defined in the specification referenced in TSI CCS.
Message: radioNetworkId (1.1.1.3.3.12, 1.2.1.1.2.13): The track has a Radio Network ID that must be a string and follow the format [NNNNNN]. The error is due to the value not being a string or not following the pattern.
Radio Network Id Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable.
Message: radioNetworkId (1.1.1.3.3.12, 1.2.1.1.2.13):The track {$this} ({?label}), has a 'GSM-R version' defined which makes the radioNetworkId parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Appendix D2 Index
3.4.4

Additional Information

General explanation:
According to the specification referenced in TSI CCS.

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Train detection systems defined based on frequency bands DP OP

General Information

Number:
1.1.1.3.4
1.2.1.1.3

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
Existence of train detection system fully compliant with the TSI (1.1.1.3.4.1 | 1.2.1.1.3.1)
Frequency bands for detection (1.1.1.3.4.2 | 1.2.1.1.3.2)
Evaluation parameters if maximum interference current is not measured in the preferred bands (1.1.1.3.4.2.1 | 1.2.1.1.3.2.1)
Maximum interference current (1.1.1.3.4.2.1 | 1.2.1.1.3.2.1)
Vehicle impedance (1.1.1.3.4.2.2 | 1.2.1.1.3.2.2)
Maximum magnetic field (1.1.1.3.4.2.3 | 1.2.1.1.3.2.3)

Existence of train detection system fully compliant with the TSI [DP]

Indication if there is any train detection system installed and fully compliant with the TSI CCS

IRI: *http://data.europa.eu/949/hasTSITrainDetection*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.4.1
1.2.1.1.3.1

XML Name:
CCD_TSITrainDetection

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Train detection systems defined based on frequency bands (1.1.1.3.4 | 1.2.1.1.3)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Tsitrain Detection
Comment: Indication if there is any train detection system installed and fully compliant with the TSI CCS (Annex I, Appendix A, Table A.2 -Index 77).
Message: hasTSITrainDetection (1.1.1.3.4.1, 1.2.1.1.3.1): Each track may define the existence of train detection system fully compliant with the TSI. This error is due to having more than one value or having a value that is not Y/N (boolean).

Additional Information

General explanation:
Verification of compliance with TSI includes application of notified national rules (when they exist).

See also:

Annex I, Appendix A, Table A.2 -Index 77
https://www.era.europa.eu/system/files/2023-09/index077_-_ERA_ERTMS_033281_v5.pdf

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Frequency bands for detection OP

Bands of the frequency management of the train detection systems as defined in the TSI CCS, and in the specific cases or technical documents referred to in Article 13 of TSI CCS when they are available.

IRI: *http://data.europa.eu/949/frequencyBandsForDetection*

Parameter of

Train Detection System

General Information

Number:
1.1.1.3.4.2
1.2.1.1.3.2

XML Name:
CCD_FreqBandDetec

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Train detection systems defined based on frequency bands (1.1.1.3.4 | 1.2.1.1.3)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Frequency bands for detection, one collection for axle counters, one for track circuits.

Values :

Code	Value
A0_TC	DC-operated Track Circuits
A10_TC	Band A10 for Track Circuits
A11_TC	Band A11 for Track Circuits
A1_AC	Band A1 for Axle Counters
A1_TC	Band A1 for Track Circuits
A2_AC	Band A2 for Axle Counters
A2_TC	Band A2 for Track Circuits
A3_AC	Band A3 for Axle Counters
A3_TC	Band A3 for Track Circuits
A4_TC	Band A4 for Track Circuits
A5_TC	Band A5 for Track Circuits
A6_TC	Band A6 for Track Circuits
A7_TC	Band A7 for Track Circuits
A8_TC	Band A8 for Track Circuits
A9_TC	Band A9 for Track Circuits
B1_TC	Band B1 for Track Circuits
B2_TC	Band B2 for Track Circuits
B3_TC	Band B3 for Track Circuits
C10_TC	Band C10 for Track Circuits
C11_TC	Band C11 for Track

Code	Value
	Circuits
C1_TC	Band C1 for Track Circuits
C2_TC	Band C2 for Track Circuits
C3_TC	Band C3 for Track Circuits
C4_TC	Band C4 for Track Circuits
C5_TC	Band C5 for Track Circuits
C6_TC	Band C6 for Track Circuits
C7_TC	Band C7 for Track Circuits
C8_TC	Band C8 for Track Circuits
C9_TC	Band C9 for Track Circuits

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Frequency Bands For Detection
Comment: Bands of the frequency management of the train detection systems as defined in the TSI CCS (Annex I, Appendix A, Table A.2 -Index 77), and in the specific cases or technical documents referred to in Article 13 of TSI CCS when they are available.
Message: frequencyBandsForDetection (1.1.1.3.4.2.1, 1.2.1.1.3.2): The train detection system has a frequency band for detection that must be an IRI. This error may be due to having more than one value or having a value that is not a Document.
Frequency Bands For Detection Skos
Comment: Indication of the frequency band for detection of the train detection system
Message: Indication of the frequency band for detection of the train detection system (1.1.1.3.4.2, 1.2.1.1.3.2): The train detection system {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/train-detection/FrequencyBandsForDetection.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:

Verification of compliance with TSI includes application of notified national rules (when they exist).

Multiple selection from a predefined list:
- Axle Counters: bands A1-A3
- Track circuits: bands A1-A8

See also:
https://eur-lex.europa.eu/eli/reg_impl/2023/1695/oj
https://www.era.europa.eu/system/files/2023-09/index077_-_ERA_ERTMS_033281_v5.pdf

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Evaluation parameters if maximum interference current is not measured in the preferred bands DP

Maximum interference current limits allowed for track circuits for a defined frequency band.

IRI: *http://data.europa.eu/949/maximumInterferenceCurrentEvaluation*

Parameter of
Train Detection System

General Information

Number:
1.1.1.3.4.2.1
1.2.1.1.3.2.1

Deadline:
12 months after publication of Article 7 Guide
For train detection system compliant with TSIs: 12 months after publication of Article 7 Guide.
For train detection system not TSI compliant: in relation to article 13 of TSI CCS

Belongs to parameters group
Train detection systems defined based on frequency bands (1.1.1.3.4 | 1.2.1.1.3)

Data Format

Data Presentation
String

Flags

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
If the preferred frequency bands are not used, (mandatory) description of the parameters for evaluation of compliance.
If the preferred frequency bands are used, this parameter is optional.

Validation Rules:

Maximum Interference Current Evaluation
Comment: If the preferred frequency bands are not used, (mandatory) description of the parameters for evaluation of compliance. If the preferred frequency bands are used, this parameter is optional.
Message: maximumInterferenceCurrentEvaluation (1.1.1.3.4.2.1, 1.2.1.1.3.2.1): Each TrainDetectionSystem may have a single value for maximumInterferenceCurrentEvaluation that is a character string. This error is due to having more than one maximumInterferenceCurrentEvaluation value or having a value that is not a string.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

See also:
https://www.era.europa.eu/system/files/2023-09/index077_-_ERA_ERTMS_033281_v5.pdf

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Maximum interference current DP

Maximum interference current limits allowed for track circuits for a defined frequency band.

IRI: *http://data.europa.eu/949/maximumInterferenceCurrent*

Parameter of
Train Detection System

General Information

Number:
1.1.1.3.4.2.1
1.2.1.1.3.2.1

XML Name:
CCD_MaxInterfCurrent

Deadline:
For train detection system compliant with TSIs: 12 months after publication of Article 7 Guide.
For train detection system not TSI compliant: in relation to article 13 of TSI CCS

Belongs to parameters group
Train detection systems defined based on frequency bands (1.1.1.3.4 | 1.2.1.1.3)

Data Format

Data Presentation
Double

Format:
NNN. An optional value could be filled in era:maximumInterferenceCurrentEvaluation

Unit of Measure:
Ampere per metre

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Evaluation parameters must be added if preferred bands are not used.

Validation Rules:
Maximum Interference Current
Comment: Maximum interference current limits allowed for track circuits for a defined frequency band (to be expressed in A/m).
Message: maximumInterferenceCurrent (1.1.1.3.4.2.1, 1.2.1.1.3.2.1): Each train detection system must define the maximum interference current in Amperes. This error may be due to having more than one value or having a value that is not a double (real) number.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
To be expressed in A/m. Verification of compliance with TSI includes application of notified national rules (when they exist).

Evaluation parameters must be added if preferred bands are not used.

See also:
https://www.era.europa.eu/system/files/2023-09/index077_-_ERA_ERTMS_033281_v5.pdf

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Vehicle impedance OP

Impedance as defined in the specification referenced in Appendix A-1, index [D]

IRI: *http://data.europa.eu/949/minVehicleImpedance*

Parameter of

Train Detection System
Vehicle type configuration parameter set

General Information

Number:
1.1.1.3.4.2.2
1.2.1.1.3.2.2

XML Name:
CCD_VehicleImpedance

Deadline:

For train detection system compliant with TSIs, 12 months after publication of Article 7 Guide.
For train detection system not TSI compliant: in relation to article 13 of TSI CCS 12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
Train detection systems defined based on frequency bands (1.1.1.3.4 | 1.2.1.1.3)

Data Format

Data Presentation
Minimum Vehicle Impedance

Format:
The values is an instance of era:MinVehicleImpedance class with its 2 properties.
Per voltage : input Capacitance (Cin) and Input Impedance (Zin)

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory only for track circuits

Validation Rules:
Min Vehicle Impedance

Message: minVehicleImpedance (1.1.1.3.4.2.2): The train detection system has a minimum vehicle impedance reference that must be a minimum vehicle impedance. This error may be due to having more than one value or having a value that is not an instance of a MinVehicleImpedance.
Min Vehicle Impedance Applicability
Comment: The parameter minVehicleImpedance is applicable for track circuits.
Message: minVehicleImpedance (1.1.1.3.4.2.2):The Train Detection System {$this} ({?tdsLabel}), has a 'track circuit' type that makes the minVehicleImpedance parameter applicable. This error is due to not having a value for such a parameter.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Compatibility with track circuits. A track circuit is only able to detect rolling stock if the impedance between rails does not exceed a certain value.

See also:
https://eur-lex.europa.eu/eli/reg_impl/2023/1695/oj

Maximum magnetic field OP

The maximum magnetic field limits allowed for axle counters (in dB µA/m) for a defined frequency band.

It should be provided in 3 directions.

IRI: *http://data.europa.eu/949/tdsMaximumMagneticField*

Parameter of

Train Detection System

General Information

Number:
1.1.1.3.4.2.3
1.2.1.1.3.2.3

XML Name:
CCD_MaxMagnField

Deadline:
12 months after publication of Article 7 Guide for OP tracks
For train detection system compliant with TSIs, 12 months after publication of Article 7 Guide.
For train detection system not TSI compliant: in relation to article 13 of TSI CCS

Belongs to parameters group
Train detection systems defined based on frequency bands (1.1.1.3.4 | 1.2.1.1.3)

Data Format

Data Presentation
Maximum magnetic field

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory for train detection systems based on axle counters

Validation Rules:
Tds Maximum Magnetic Field Applicability
Comment: Y, for parameter 1.1.1.3.7.1.1 “Axle Counters” only.
Message: tdsMaximumMagneticField (1.1.1.3.4.2.3, 1.2.1.1.3.2.3):The Train Detection System {$this} ({?clsLabel}), has an 'axle counters' type that makes the tdsMaximumMagneticField parameter applicable. This error is due to {$this} not having a value for such a parameter.
Tds Maximum Magnetic Field
Comment: Relates the Axle Counter TrainDetectionSystem with its MaximumMagneticField in (X,Y,Z). The maximum magnetic field limits allowed for axle counters (in dB µA/m) for a defined frequency band. It should be provided in 3 directions.
Message: tdsMaximumMagneticField (1.1.1.3.4.2.3, 1.2.1.1.3.2.3): The train detection system has a train detection system maximum magnetic field reference that must be a maximum magnetic field. This error may be due to having more than one value or having a value that is not an instance of a MaximumMagnaticField.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Relates the Axle Counter TrainDetectionSystem with its MaximumMagneticField in (X,Y,Z). Verification of compliance with TSI includes application of notified national rules (when they exist).

See also:
https://www.era.europa.eu/system/files/2023-09/index077_-_ERA_ERTMS_033281_v5.pdf

References:
http://data.europa.eu/eli/reg_impl/2023/1695/2023-09-08

Train protection legacy systems OP

General Information

Number:
1.1.1.3.5
1.2.1.1.4

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
Train protection legacy system (1.1.1.3.5.3 | 1.2.1.1.4.1)

Train protection legacy system OP

Indication of which class B system is installed.

IRI: *http://data.europa.eu/949/protectionLegacySystem*

Parameter of
Restriction
Running track
Subset with common characteristics
Vehicle Registration Restriction
Vehicle Type
Vehicle Type Authorisation Restriction

General Information

Number:
1.1.1.3.5.3
1.2.1.1.4.1

XML Name:
CPO_LegacyTrainProtection

Deadline:
12 months after publication of Article 7 Guide for OP tracks
16 January 2020

Belongs to parameters group
Train protection legacy systems (1.1.1.3.5 | 1.2.1.1.4)

Vehicle type technical characteristic

Data Format

Data Presentation

Concept

Taxonomy Reference:

Train Protection Legacy Systems

Values :

Code	Value
00	None
01	ALSN
02	ASFA
03	ATB
04	ATP-VR/RHK
05	BACC
06	CAWS and ATP
07	Crocodile
08	Ebicab
09	EVM
10	GW ATP
11	Indusi/PZB
12	KVB
13	LS
14	LZB
15	MEMOR II+
16	RETB
17	RSDD/SCMT
18	SELCAB
19	SHP
20	TBL
21	TPWS/AWS
22	TVM
23	ZUB 123
24	ZUB 121
25	ATB First generation
26	ATB new generation
27	ATP
28	CAWS

Code	Value
29	Chiltern-ATP
30	DAAT
31	EBICAB 700
32	EBICAB 900 ES
33	EuroSIGNUM
34	EuroZUB
35	Indusi
36	KCVB
37	KCVP
38	KVBP
39	Mechanical Trainstops
40	NEXTEO
41	PKP radio system with Radiostop function
42	SSC
43	TBL 1
44	TBL 2
45	TBL1+
46	TVM 300
47	TVM 430
48	ATC v2
49	ATC vR
50	EBICAB 700 BU
51	EBICAB 700 PT [CONVEL]
52	GNT [Geschwindigkeitsüberwachung für NeiTech-Züge]
53	INDUSI I60

Code	Value
54	LZB [LZB L72, LZB L72 CE I and LZB L72 CE II]
55	LZB ES
56	PZB 90
57	SCMT + RSC
58	SCMT
59	LZB L72
60	LZB CE I
61	LZB CE II

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Protection Legacy System
Comment: Indication of which class B system is installed.
Message: protectionLegacySystem (1.1.1.3.5.3): The track has an indication of the class B system that must be an IRI.
Protection Legacy System Skos
Comment: Indication of which class B system is installed.
Message: Indication of the protectionLegacySystem (1.1.1.3.5.3): The track {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: {?conceptScheme}.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The list is in line with ERA/TD/2011-09/INT (v1.17), Table 3, and is now in 3.3 of the annex II of TSI CCS.

See also:
https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32023R1695&qid=1694158367331#d1295e32-554-1
https://www.era.europa.eu/system/files/2022-11/list_harmonised_national_restriction_codes_en.pdf

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj
http://data.europa.eu/eli/reg_impl/2019/773/oj

Radio Legacy Systems OP

General Information

Number:
1.1.1.3.6
1.2.1.1.5

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)
Vehicle type technical characteristic

Related parameters
Class B or other radio systems installed (Radio Legacy Systems) (1.1.1.3.6.1 | 1.2.1.1.5.1)
Additional comments on Class B / Legacy Radio Systems installed
Additional comments on Class B / Legacy train protection, control and warning systems installed

---

Class B or other radio systems installed (Radio Legacy Systems) OP

Indication of radio legacy systems installed.

IRI: *http://data.europa.eu/949/legacyRadioSystem*

Parameter of

Restriction
Running track
Subset with common characteristics
Vehicle Registration Restriction
Vehicle Type
Vehicle Type Authorisation Restriction

General Information

Number:
1.1.1.3.6.1
1.2.1.1.5.1

XML Name:
CRS_Installed

Deadline:
12 months after publication of Article 7 Guide for OP tracks
16 January 2020

Belongs to parameters group
Radio Legacy Systems (1.1.1.3.6 | 1.2.1.1.5)

Data Format

Data Presentation
Concept

Taxonomy Reference:

Legacy Radio Systems

Values :

Code	Value
01	UIC Radio Chapter 1-4
02	UIC Radio Chapter 1-4+6
03	UIC Radio Chapter 1- 4 + 6 [Irish system]
08	UIC Radio Chapter 1-4 [TTT radio system installed at Cascais line]
09	TTT radio system CP_N [RSC – Rádio Solo-Comboio]
10	PKP radio system
13	LDZ radio system
14	CH — Greek Railways radio system [VHF]
15	UIC Radio Chapter Bulgaria
16	The Estonian radio system
17	The Lithuanian radio system
18	450 Mhz UIC [Channel C]
19	Analogue Radio Germany - UIC 751
20	BOSCH [160 MHz]
21	GSM-P
22	Multikom [160 MHz and 450 MHz]
23	OMEGA [160 MHz]
24	RDZ - in compliance with UIC 751-3
25	RETB [voice]
26	Radio Network of CFR

Code	Value
27	SRO [160 MHz]
28	Shunting Radio Communication System
31	Analogue railway radio system [RDU] - in compliance with UIC 751-3
32	SRD
33	DMR
100	None

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Legacy Radio System
Comment: Indication of radio legacy systems installed.
Message: legacyRadioSystem (1.1.1.3.6.1, 1.2.1.1.5.1): The track may have other radio systems installed (Radio Legacy Systems) value that is an IRI. This error is due to having a value that is not an IRI
Legacy Radio System Skos
Comment: Indication of radio legacy systems installed.
Message: legacyRadioSystem (1.1.1.3.6.1, 1.2.1.1.5.1): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/legacy-radio-systems/LegacyRadioSystems.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.1.7

Additional Information

General explanation:
The list is in line with ERA/TD/2011-09/INT (v1.17), Table 4, and is now in 3.4 of the annex II of TSI CCS.

See also:
https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32023R1695&qid=1694158367331#d1295e32-554-1
https://www.era.europa.eu/system/files/2022-11/list_harmonised_national_restriction_codes_en.pdf

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj
http://data.europa.eu/eli/reg_impl/2019/773/oj

Other train detection systems OP

General Information

Number:
1.1.1.3.7
1.2.1.1.6

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
Type of train detection system (1.1.1.3.7.1.1 | 1.2.1.1.3.1.1)
Type of track circuits or axle counters to which specific checks are needed (1.1.1.3.7.1.2 | 1.2.1.1.6.1)
Document with the procedure(s) related to the type of train detection systems declared in "Type of track circuits or axle counters to which specific checks are needed" (1.1.1.3.7.1.3 | 1.2.1.1.6.2)
Section with train detection limitation (1.1.1.3.7.1.4 | 1.2.1.1.6.3)

Type of train detection system OP

Indication of types of train detection systems installed.

IRI: *http://data.europa.eu/949/trainDetectionSystemType*

Parameter of
Restriction
Train Detection System
Vehicle Registration Restriction
Vehicle Type
Vehicle Type Authorisation Restriction

General Information

Number:
1.1.1.3.7.1.1
1.2.1.1.3.1.1

XML Name:
CTD_DetectionSystem

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest 12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
Other train detection systems (1.1.1.3.7 | 1.2.1.1.6)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
Train Detection Systems

Values :

Code	Value	Also Known As
10	Track circuit	Track circuits
20	Wheel detector	
30	Loop	Loops

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Not all parameters are applicable to all types of train detection systems; it depends on the applicability condition.

Validation Rules:
Train Detection System Type Skos
Comment: Indication of types of train detection system installed.
Message: Indication of types of train detection system installed (1.1.1.3.7.1.1, 1.2.1.1.3.1.1): The train detection system {$this} (label {?tdsLabel}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/train-detection/TrainDetectionSystems.
Train Detection System Type
Comment: Indication of types of train detection system installed.
Message: trainDetectionSystemType (1.1.1.3.7.1.1, 1.2.1.1.3.1.1): The train detection system has a train detection system type that must be a single IRI. This error may be due to having more than one value or having a value that is not an IRI.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Verification of compliance with TSI includes application of notified national rules (when they exist).

Explanation on data presentation:
The option of "wheel detector" has to be also selected for: wheel sensor for axle counter, pedal or treadle.

If there is no train detection system (if this parameters is not applicable) it has an impact on parameters "Type of track circuits or axle counter to which specific checks are needed" and "Document with the procedure(s) related to the type of train detection systems declared in 1.1.1.3.7.1.2 (1.2.1.1.6.1, if in OP)", making them also not applicable.
Explanation on data presentation:
The option of "wheel detector" has to be also selected for: wheel sensor for axle counter, pedal or treadle.

See also:
https://www.era.europa.eu/system/files/2022-11/list_harmonised_national_restriction_codes_en.pdf

Type of track circuits or axle counters to which specific checks are needed OP

Reference to the technical specification of train detection system, in accordance with the specification referenced in Appendix A-1, index [D]

IRI: *http://data.europa.eu/949/trainDetectionSystemSpecificCheck*

Parameter of

Train Detection System

General Information

Number:
1.1.1.3.7.1.2
1.2.1.1.6.1

XML Name:
CTD_TCCheck

Deadline:
12 months after publication of Article 7 Guide for OP tracks
16 January 2020

Belongs to parameters group
Other train detection systems (1.1.1.3.7 | 1.2.1.1.6)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Train Detection Systems Specific Checks

Values :

Code	Value
AT_AC_100	ZP43
AT_AC_110	ZP70
AT_TC_100	EMR-mod (Gleisrelais) mit Track Circuit 100Hz
AT_TC_110	Gleich-stromkreis
AT_TC_120	S50108914 106,7 Hz
AT_TC_130	Thales 100HZ
AT_TC_140	Track Circuit 100 Hz (eWM)
BE_AC_100	SK50
BE_TC_100	UM71
BG_AC_100	Föstalpine Uni ACE2
BG_AC_110	Frauscher ACS - 2000
BG_AC_120	Frauscher RSR 123
BG_AC_130	Frauscher RSR 180
BG_AC_140	Promelectronic ESSO-M
BG_AC_150	Siemens ACM-100
BG_AC_160	Siemens AzS350
BG_AC_170	Siemens AzS350U
BG_AC_180	Siemens ZP-43D
BG_AC_190	Thales 6221 A3 - Centralized system
BG_AC_200	Thales 6315 LM - Centralized System
BG_AC_210	Thales 6316 LS - Decentralized System
BG_TC_100	AC rail circuit with heterodyne receiver at 71÷83 Hz
BG_TC_110	DC with continuous power supply WSSB

Code	Value
BG_TC_120	DC with road relay
BG_TC_130	DC with Road Relay Experimental
BG_TC_140	KERV
BG_TC_150	Phase-sensitive 25 Hz
BG_TC_160	Pulse
CH_TC_100	12 Volt DC (two variations re. transmission: DC & AC w/inverter)
CH_TC_110	125 Hz 3-phase
CZ_AC_100	A3 Alcatel
CZ_AC_110	ACS 2000 - RSR122
CZ_AC_120	AŽD - PZN-1
CZ_AC_130	AzF - RSR180, RSR120
CZ_AC_140	Azl 70
DE_AC_100	DMK
DE_AC_110	DSS 200/400 (Tiefenbach)
DE_AC_120	Sk11
DE_AC_130	Zp 30 mit EAK 30 und Sk30/Sk30H
DE_AC_140	Zp 30 S mit EAK 30S und Sk30/Sk30H
DE_AC_150	Zp 30C mit EAK 30C und Sk30/30H
DE_AC_160	ZP 43E ges.
DE_AC_170	ZP 43M ges.
DE_AC_180	ZP 70 ges.
DE_AC_190	ZP30C-NT mit EAK 30C-NT und Sk30H bis 250km/h
DE_AC_200	ZP30C-NT mit EAK 30C-NT und Sk30H

Code	Value
	bis 380km/h
DE_LP_100	FSP
DE_LP_110	FSS
DE_LP_120	FSSB
DE_TC_100	16kHz
DE_TC_110	5/10kHz TF-Gleiskreis
DE_TC_120	EON 1/3
DE_TC_130	EON 7
DE_TC_140	GF 100
DE_TC_150	GF 42 (LF-TC 42Hz)
DE_TC_160	GF 50
DE_TC_170	Gleichstromgleiskreis GFO
DE_TC_180	GLS 100
DE_TC_190	GLS 106,7
DE_TC_200	GLS 42
DE_TC_210	GLS 50
DE_TC_220	GLS9/15
DE_TC_230	Röhrengleiskreis 100Hz
DE_TC_240	Röhrengleiskreis 106,7Hz
DE_TC_250	Röhrengleiskreis 50Hz
DE_WS_100	F300(Baugleich RSR122)
DE_WS_110	FEW Impulsgeber
DE_WS_120	RS L
DE_WS_130	RSE 45
DE_WS_140	RSK 89(mech.Schienenkontakt

Code	Value
DE_WS_150	RSR 122 (Germany)
DE_WS_160	S44
DE_WS_170	Schienenkopfschalter(Tiefenbach)
DE_WS_180	WSD- E
DE_WS_190	WSSB Impulsgeber
EE_AC_100	ACM 200 Axle counting System
EE_AC_110	Az S 350 U Axle counting System
EE_AC_120	FAdC R2 with COM-FSE Axle counters
EE_TC_100	AC track circuit 50Hz
EE_TC_110	CTRL@TRACK 100 Track circuit
EL_AC_100	AzS 350 U
EL_TC_100	SMARTWAY DIGICODE DTC-24
EL_TC_110	SMARTWAY DIGICODE DTC-921
EL_TC_120	TI-21
ES_AC_100	CLX
ES_AC_110	DEF-214-PLUS
ES_AC_120	E-CE-95
ES_AC_130	RSL
ES_AC_140	SIG.L90
ES_AC_150	DEF-87-CE
ES_AC_160	ERD-214
ES_AC_170	RSR 122 (Spain)
ES_AC_180	Zp30 C/H
ES_TC_100	50 Hz
ES_TC_110	50 Hz (ENYSE)

Code	Value
ES_TC_120	50 Hz (ERICSSON-ADTRANZ)
ES_TC_130	DSA 50 Hz
ES_TC_140	DSA CC
ES_TC_150	FS 2000/5000
ES_TC_160	FS 3000
ES_TC_170	GRS 50 Hz used in Spain
ES_TC_180	ITE JS (HVI)
ES_TC_190	ME 3015/ME 3047 (Electrans)
ES_TC_200	ME 3191
ES_TC_210	RCF (SASIB 50 Hz)
ES_TC_220	SJ-24S
ES_TC_230	SSA 50 Hz
ES_TC_240	UM71-2000
ES_TC_250	50 Hz ALCATEL-THALES
ES_TC_260	50 Hz SIEMENS
ES_TC_270	EBITRACK 400
ES_TC_280	TI21 I-M
FI_TC_100	125 Hz
FI_TC_110	75 Hz used in Finland
FI_TC_120	FTGS46
FI_TC_130	FTGS917
FI_TC_140	TMC100
FR_AC_100	Compteur d'essieu / DER D39/D50
FR_AC_110	Compteur d'essieu / DER ZP30h / Zp30k
FR_TC_100	Cdv 50 Hz
FR_TC_110	Cdv 83Hz

Code	Value
FR_TC_120	Cdv UM71 avec Recepteur REMOD
FR_TC_130	Cdv UM71 CTVM 300
FR_TC_140	Direct Current (DC) track circuit
HR_AC_100	SK30 used in Croatia
HR_AC_110	ZK24
HR_AC_120	ZK24-2 used in Croatia
HR_TC_100	Audio fekventni izolirani odsjek 9607 - 10 kHz
HR_TC_110	Audio fekventni izolirani odsjek Siemens 10 kHz
HR_TC_120	Audio fekventni izolirani odsjek 12 R 65 - 8 kHz
HR_TC_130	Audio frekventni izolirani odsjek IPTC 71150
HR_TC_140	Audio frekventni izolirani odsjek Iskra 465-425-500
HR_TC_150	EOC detekori
HR_TC_160	Istosmjerni izolirani odsjeci
HR_TC_170	Izolirani odsjeci 50 Hz
HR_TC_180	Izolirani odsjeci Integra Domino 125 Hz
HR_TC_190	Izolirani odsjeci Integra Domino APB - IB relej
HR_TC_200	Izolirani odsjeci Kon?ar 175/225/275Hz
HR_TC_210	Izolirani odsjeci

Code	Value
	Saxby
HR_TC_220	Izolirani odsjeci SEL 83,3 Hz
HR_TC_230	Izolirani odsjeci Siemens 83,3 Hz
HR_TC_240	Kolosije?ni/Tirni relej
HR_TC_250	MS2000
HR_WS_100	Magnetski tra?ni?ki kontakti Bs SK 9684/154 A
HR_WS_110	RSR122 used in Croatia
HR_WS_120	RSR180 used in Croatia
HU_AC_100	RSR
HU_AC_110	SK30H
HU_AC_120	SK30K used in Hungary
HU_AC_130	WSD
HU_AC_140	ZK24-2 used in Hungary
HU_AC_150	ZPD43
HU_LP_100	S&B
HU_TC_100	13 kHz
HU_TC_110	400 Hz
HU_TC_120	75 Hz used in Hungary
IE_TC_100	Track Circuits (16 types)
IE_TC_110	Vehicle Overhang at end axle
IT_AC_100	AXLE COUNTER before RFI DTCDNSSSTB SR IS 11 005 C 29/11/06
IT_AC_110	AXLE COUNTER DUCATI HW 2.4 /

Code	Value
	2.5 - SW 4.0 (RFI DTCDNSSSTB SR IS 11 005 C 29/11/06)
IT_AC_120	AXLE COUNTER ECM v2.8 and v3.01 (RFI DTCDNSSSTB SR IS 11 005 C 29/11/06)
IT_TC_100	50 Hz TRACK CIRCUIT INTEGRATED IN ELECTRONIC INTERLOCKING CCB9 - CB18C
IT_TC_110	50 Hz TRACK CIRCUIT INTEGRATED IN ELECTRONIC INTERLOCKING CDB
IT_TC_120	50 Hz TRACK CIRCUIT INTEGRATED IN ELECTRONIC INTERLOCKING DEV/DEP - CDBC
IT_TC_130	50 Hz TRACK CIRCUIT INTEGRATED IN ELECTRONIC INTERLOCKING FTC/OC - FTC/LB
IT_TC_140	50 Hz TRACK CIRCUIT INTEGRATED IN ELECTRONIC INTERLOCKING MGRC - STDS
IT_TC_150	CONVENTIONAL ELECTROMECHANICAL TRACK CIRCUIT "STAND-ALONE" CdB a 50 Hz a doppia fuga di rotaia isolata con relè a disco alimentati a correnti fisse Relè a corrente alternata a due elementi, due posizioni tipo FS a

Code	Value
	disco (NT IS292 Ed. 1972)
IT_TC_160	CONVENTIONAL ELECTROMECHANICAL TRACK CIRCUIT "STAND-ALONE" CdB a 50 Hz a doppia fuga di rotaia isolata con relè a disco elettronico alimentati a correnti fisse Relè a disco elettronico (RFI DTCSTSSSTB SR IS 21 028 C 18/2/2016)
IT_TC_170	CONVENTIONAL ELECTROMECHANICAL TRACK CIRCUIT "STAND-ALONE" CdB a 50 Hz a doppia fuga di rotaia isolata del BACC alimentati a correnti codificate
IT_TC_180	CONVENTIONAL ELECTROMECHANICAL TRACK CIRCUIT "STAND-ALONE" CdB a 50 Hz ad una fuga di rotaia isolata con relè a disco elettronico Relè a disco elettronico (RFI DTCSTSSSTB SR IS 21 028 C 18/2/2016)
IT_TC_190	CONVENTIONAL ELECTROMECHANICAL TRACK CIRCUIT "STAND-ALONE" CdB a 50 Hz ad una fuga di rotaia isolata con relè a disco Relè a corrente alternata a due elementi, due posizioni tipo FS a disco (NT IS292 Ed. 1972)
IT_TC_200	CONVENTIONAL ELECTROMECHANICAL TRACK CIRCUIT "STAND-

Code	Value
	ALONE" CdB a 83.3 Hz PSK a doppia fuga di rotaia isolata con relè a disco elettronico alimentati a correnti fisse Relè a disco elettronico (RFI DTCSTSSSTB SR IS 21 028 C 18/2/2016)
IT_TC_210	CONVENTIONAL ELECTROMECHANICAL TRACK CIRCUIT "STAND-ALONE" CdB a 83.3 Hz PSK ad una fuga di rotaia isolata con relè a disco elettronico Relè a disco elettronico (RFI DTCSTSSSTB SR IS 21 028 C 18/2/2016)
IT_TC_220	CONVENTIONAL ELECTROMECHANICAL TRACK CIRCUIT "STAND-ALONE" (mainly used for Level Crossings) CdB tipo "Overlay FSK"
IT_TC_230	CONVENTIONAL ELECTROMECHANICAL TRACK CIRCUIT "STAND-ALONE" (used for Level Crossings) CdB "CoRTo AF" (usato nel PEPL) (RFI DTC STSSSTB SR IS 02 41 A)
IT_WS_100	WHEEL DETECTOR (used for Level Crossings) Electronic Wheel Detector SIPED4D (RFI DTC STSSSTB SR IS 02 41 A)
LT_AC_100	Frauscher RSR122 (hot axle detection)
LT_TC_100	25 Hz track circuits (1435 mm track gauge)

Code	Value
LT_TC_110	DC track circuits (1435 mm track gauge)
LT_TC_120	TRC-AT-C97 track circuits (1435 mm track gauge)
LU_AC_100	Axle counter detectors of type DSS200-45
LU_AC_110	Axle counter detectors of type ZP 43 E (manufactured prior to 2005) (Zählpunkt ZP 43 E (Version vor 2005))
LU_LP_100	Inductive loop (Fahrzeugsensor Scheidt und Bachmann (FSSB))
LU_TC_100	50 Hz track circuit (Gleisstromkreis 50 Hz mit Motorgleisrelais)
LU_TC_110	83.3 Hz track circuit
LU_TC_120	DC track circuit (Circuit de voie à courant continu)
LU_TC_130	125 Hz track circuit
LU_TC_140	83.3 Hz and 125 Hz track circuit
LV_AC_100	ESSO axle counter with DKU wheel detector
LV_TC_100	50 Hz coded track circuits
LV_TC_110	AC 25 Hz track circuits
LV_TC_120	AC 50 Hz track circuits
LV_TC_130	Audio frequency track circuits TRC-3
LV_TC_140	DC impulse track circuits

Code	Value
LV_TC_150	DC track circuits
NL_AC_100	Az L90
NL_AC_110	Ebi Track 2000
NL_AC_120	SCA-2
NL_TC_100	ATB-EG (integrated ATP-system)
NL_TC_110	GRS (75 Hz)
NL_TC_120	GRS 50 Hz used in Netherlands
NL_TC_130	High Voltage Track Circuits (PSSSL)
NL_TC_140	JADE-1
NotApplicable	Not Applicable
PL_TC_100	"Classic" track circuits
PL_TC_110	EOC track circuit
PL_TC_120	EON track circuit
PL_TC_130	SOT track circuit
PT_AC_100	Zp30C
PT_AC_110	ZP43 Cascais
PT_TC_100	125Hz Bifásico
PT_TC_110	50Hz Bifásico Cascais
PT_TC_120	8700Hz
PT_TC_130	DRS
PT_TC_140	ER 428
PT_TC_150	UM 71 TAD/ERC with BU
RO_AC_100	ACM 200
RO_AC_110	ACS2000
RO_AC_120	Az LS
RO_AC_130	Az S 350 U

Code	Value
RO_AC_140	AzLM 6.4
RO_AC_150	BO23
RO_AC_160	UniAC2
RO_TC_100	Circuite de cale electronice tip C 4-64
RO_TC_110	Circuite de cale electronice cu cod numeric în 75 Hz - tip CN-75-6
RO_TC_120	Circuite de cale electronice cu impulsuri de tensiune ridicat? tip CS 24-6
RO_TC_130	Circuite de cale în curent alternativ 2 secven?e
RO_TC_140	Circuite de cale în curent alternativ cu celula descifratoare tip CD 3B
RO_TC_150	Circuite de cale în curent alternativ permanent - 25 Hz
RO_TC_160	Circuite de cale în curent alternativ permanent - 50Hz sau 75 Hz
RO_TC_170	Circuite de cale în curent continu
SE_TC_100	Product #1 - TRV dc track circuit
SI_AC_100	BO23 - ZK24
SI_AC_110	RSR122 used in Slovenia
SI_AC_120	RSR123
SI_AC_130	RSR180 used in Slovenia
SI_AC_140	SK30 used in Slovenia

Code	Value
SI_AC_150	SK30K used in Slovenia
SI_AC_160	TDR14 - ZK24
SI_LP_100	S&B Loop
SI_LP_110	Train current loop
SI_LP_120	Zelisko loop LC
SK_AC_100	BO 23 - ZK24 (ALTPRO)
SK_TC_100	Paralelný - DSR-12
SK_TC_110	Paralelný - DSR-12S
SK_TC_120	Paralelný - DSŠ-12
SK_TC_130	Paralelný - DSŠ-12P
SK_TC_140	Paralelný - DSŠ-12S
SK_TC_150	Paralelný - DSŠ-13
SK_TC_160	Paralelný - DSŠ-13A
SK_TC_170	Paralelný - FID-2
SK_TC_180	Paralelný - FID-3
SK_TC_190	Paralelný - IMVŠ-110
SK_TC_200	Paralelný - iný
SK_TC_210	Paralelný - IRV-110
SK_TC_220	Paralelný - IVG
SK_TC_230	Paralelný - NMVŠ1-1100
SK_TC_240	Paralelný - NMVŠ2-1000/1000
SK_TC_250	Paralelný - NR 1-2
SK_TC_260	Paralelný - NR 2-2
SK_TC_270	Paralelný - NVR1-1000
SK_TC_280	Paralelný - OMŠ
SK_TC_290	Paralelný - TCR

Code	Value
SK_TC_300	Paralelný - WSSB

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
It is applicable only when parameter "Type of train detection system" is applicable

Validation Rules:
Train Detection System Specific Check Skos
Comment: Reference to the technical specification of train detection system.
Message: Indication of specific checks of train detection system installed (1.1.1.3.7.1.2, 1.2.1.1.6.1): The train detection system {$this} (label {?tdsLabel}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/train-detection-specific-checks.
Train Detection System Specific Check Applicability
Comment: Only applicable when 1.1.1.3.7.1.1 is applicable and the declared type is a track circuit or axle counter (per Appendix A-1, index [D]). Not applicable for loops. A value of era-tdssc:NotApplicable is accepted when the system is fully TSI CCS compliant and no specific check is required.
Message: trainDetectionSystemSpecificCheck (1.1.1.3.7.1.2, 1.2.1.1.6.1):The Train Detection System {$this} ({?clsLabel}) has a type (track circuit or axle counter) that makes the trainDetectionSystemSpecificCheck parameter applicable. This error is due to {$this} not having a value for such a parameter. Use era-tdssc:NotApplicable when no specific check is required.
Train Detection System Specific Check
Comment: Reference to the technical specification of train detection system.
Message: trainDetectionSystemSpecificCheck (1.1.1.3.7.1.2, 1.2.1.1.6.1): The train detection system has a train detection system specific check that must be a single IRI. This error may be due to having more than one value or having a value that is not an IRI.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
String containing the name of the TD system for which checks are mentioned in 1.1.1.3.7.1.3.

See also:
https://www.era.europa.eu/system/files/2023-09/index077_-_ERA_ERTMS_033281_v5.pdf

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Document with the procedure(s) related to the type of train detection systems declared in "Type of track

circuits or axle counters to which specific checks are needed" OP

Electronic document from the IM stored by the Agency with precise values in accordance with TSI CCS Article13 and the specification referenced in Appendix A-1, index [D], for the specific check to be performed for train detection systems identified in parameter "Type of track circuits or axle counters to which specific checks are needed".

IRI: *http://data.europa.eu/949/trainDetectionSystemSpecificCheckDocument*

Parameter of

Train Detection System

General Information

Number:
1.1.1.3.7.1.3
1.2.1.1.6.2

XML Name:
CTD_TCCheckDocRef

Deadline:
16 January 2020
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
Other train detection systems (1.1.1.3.7 | 1.2.1.1.6)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
It is applicable only when parameter "Type of train detection system" is applicable

Validation Rules:
Train Detection System Specific Check Document Applicability
Comment: Only applicable when 1.1.1.3.7.1.1 is applicable and the declared type is a track circuit or axle counter (per Appendix A-1, index [D]). Not applicable for loops, nor when 1.1.1.3.7.1.2 is set to era-tdssc:NotApplicable.
Message: trainDetectionSystemSpecificCheckDocument (1.1.1.3.7.1.3, 1.2.1.1.6.2):The Train Detection System {$this} ({?clsLabel}) has a type (track circuit or axle counter) and a specific check that makes the trainDetectionSystemSpecificCheckDocument parameter applicable. This error is due to {$this} not having a value for such a parameter.

Train Detection System Specific Check Document
Comment: Electronic document available in two EU languages from the IM stored by the Agency with precise procedures for the specific check to be performed for train detection systems identified in 1.1.1.3.7.1.2.
Message: trainDetectionSystemSpecificCheckDocument (1.1.1.3.7.1.3, 1.2.1.1.6.2): The track defines the electronic document available in two EU languages value and it must be a Document. This error may be due to having more than one value or having a value that is not a Document.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

See also:
https://www.era.europa.eu/system/files/2023-09/index077_-_ERA_ERTMS_033281_v5.pdf

Section with train detection limitation OP

Specific for route compatibility check on French network.

IRI: *http://data.europa.eu/949/tdsFrenchTrainDetectionSystemLimitation*

Parameter of
Train Detection System

General Information

Number:
1.1.1.3.7.1.4
1.2.1.1.6.3

XML Name:
CTD_TCLimitation

Deadline:
12 months after publication of Article 7 Guide for OP tracks
16 January 2020

Belongs to parameters group
Other train detection systems (1.1.1.3.7 | 1.2.1.1.6)

Data Format

Data Presentation
Section with train detection limitation

Format:
The value of this parameter is an instance of the era:FrenchTrainDetectionSystemLimitation class with all its properties:
- true/false for the existence of a section with train detection limitation
- list of values from 1 to 8 defined in the taxonomy

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Only applicable on running tracks in France

Validation Rules:
Tds French Train Detection System Limitation
Comment: Relates the class train detection system with the class that represents the section with train detection limitation. Specific for route compatibility check on French network.
Message: tdsFrenchTrainDetectionSystemLimitation (1.1.1.3.7.1.4, 1.2.1.1.6.3): The train detection system has a tds french train detection system limitation reference that must be a french train detection system limitation. This error may be due to having more than one value or having a value that is not an instance of a FrenchTrainDetectionSystemLimitation

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Relates the class train detection system with the class that represents the section with train detection limitation. Select the special condition as applicable through National Rule from the List.

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, the data format is a character string with the following structure:
[Y/N]+[N]
where:
- [Y/N] - is the existence of section with train detection limitation
- [N] is a number from 1 to 8 referring to sections with:
[1] Tonnage circulated per track is inferior to 15000 tons/day/track
[2] Directional Interlocking
[3] 45-second delay for directional interlocking
[4] Installation with track circuit announcement
[5] Absence of a shunting assistance pedal in the normal direction of circulation for non-reversible double track lines
[6] Absence of a shunting assistance pedal regardless of the direction of traffic for single track lines and tracks for two way working
[7] Absence of a pedal announcement mechanism
[8] 45-second delay for specific announcement reset devices.

Transitions between systems DP OP

General Information

Number:
1.1.1.3.8
1.2.1.1.7

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
Existence of switch over between different protection, control and warning systems while running (1.1.1.3.8.1 | 1.2.1.1.7.1)
Special conditions to switch over between different class B train protection, control and warning systems (1.1.1.3.8.1.1 | 1.2.1.1.7.1.1)
Existence of switch over between different radio systems (1.1.1.3.8.2 | 1.2.1.1.7.2)
Special instructions to switch over between different radio systems (1.1.1.3.8.2.1 | 1.2.1.1.7.2.1)
Special technical conditions required to switch over between ERTMS/ETCS and Class B systems (1.1.1.3.8.3 | 1.2.1.1.7.3)

Existence of switch over between different protection, control and warning systems while running DP

Indication whether a switch over between different systems whilst running exists.

IRI: *http://data.europa.eu/949/switchProtectControlWarning*

Parameter of
Subset with common characteristics
Track

General Information

Number:
1.1.1.3.8.1
1.2.1.1.7.1

XML Name:
CTS_SwitchProtectControlWarn

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
Transitions between systems (1.1.1.3.8 | 1.2.1.1.7)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Applicable when at least two different protection, control and warning systems exist.

Validation Rules:
Switch Protect Control Warning
Comment: Indication whether a switch over between different systems whilst running exists.
Message: switchProtectControlWarning (1.2.1.1.7.1, 1.1.1.3.8.1): Each track may define the existence of switch over between different protection, control and warning systems while running. This error is due to having more than one value or having a value that is not Y/N (boolean).
Switch Protect Control Warning Applicability
Comment: Applicable ('Y') when at least two different class of protection systems exist.
Message: switchProtectControlWarning (1.2.1.1.7.1, 1.1.1.3.8.1):The track {$this} ({? label}), has more than one protection system defined which makes the switchProtectControlWarning parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Appendix D2 Index
3.4.2

Additional Information

General explanation:
Switch over between different systems whilst running. Installation depends on local conditions.

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj
http://data.europa.eu/eli/reg_impl/2019/773/oj

Special conditions to switch over between different class B train protection, control and warning systems DP

Conditions to switch over between different class B train protection, control and warning systems.

IRI: *http://data.europa.eu/949/conditionsSwitchTrainProtectionSystems*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.8.1.1

1.2.1.1.7.1.1

XML Name:
CTS_SwitchProtectControlWarnCondition

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Transitions between systems (1.1.1.3.8 | 1.2.1.1.7)

Data Format

Data Presentation
String

Format:
NNN

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Applicable when at least two different protection, control and warning systems exist.

Validation Rules:
Conditions Switch Train Protection Systems
Comment: Conditions to switch over between different class B train protection, control and warning systems.
Message: conditionsSwitchTrainProtectionSystems (1.1.1.3.8.1.1, 1.2.1.1.7.1.1): The track has a Special conditions to switch over between different class B train protection, control and warning systems value that must be a string and follow the format [NNN]. The error is due to having more than one value, having a value that is not a string, or it is due to the value not following the pattern.

OPE TSI References

Appendix D2 Index
3.4.2

Additional Information

General explanation:
Switch over between different systems whilst running. Installation depends on local conditions.

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Existence of switch over between different radio systems DP

Indication whether a switch over between different radio systems and no communication system whilst running exists.

IRI: *http://data.europa.eu/949/switchRadioSystem*

Parameter of

Subset with common characteristics
Track

General Information

Number:
1.1.1.3.8.2
1.2.1.1.7.2

XML Name:
CTS_SwitchRadioSystem

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
Transitions between systems (1.1.1.3.8 | 1.2.1.1.7)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Applicable when at least two different radio systems exist.

Validation Rules:
Switch Radio System
Comment: Indication whether a switch over between different radio systems and no communication system whilst running exists.
Message: switchRadioSystem (1.2.1.1.7.2, 1.1.1.3.8.2): Each track may define the existence of switch over between different radio systems. This error is due to having more than one value or having a value that is not Y/N (boolean).
Switch Radio System Applicability
Comment: Applicable ('Y') when at least two different radio systems exist.
Message: switchRadioSystem (1.2.1.1.7.2, 1.1.1.3.8.2):The track {$this} ({?label}), has more than one radio system defined which makes the switchRadioSystem parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Appendix D2 Index
3.4.4

Additional Information

General explanation:
Switch over between different radio systems and no communication system whilst running. Installation depends on local conditions.

The "Indication if other radio systems in normal operation are installed line-side" is given in parameter 1.1.1.3.6.1 / SOL Track Parameter CRS_Installed

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Special instructions to switch over between different radio systems OP

Name and/or reference of the document specifying the Special instructions to switch over between different radio systems.

IRI: *http://data.europa.eu/949/instructionsSwitchRadioSystems*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.8.2.1
1.2.1.1.7.2.1

XML Name:
CTS_SwitchRadioSystemCondition

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Transitions between systems (1.1.1.3.8 | 1.2.1.1.7)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
Applicable when at least two different radio systems exist.

Validation Rules:

Instructions Switch Radio Systems Applicability
Comment: Applicable ('Y') when at least two different radio systems exist.
Message: instructionsSwitchRadioSystems (1.1.1.3.8.2.1, 1.2.1.1.7.2.1):The track {$this} ({?label}), has a more than one radio system defined which makes the instructionsSwitchRadioSystems parameter applicable. This error is due to {$this} not having a value for such a parameter.
Instructions Switch Radio Systems
Comment: Name and/or reference of the document specifying the Special instructions to switch over between different radio systems.
Message: instructionsSwitchRadioSystems (1.1.1.3.8.2.1, 1.2.1.1.7.2.1): The track has Special instructions to switch over between different radio systems value that must be a Document.

OPE TSI References

Appendix D2 Index
3.4.4

Additional Information

General explanation:
The details of the conditions to switch radio systems must be published.

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Special technical conditions required to switch over between ERTMS/ETCS and Class B systems OP

Name and/or reference of the document specifying the Special technical conditions required to switch over between ERTMS/ETCS and Class B systems.

IRI: *http://data.europa.eu/949/conditionsSwitchClassBSystems*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.8.3
1.2.1.1.7.3

XML Name:
CTS_SwitchERTMSClassBCondition

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Transitions between systems (1.1.1.3.8 | 1.2.1.1.7)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Applicable when at least two different class of protection systems exist.

Validation Rules:
Conditions Switch Class Bsystems Applicability
Comment: Applicable ('Y') when at least two different class of protection systems exist.
Message: conditionsSwitchClassBSystems (1.1.1.3.8.3, 1.2.1.1.7.3):The track {$this} ({?label}), has a more than one protection system defined which makes the conditionsSwitchClassBSystems parameter applicable. This error is due to {$this} not having a value for such a parameter.
Conditions Switch Class Bsystems
Comment: Name and/or reference of the document specifying the Special technical conditions required to switch over between ERTMS/ETCS and Class B systems.
Message: conditionsSwitchClassBSystems (1.1.1.3.8.3, 1.2.1.1.7.3): The track has Special technical conditions required to switch over between ERTMS/ETCS and Class B systems value that must be a Document. This error is due to having more than one value or having a value that is not an instance of Document.

OPE TSI References

Appendix D2 Index
3.4.3

Additional Information

General explanation:
The details of the conditions to switch between Class B train protection systems must be published.

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Parameters related to electromagnetic interferences DP

General Information

Number:
1.1.1.3.9
1.2.1.1.8

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
Existence and TSI compliance of rules for magnetic fields emitted by a vehicle (1.1.1.3.9.1 | 1.2.1.1.8.1)
Existence and TSI compliance of limits in harmonics in the traction current of vehicles (1.1.1.3.9.2 | 1.2.1.1.8.2)

Existence and TSI compliance of rules for magnetic fields emitted by a vehicle DP

Indication whether rules exist and are compliant with the TSI.

IRI: *http://data.europa.eu/949/tsiMagneticFields*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.9.1
1.2.1.1.8.1

XML Name:
CEI_TSIMagneticFields

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Parameters related to electromagnetic interferences (1.1.1.3.9 | 1.2.1.1.8)

Data Format

Data Presentation
Boolean

Format:
Y/N

Flags

Applicability Flags:

Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Applicable (Y) only when for parameter 1.1.1.3.7.1 the selected option is wheel detector. The parameter is not applicable when the rules do not exist.

Validation Rules:
Tsi Magnetic Fields
Comment: Indication whether rules exist and are compliant with the TSI.
Message: tsiMagneticFields (1.1.1.3.9.1, 1.2.1.1.8.1): Each track may define the existence and TSI compliance of rules for magnetic fields emitted by a vehicle. This error is due to having more than one value or having a value that is not Y/N (boolean).
Tsi Magnetic Fields Applicability
Comment: Applicable ('Y') only when for parameter 1.1.1.3.7.1.1 the selected option is 'wheel detector'.
Message: tsiMagneticFields (1.1.1.3.9.1, 1.2.1.1.8.1):The track {$this} ({?label}), has a 'train detection system' type ('wheel detector') that makes the tsiMagneticFields parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
The electromagnetic fields generated by rolling stock can interfere with the operation of axle counters and wheel detectors.
'True' means the rules exist and are compliant with the frequency management specified in the TSI.
'False' means the rules exist and are not compliant with the frequency management specified in the TSI.

Verification of compliance with TSI includes application of notified national rules (when they exist) in case of part covered by open point.

See also:
https://www.era.europa.eu/system/files/2023-09/index077_-_ERA_ERTMS_033281_v5.pdf

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Existence and TSI compliance of limits in harmonics in the traction current of vehicles DP

Indication whether rules exist and are compliant with the TSI.

IRI: *http://data.europa.eu/949/tsiTractionHarmonics*

Parameter of
Running track
Subset with common characteristics

General Information

Number:

1.1.1.3.9.2
1.2.1.1.8.2

XML Name:
CEI_TSITractionHarmonics

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
Parameters related to electromagnetic interferences (1.1.1.3.9 | 1.2.1.1.8)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Tsi Traction Harmonics Applicability
Comment: Applicable ('Y') only when for parameter 1.1.1.3.7.1.1 the selected option is 'wheel detector' or 'track circuit'.
Message: tsiTractionHarmonics (1.1.1.3.9.2, 1.2.1.1.8.2): The track {$this} ({?label}), has a 'train detection system' type ('wheel detector' or 'track circuit') that makes the tsiTractionHarmonics parameter applicable. This error is due to {$this} not having a value for such a parameter.
Tsi Traction Harmonics
Comment: Indication whether rules exist and are compliant with the TSI.
Message: tsiTractionHarmonics (1.1.1.3.9.2, 1.2.1.1.8.2): Each track may define the existence and TSI compliance of limits in harmonics in the traction current of vehicles. This error is due to having more than one value or having a value that is not Y/N (boolean).

Additional Information

General explanation:
Compatibility with track circuits and wheel detectors of axle counters.

The harmonics in the traction current in the rails can interfere with the operation of track circuits. The DC current in the rails may saturate the detectors of the axle counters, preventing their operation.

'Y' means the rules exist and are compliant with the frequency management specified in the TSI.
'N' 'means the rules exist and are not compliant with the frequency management specified in the TSI.

Verification of compliance with TSI includes application of notified national rules (when they exist) in case of part covered by open point.
LOC&PAS TSI : Appendix J-2, index 1, clause 3.2.2

References:

http://data.europa.eu/eli/reg_impl/2023/1695/oj

Line-side system for degraded situation OP

General Information

Number:
1.1.1.3.10
1.2.1.1.9

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
ETCS level for degraded situation (1.1.1.3.10.1 | 1.2.1.1.9.1)
Other train protection, control and warning systems for degraded situation (1.1.1.3.10.2 | 1.2.1.1.9.2)

ETCS level for degraded situation OP

ERTMS / ETCS application level for degraded situation related to the track side equipment.

IRI: *http://data.europa.eu/949/etcsDegradedSituation*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.10.1
1.2.1.1.9.1

XML Name:
CLD_ETCSSituation

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest 12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
Line-side system for degraded situation (1.1.1.3.10 | 1.2.1.1.9)

Data Format

Data Presentation
Concept

Taxonomy Reference:
ETCS Level for Degraded Situations

Values :

Code	Value
10	None
11	0
20	1
50	NTC

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
Mandatory when ETCS is present.

Validation Rules:
Etcs Degraded Situation
Comment: ERTMS / ETCS application level for degraded situation related to the track side equipment.
Message: etcsDegradedSituation (1.1.1.3.10.1, 1.2.1.1.9.1): The track must have an ETCS level for degraded situation value that is an IRI.
Etcs Degraded Situation Skos
Comment: ERTMS / ETCS application level for degraded situation related to The track side equipment.
Message: etcsDegradedSituation (1.1.1.3.10.1, 1.2.1.1.9.1): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-situation/ETCSSituations.
Etcs Degraded Situation Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: etcsDegradedSituation (1.1.1.3.10.1, 1.2.1.1.9.1):The track {$this} ({?label}), has an 'ETCS Level Type' defined that makes the etcsDegradedSituation parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Appendix D2 Index
3.4.1

Additional Information

General explanation:
System for degraded situation.

In case of failure of the ETCS Level for normal operation, train movement can be supervised in another ETCS Level.

If parameter 1.1.1.3.2.1 is not used (no ETCS), no degradation is possible, so only "none" level is possible for degraded .
It assumed that the degraded level has to be lower than the actual operating level.
See also TSI OPE 4.2.3.6. Degraded operation.

Example:
```
Level 1 as a degraded mode for Level 2.
```

See also:
https://eur-lex.europa.eu/eli/reg_impl/2019/773/oj

References:
http://data.europa.eu/eli/reg_impl/2019/773/2023-09-28
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Other train protection, control and warning systems for degraded situation OP

Indication of existence of other system than ETCS for degraded situation.

IRI: *http://data.europa.eu/949/otherTrainProtection*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.10.2
1.2.1.1.9.2

XML Name:
CLD_OtherProtectControlWarn

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Line-side system for degraded situation (1.1.1.3.10 | 1.2.1.1.9)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Other Protection Control and Warnings

Values :

Code	Value
01	ALSN
02	ASFA
04	ATP-VR/RHK
07	Crocodile
09	EVM
10	GW ATP
12	KVB
13	LS
16	RETB
19	SHP
21	TPWS/AWS
23	ZUB 123
25	ATB First generation
26	ATB new generation
27	ATP
28	CAWS
29	Chiltern-ATP
30	DAAT
32	EBICAB 900 ES
33	EuroSIGNUM
34	EuroZUB
36	KCVB
37	KCVP
38	KVBP
39	Mechanical Trainstops
40	NEXTEO
41	PKP radio system with Radiostop function
42	SSC

Code	Value
43	TBL 1
44	TBL 2
45	TBL1+
46	TVM 300
47	TVM 430
48	ATC v2
49	ATC vR
50	EBICAB 700 BU
51	EBICAB 700 PT [CONVEL]
52	GNT [Geschwindigkeitsüberwachung für NeiTech-Züge]
53	INDUSI I60
55	LZB ES
56	PZB 90
57	SCMT + RSC
58	SCMT
59	LZB L72
60	LZB CE I
61	LZB CE II
100	None

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Only applicable when for parameter 1.1.1.3.10.1 "none" was selected.

Validation Rules:

Other Train Protection Skos
Comment: Indication of existence of other system than ETCS for degraded situation.
Message: otherTrainProtection (1.1.1.3.10.2, 1.2.1.1.9.2): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/other-protection-control-warning/OtherProtectionControlWarnings.
Other Train Protection
Comment: Indication of existence of other system than ETCS for degraded situation.
Message: otherTrainProtection (1.1.1.3.10.2, 1.2.1.1.9.2): The track may have other train protection, control and warning systems for degraded situation value that is an IRI. This error is due to having more than one value or having a value that is not an IRI.
Other Train Protection Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: otherTrainProtection (1.1.1.3.10.2, 1.2.1.1.9.2):The track {$this} ({?label}), has an 'ETCS Level Type' defined which makes the otherTrainProtection parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Appendix D2 Index
3.4.1

Additional Information

General explanation:
Selected value shall answer the question whether any other system than ETCS exists on the respective track. The list of possible values is in line with ERA/TD/2011-09/INT, Table 3.

See also:
https://www.era.europa.eu/system/files/2022-11/list_harmonised_national_restriction_codes_en%281%29.pdf?t=1707149802

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj
http://data.europa.eu/eli/reg_impl/2019/773/2023-09-28

Brake related parameters DP OP

General Information

Number:
1.1.1.3.11

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
Maximum braking distance requested (1.1.1.3.11.1)
Availability by the IM of additional information (1.1.1.3.11.2)
Documents available by the IM relating to braking performance (1.1.1.3.11.3)

Maximum braking distance requested DP

The maximum value of the braking distance [in metres] of a train shall be given for the maximum line speed.

IRI: *http://data.europa.eu/949/maximumBrakingDistance*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.11.1

XML Name:
CBP_MaxBrakeDist

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Brake related parameters (1.1.1.3.11)

Data Format

Data Presentation
Integer

Format:
NNNNN

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Maximum Braking Distance
Comment: The maximum value of the braking distance [in metres] of a train shall be given for the maximum line speed.
Message: maximumBrakingDistance (1.1.1.3.11.1): The track must define at most one value of the maximum value of the braking distance [in metres] of a train and it is an integer. This error may be due to the track having more than one value or to having a value that is not an integer.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:

This distance corresponds to the smallest physical distance between signals of the section of line at V max, taking into account the effect of gradient, minus the value of the safety margin used by the IM.

The braking capability of a train allows it to respect this braking distance.

Note that the OPE TSI provides for an exchange of detailed information between the infrastructure manager and the railway undertaking to ensure safe operation.

See also:
- OPE TSI: 4.2.2.6
- CCS TSI: 4.2.2

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj
http://data.europa.eu/eli/reg_impl/2019/773/oj

Availability by the IM of additional information DP

Availability by the IM of additional information as defined in point (2) of point 4.2.2.6.2 of Regulation (EU) 2023/1693 - TSI OPE

IRI: *http://data.europa.eu/949/hasAdditionalBrakingInformation*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.11.2

XML Name:
CBP_AddInfoAvailable

Deadline:
16 January 2020

Belongs to parameters group
Brake related parameters (1.1.1.3.11)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:

Has Additional Braking Information
Comment: Availability by the IM of additional information as defined in 4.2.2.6.2 (2) Regulation XXX-OPE TSI.
Message: hasAdditionalBrakingInformation (1.1.1.3.11.2): The track must define at most one value of the availability by the IM of additional information and it is Y/N (boolean). This error may be due to the track having more than one value or to having a value that is not Y/N (boolean).

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
[See TSI OPE 4.2.2.6.2 (2)]

Documents available by the IM relating to braking performance OP

Electronic document available in two EU languages from the IM stored by the Agency providing additional information as defined in point (2) of point 4.2.2.6.2 of TSI OPE.

IRI: *http://data.europa.eu/949/additionalBrakingInformationDocument*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.11.3

XML Name:
CBP_BrakePerfDocRef

Deadline:
16 January 2020

Belongs to parameters group
Brake related parameters (1.1.1.3.11)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Only applicable when for parameter 1.1.1.3.11.2 True is selected

Validation Rules:

Additional Braking Information Document
Comment: Documents available by the IM relating to braking performance.
Message: additionalBrakingInformationDocument (1.1.1.3.11.3): The track defines the documents available by the IM relating to braking performance value and it must be a Document.
Additional Braking Information Document Applicability
Comment: Electronic document available in two EU languages from the IM stored by the Agency providing additional information as defined in point (2) of point 4.2.2.6.2 of TSI OPE.
Message: additionalBrakingInformationDocument (1.1.1.3.11.3): This error is due to the track {?trackLabel} , violating the rule: Y in case of Y for 1.1.1.3.11.2.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Automated Train Operation (ATO) OP

General Information

Number:
1.1.1.3.13
1.2.1.1.10

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
ATO Grade of Automation (1.1.1.3.13.1 | 1.2.1.1.10.1)
ATO System version (1.1.1.3.13.2 | 1.2.1.1.10.2)
ATO communication system (1.1.1.3.13.3 | 1.2.1.1.10.3)

ATO Grade of Automation OP

ATO grade of automation installed lineside.

IRI: *http://data.europa.eu/949/atoGradeAutomation*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.13.1
1.2.1.1.10.1

XML Name:
CAO_ATOGradeAutomation

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Automated Train Operation (ATO) (1.1.1.3.13 | 1.2.1.1.10)

Data Format

Data Presentation
Concept

Taxonomy Reference:
ATO Grade of Automation

Values :

Code	Value
0	0
1	1
2	2
3	3
4	4

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
Parameter only applicable when ETCS Baseline > 4 MR1 and ATO is implemented

Validation Rules:
Ato Grade Automation
Comment: ATO grade of automation installed lineside.
Message: atoGradeAutomation (1.1.1.3.13.1, 1.2.1.1.10.1): The track must have a ATO grade of automation installed lineside value that is an IRI.
Ato Grade Automation Skos
Comment: ATO grade of automation installed lineside.
Message: atoGradeAutomation (1.1.1.3.13.1, 1.2.1.1.10.1): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/ato-grades-automation/ATOGradeOfAutomation.

OPE TSI References

Appendix D2 Index

3.4.8

Additional Information

General explanation:

ATO is an optional function added in ETCS B4, only available under L2. See: TSI CCS, 4.2.4 & 4.2.19.

Parameter only applicable when ETCS Baseline > 4 MR1 and ATO is implemented

References:

http://data.europa.eu/eli/reg_impl/2023/1695/oj
http://data.europa.eu/eli/reg_impl/2019/773/oj

ATO System version OP

ATO system version according to the specification referenced in TSI CCS 2023/1695

IRI: *http://data.europa.eu/949/atoSystemVersion*

Parameter of

Running track
Subset with common characteristics
Vehicle Type

General Information

Number:

1.1.1.3.13.2
1.2.1.1.10.2

XML Name:

CAO_ATOSystemvers

Deadline:

12 months after publication of Article 7 Guide

Belongs to parameters group

Automated Train Operation (ATO) (1.1.1.3.13 | 1.2.1.1.10)

Data Format

Data Presentation

Concept

Taxonomy Reference:

ATO System Versions

Values :

Code	Value
0	Non-harmonised
1	1.0

Flags

Applicability Flags:

Y/N/NYA

Validation

Dependencies:
Parameter only applicable when ETCS Baseline > 4 MR1 and ATO is implemented

Validation Rules:
Ato System Version
Comment: ATO system version according to the specification referenced in TSI CCS (4.2.19).
Message: atoSystemVersion (1.1.1.3.13.1, 1.2.1.1.10.1): The track must have a ATO system version value that is an IRI.
Ato System Version Skos
Comment: ATO system version according to the specification referenced in TSI CCS (4.2.19).
Message: atoSystemVersion (1.1.1.3.13.1, 1.2.1.1.10.1): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/ato-s-versions/ATOSystemVersions.

OPE TSI References

Appendix D2 Index
3.4.8

Additional Information

General explanation:
ATO is an optional function added in ETCS B4, only available under L2. See: TSI CCS, 4.2.4 & 4.2.19.

Parameter only applicable when ETCS Baseline > 4 MR1 and ATO is implemented

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

ATO communication system OP

Supported ATO communication systems from trackside.

IRI: *http://data.europa.eu/949/atoCommunicationSystem*

Parameter of

Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.3.13.3
1.2.1.1.10.3

XML Name:
CAO_ATOCommSystem

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Automated Train Operation (ATO) (1.1.1.3.13 | 1.2.1.1.10)

Data Format

Data Presentation
Concept

Taxonomy Reference:
ATO Communication System

Values :

Code	Value
gsmr	Gsmr
public	Public

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
Parameter only applicable when ETCS Baseline > 4 MR1 and ATO is implemented

Validation Rules:
Ato Communication System Skos
Comment: Supported ATO communication systems from trackside.
Message: atoCommunicationSystem (1.1.1.3.13.3, 1.2.1.1.10.3): The track {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/ato-commsys/ATOCommSystem.
Ato Communication System
Comment: Supported ATO communication systems from trackside.
Message: atoCommunicationSystem (1.1.1.3.13.3, 1.2.1.1.10.3): The track must have a ATO communication system value that is an IRI.

OPE TSI References

Appendix D2 Index
3.4.9

Additional Information

General explanation:
ATO system communication system to the specification referenced in TSI CCS (4.2.4 & 4.2.19).
Parameter only applicable when ETCS Baseline > 4 MR1 and ATO is implemented

References:
http://data.europa.eu/eli/reg_impl/2023/1695/oj

Signal DP OP

General Information

Number:
1.1.1.3.14

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
Name of signal (1.1.1.3.14.1 | 1.2.1.0.8.1)

Type of signal (1.1.1.3.14.2 | 1.2.1.0.8.2)
Signal orientation (1.1.1.3.14.3 | 1.2.1.0.8.3)
Relative distance of the danger point (1.1.1.3.14.4 | 1.2.1.0.8.4)
Kilometer number (1.2.0.0.0.6)

Name of signal DP

Identifier of signal.

IRI: *http://data.europa.eu/949/signalId*

Parameter of

Signal

General Information

Number:

1.1.1.3.14.1
1.2.1.0.8.1

Deadline:

12 months after publication of Article 7 Guide

Belongs to parameters group

Signal (1.1.1.3.14)
Identifier

Data Format

Data Presentation

String

Flags

Applicability Flags:

Y/N/NYA

Has Characteristics:

Functional property (unique value)

Validation

Validation Rules:

Signal Id
Comment: Operational identifier of the signal (on the track or in OP), as in the operational and maintenance provisions.
Message: signalId (1.1.1.3.14.1, 1.2.1.0.8.1): A Signal may have at most one signal id and it must be represented as a String. This error may be due to having more than one value or having a value that is not a string

OPE TSI References

Appendix D2 Index

2.3.3

Additional Information

General explanation:

Operational identifier of the signal (on the track or in OP), as in the operational and maintenance provisions.

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Type of signal OP

Signalling information for Route Book compilation. This list shall include fixed signals that protect danger points

IRI: *http://data.europa.eu/949/signalType*

Parameter of

Signal
Subset with common characteristics

General Information

Number:
1.1.1.3.14.2
1.2.1.0.8.2

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Signal (1.1.1.3.14)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Types of Signals, Signs and Markers

Values :

Code	Value	Also Known As	Explanation
00	Main Signal	Protection signal	A fixed signal intended for train movements capable of showing a ‘danger aspect’ and one or more ‘proceed aspects’.
01	Home Signal	Entrance signal	A main signal, intended for trains entering a station.
02	Intermediate Signal		A main signal that is intended for protecting routes inside of an OP
03	Group Intermediate Signal	Intermediate Signal (for Group)	A main signal that is intended for protecting routes inside of an OP, which is combined with an auxiliary signal (often at shunting yard tracks). Note that these auxilairy signals are placed typically inside of the OP and give access to routes towards other tracks in the OP or the SoL.
04	Exit Signal		A main signal that is intended for trains leaving a station
05	Group Exit Signal	Exit Signal (for Group)	A main signal that is intended for trains leaving a station, which is combined with an auxiliary signal (often at shunting yard tracks). Note that these auxilairy signals are placed typically inside of the OP and give access to routes towards other tracks in the OP or the SoL.
06	Block Signal		A main signal, intended for trains on a SoL. Operation by signalman in normal operation.
07	Automatic Block Signal	Block Signal (Automatic)	An automatic Block signal, intended for trains on a SoL. Operation by signalman in degraded operation only (emergency stop).
08	Protection Signal	Main signal	A fixed signal intended for train movements capable of showing a ‘danger aspect’ and one or more ‘proceed aspects’.
09	Stop announcing signal		A fixed signal intended for train movements capable of showing only one or more ‘proceed aspects’, but not showing a ‘danger aspect’ itself.
10	Fixed Speed Home Signal	Home Signal (with fixed speed only)	A main signal, intended for trains entering a station with fixed speed.

Code	Value	Also Known As	Explanation
11	Permissive Signal Aspect		A signal aspect or a signal identification, which enables a main signal to be passed at danger under special conditions, in some member states without specific permission from the signalman
12	Shunting Signal Aspect		A signal aspect or a signal identification, which enables a main signal to be used for shunting. In some cases Shunting signals at danger are valid also for non-shunting train movements.
13	Moving pace signals		A signal category covering signals that indicate a proceed/moving pace indication.
14	Route-indicating signal		A signal category covering signals used to indicate route or direction.
15	Various auxiliary signals on the French National Rail Network		A signal category covering various auxiliary signals used on the French National Rail Network.
16	Exit signals for specific sidings or converging track groups		A signal category covering exit signals applicable to specific sidings or converging groups of tracks.
17	Light shunting signal		A signal category covering light signals used for shunting movements.
18	Signals related to train departures		A signal category covering signals specifically related to the departure of trains.
19	Electric traction specific signals		A signal category covering signals specific to electric traction.
CLEAR	Proceed 'Clear' Signal Aspect		A signal aspect (usually 'green'), indicating a `proceed`-aspect without any further limitation/warning in regards to the next signal.
GROUP	Group Signal	Main/Protection Signal (for Group)	A main/protection signal, which is combined with an auxiliary signal. A group signal must always be observed/respected TOGETHER WITH the auxiliary signal.

Code	Value	Also Known As	Explanation
WARN	Proceed 'Warn' Signal Aspect		A signal aspect (usually 'yellow'), indicating a `proceed`-aspect with a further limitation/warning in regards to the next signal, in some cases the 'Danger STOP' aspect.

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Signal Type
Comment: Signalling information for Route Book compilation.
Message: signalType (1.1.1.3.14.2, 1.2.1.0.8.2): The signal type must be represented as an IRI.This error may be due to having a value that is not an IRI.
Signal Type Skos
Comment: Signalling information for Route Book compilation.
Message: Indication of the signalType (1.1.1.3.14.2, 1.2.1.0.8.2): The signal {$this} has a value {? concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/signal-types/.

OPE TSI References

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2.3.3

Additional Information

General explanation:
Indicates what function the signal (on the track or in OP) executes in relation to the track/switches.

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Signal orientation OP

Relative position to the line of reference, given in km and indication if the signal refers to normal or opposite track direction

IRI: *http://data.europa.eu/949/signalOrientation*

Parameter of

Signal
Subset with common characteristics

General Information

Number:
1.1.1.3.14.3
1.2.1.0.8.3

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Signal (1.1.1.3.14)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Directions of the orientation of a railway element

Values :

Code	Value
00	Normal
01	Opposite
02	Both

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Signal Orientation
Comment: Indication if the signal (on the track or in OP) is applicable for operation on normal, opposite track direction or if it contains bidirectionally valid information (radio-based system only).
Message: signalOrientation (1.1.1.3.14.3, 1.2.1.0.8.3): A Signal may have an orientation and it must be represented as an IRI. This error may be due to having a value that is not an IRI.
Signal Orientation Skos
Comment: Indication if the signal (on the track or in OP) is applicable for operation on normal, opposite track direction or if it contains bidirectionally valid information (radio-based system only).
Message: Indication of the signalOrientation (1.1.1.3.14.3, 1.2.1.0.8.3):): The signal {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/orientations/OrientationDirections.

OPE TSI References

Appendix D2 Index
2.2.3

Additional Information

General explanation:
Indication if the signal is applicable for operation on normal, opposite track direction or if it contains bidirectionally valid information (radio-based system only).

The position of the signal is given in relation to a line reference, using the era:netReference property. In general it represents the kilometric point on the main line where the signal is positioned, or a distance from an origin point, when there are no kilometric posts available on the tracks/sidings. See the example.

Example:

```
@prefix era: <http://era.europa.eu/949/> .
@prefix era-orient: <http://data.europa.eu/949/concepts/orientations/> .
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .

era:signal1 a era:Signal ;
    #signal's position
    era:netReference [
        a era:NetPointReference ;
        era:hasLrsCoordinate [
            a era:LinearPositioningSystemCoordinate ;
            era:kmPost era:kp5 ;
            era:offsetFromKilometricPost 231;
            rdfs:label "5+231"@en ;
        ]
    ];
    #signal's orientation (Normal)
    era:signalOrientation era-orient:00.

era:kp5 a era:KilometricPost ;
    era:hasLRS [
        a era:LinearPositioningSystem ;
        era:lineId "National line 1"
    ] ;
    era:kmPostName "km 5" ;
    era:measuredDistance 4995 .
```

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Relative distance of the danger point DP

Distance in meters to the danger point

IRI: *http://data.europa.eu/949/relativeDistanceDangerPoint*

Parameter of
Signal

General Information

Number:
1.1.1.3.14.4
1.2.1.0.8.4

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Signal (1.1.1.3.14)

Data Format

Data Presentation
Integer

Format:
NNN

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Relative Distance Danger Point
Comment: Distance in meters to the danger point.
Message: relativeDistanceDangerPoint (1.1.1.3.14.4, 1.2.1.0.8.4): The distance in meters to the danger point must be represented as an integer and follow the pattern [NNN].This error may be due to having a value that is not an integer or that does not follow the pattern.

OPE TSI References

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2.2.3

Additional Information

General explanation:
Danger point is defined in ERTMS/ETCS - Glossary of Terms and Abbreviations - version 4.0.0 - date 05/07/2023.
For installations without ERTMS, the signalling definition is equivalent.

See also:
TSI OPE Appendix D2 (2.3.3), the danger point relative distance from the signal itself.

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Rules and restrictions DP OP

General Information

Number:
1.1.1.4
1.2.3

Belongs to parameters group
RINF Technical characteristic

Related parameters
Existence of rules and restrictions of a strictly local nature (1.1.1.4.1 | 1.2.3.1)
Documents regarding the rules or restrictions of a strictly local nature available by the IM (1.1.1.4.2 | 1.2.3.2)

Existence of rules and restrictions of a strictly local nature DP

Existence of rules and restrictions of a strictly local nature

IRI: *http://data.europa.eu/949/localRulesOrRestrictions*

Parameter of

Operational Point
Running track
Subset with common characteristics

General Information

Number:
1.1.1.4.1
1.2.3.1

XML Name:
RUL_LocalRulesOrRestrictions

Deadline:
1 January 2021

Belongs to parameters group
Rules and restrictions (1.1.1.4 | 1.2.3)

Data Format

Data Presentation
Boolean

Format:
Y/N

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Local Rules Or Restrictions
Comment: Existence of rules and restrictions of a strictly local nature.
Message: localRulesOrRestrictions (1.1.1.4.1, 1.2.3.1): Each track may define the existence of rules and restrictions of a strictly local nature. This error is due to having more than one value or having a value that is not Y/N (boolean).

Additional Information

General explanation:

There is a general obligation for Member States to notify existing national rules but: Member States may decide not to notify rules and restrictions of a strictly local nature. In such cases, Member States shall mention those rules and restrictions in the registers of infrastructure.
In this eventuality, this parameter allows the IM accordingly to its Member State decision to declare the existence of such rules and to provide them with the parameter 'Documents regarding the rules or restrictions of a strictly local nature available by the IM'

Documents regarding the rules or restrictions of a strictly local nature available by the IM OP

Electronic document available from the IM stored by the Agency providing additional information.

IRI: *http://data.europa.eu/949/localRulesOrRestrictionsDoc*

Parameter of

Operational Point
Running track
Subset with common characteristics

General Information

Number:
1.1.1.4.2
1.2.3.2

XML Name:
RUL_LocalRulesOrRestrictionsDocRef

Deadline:
1 January 2021

Belongs to parameters group
Rules and restrictions (1.1.1.4 | 1.2.3)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Mandatory to provide at least a document if parameter "Existence of rules and restrictions of a strictly local nature" value is boolean "Yes"

Validation Rules:

Local Rules Or Restrictions Doc Applicability
Comment: Only applicable when localRulesOrRestrictions is true.
Message: localRulesOrRestrictionsDoc (1.1.1.4.2, 1.2.3.2): The track, subset with common characteristics or operational point {$this} ({?label}), has 'localRulesOrRestrictions' value 'true' which makes the localRulesOrRestrictionsDoc parameter applicable. This error is due to {$this} not having a value for such a parameter.
Local Rules Or Restrictions Doc
Comment: Electronic document available from the IM stored by the Agency providing additional information.
Message: localRulesOrRestrictionsDoc (1.1.1.4.2, 1.2.3.2): The track has a value of the document regarding the rules or restrictions of a strictly local nature available by the IM, that must be a Document.

Additional Information

General explanation:

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

IOD: Notification of national rules Art 14. 11. Member States may decide not to notify rules and restrictions of a strictly local nature. In such cases, Member States shall mention those rules and restrictions in the registers of infrastructure referred to in Article 49

See also:

IOD: Notification of national rules Art 14. 11

Vehicles for which Route compatibility is verified OP

General Information

Number:

1.1.1.5

Belongs to parameters group

RINF Technical characteristic

Related parameters

List of vehicle types already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems (1.1.1.5.1)
List of vehicles already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems (1.1.1.5.2)

List of vehicle types already identified as compatible with Traffic load and load carrying capacity of

infrastructure and train detection systems OP

The infrastructure managers shall provide through RINF the information to the RU regarding list of vehicle types compatible with the route for which they have already verified compatibility for parameter Traffic load and load carrying capacity of infrastructure and train detection systems, where such information is available.

IRI: *http://data.europa.eu/949/vehicleTypesCompatibleTrafficLoad*

Parameter of

Subset with common characteristics

General Information

Number:
1.1.1.5.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Vehicles for which Route compatibility is verified (1.1.1.5)

Data Format

Data Presentation
ERA Document
Vehicle Type

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Vehicle Types Compatible Traffic Load
Comment: List of vehicle types already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems.
Message: vehicleTypesCompatibleTrafficLoad (1.1.1.5.1): The subset with common characteristics may have values for vehicle types compatible with traffic load and each must be an IRI (a Document or VehicleType). This error may be due to having a value that is not an IRI.

List of vehicles already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems OP

The infrastructure managers shall provide through RINF the information or a document to the RU regarding list of vehicles compatible with the route for which they have already verified compatibility for parameter Traffic load and load carrying capacity of infrastructure and train detection systems, where such information is available.

IRI: *http://data.europa.eu/949/vehiclesCompatibleTrafficLoad*

Parameter of
Subset with common characteristics

General Information

Number:
1.1.1.5.2

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Vehicles for which Route compatibility is verified (1.1.1.5)

Data Format

Data Presentation
ERA Document
Vehicle

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Vehicles Compatible Traffic Load
Comment: List of vehicles already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems.
Message: vehiclesCompatibleTrafficLoad (1.1.1.5.2): The subset with common characteristics may have values for vehicles compatible with traffic load and each must be an IRI (a Document or Vehicle). This error may be due to having a value that is not an IRI.

Operational point generic information DP OP

General Information

Number:
1.2.0.0.0

Belongs to parameters group
RINF Technical characteristic

Related parameters
Name of operational point (1.2.0.0.0.1)
Unique OP ID (1.2.0.0.0.2)
Primary location (1.2.0.0.0.3)
Type of operational point (1.2.0.0.0.4)
Type of track gauge changeover facility (1.2.0.0.0.4.1)
Schematic overview of the operational point in digital form (1.2.0.0.0.7)
Schematic overview of the operational point (1.2.0.0.0.7.1)
Digital schematic overview (1.2.0.0.0.7.2)

Name of operational point DP

Name normally related to the town or village or to traffic control purpose.

IRI: *http://data.europa.eu/949/opName*

Parameter of

Operational Point

General Information

Number:
1.2.0.0.0.1

XML Name:
OPName

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Operational point generic information (1.2.0.0.0)

Data Format

Data Presentation
Lang String

Flags

Applicability Flags:
Y

Validation

Validation Rules:
Op Name
Comment: Name normally related to the town or village or to traffic control purpose.
Message: opName (1.2.0.0.0.1): Each Operational Point must have at least one name in English (@en). Additional multilingual names are allowed, but only one value per language tag is permitted. All values must be language-tagged string literals.

OPE TSI References

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2.3.1

Additional Information

General explanation:
Name of OP may not always exist in common use. In such case IM should propose a name for OP.

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Unique OP ID DP

Code composed of country code and alphanumeric operational point code.

IRI: *http://data.europa.eu/949/uopid*

Parameter of

Operational Point

General Information

Number:
1.2.0.0.0.2

XML Name:
UniqueOPID

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Operational point generic information (1.2.0.0.0)
Identifier

Data Format

Data Presentation
String

Format:
CCAAAAAAAAAA
The first part CC is the country code in two-letter system of ISO.
The second part is alphanumeric OP code within the MS.
For example, an OP code could be current abbreviation of name used in route books.
In case of borders point, the code is to be selected in the corresponding list in annex 5.1

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Border Point Valid Code
Comment: Code composed of country code and alphanumeric OP code.
Message: uopid (1.2.0.0.0.2): The OperationalPoint {$this} with id {?uopid} and label {?opLabel} is a border point that references a ReferenceBorderPoint, but its uopid does not match the borderPointId of the referenced point ('{?uopid}' ≠ '{?refId}').
Uopid P
Comment: Code composed of country code and alphanumeric OP code.
Message: uopid (1.2.0.0.0.2): This error is due to having more than one op id, not having an op id, having a value that is not a string, or having a value that does not follow the pattern where the first part 'AA' is the country code in two-letter system of ISO (or 'EU' for border points) and the second part is the alphanumeric OP code within the MS.

Border Point Uopid Prefix

Message: uopid (1.2.0.0.0.2-prefix): The OperationalPoint {$this} with name {?opName} is a border point but its uopid {?uopid} does not start with 'EU' as required.

OPE TSI References

Appendix D2 Index
2.2.2

Additional Information

General explanation:
Explanation on data presentation: The first two characters represent the country code in two-letter system of ISO.
The second part AAAAAAAAAA is maximum 10 Characters String corresponding to OP code within the MS.
'LUAB4' or 'LUAB46TH-G' or 'LUAB4/-_ERT7' are accepted by the validation process.
In case of borders point , the code is to be selected in the corresponding list in annex 5.1 (this first part AA is EU. The second part is AAAAAAAAAA). Any OP ID that is not referenced in the annex 5.1 will not be accepted by the validation process.
In case of domestic borders point , the code will be selected in the corresponding list in annex 5.2 that will be developed later.
Any OP ID that is not referenced in the annex 5.1 will not be accepted by the validation process.
The provided OP ID must be unique within each Member State. The validation has to be made nationally by NRE. The exceptions are Border point and domestic border point that must be referenced in annex 5.1.

See also:
ISO 3166-1 alpha 2

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Primary location OP

Primary location code developed for information exchange in accordance with the TSIs relating to the telematics applications subsystem.

IRI: *http://data.europa.eu/949/primaryLocation*

Parameter of
Infrastructure element

General Information

Number:
1.2.0.0.0.3

XML Name:
OPTafTapCode

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Operational point generic information (1.2.0.0.0)

Data Format

Data Presentation
Primary Location

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Applicable only in case when a primary location exists

Validation Rules:
Primary Location
Comment: Primary location code developed for information exchange in accordance with the TSIs relating to the telematics applications subsystem.
Message: primaryLocation: The infrastructure element has a primaryLocation reference that must be an IRI that refers to an instance of PrimaryLocation.

OPE TSI References

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2.2.2

Type of operational point OP

Type of facility in relation to the dominating operational functions.

IRI: *http://data.europa.eu/949/opType*

Parameter of
Operational Point

General Information

Number:
1.2.0.0.0.4

XML Name:
OPType

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Operational point generic information (1.2.0.0.0)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Operational Point Types

Values :

Code	Value	Explanation
10	Station	large or major railway node with several functions, important for international traffic, basic for national railway system
30	Passenger terminal	station with dominating function of service for passenger traffic, serving as a central hub for passengers, often integrating rail operations with intermodal transport networks and large-scale passenger facilities, including ticketing, waiting areas, and other passenger services
40	Freight terminal	station dominantly serving for loading and unloading of freight trains
50	Depot or workshop	group of tracks used by depot or workshop for rolling stock maintenance
60	Train technical services	group of tracks for servicing trains (parking, washing, etc.)
70	Passenger stop	or halts - small operational point consisting of at least one platform, normally serving mostly for local passenger services, without routing, dispatching, or train management facilities
80	Junction	consists of at least one turnout, normally used mostly for changing direction of trains, with reduced or not existing other functions
90	Border point	located exactly in the point where a border between Member States meets a railway line.
100	Shunting yard	group of tracks used for shunting trains, mostly related to freight traffic
120	Switch	consists of only one switch and the area around it delimited and protected by entry signals, normally used for changing direction of trains, with reduced or not existing other function
130	Private siding	Operational Point allowing to provide more information on the private siding and on the way its is linked to the main network. Its use is left to the discretion of each Member State.

Code	Value	Explanation
140	Domestic border point	designated location on the main lines where the infrastructure responsibilities transition between IMs

Flags

Applicability Flags:

Y

Validation

Validation Rules:

Op Type P

Comment: Type of facility in relation to the dominating operational functions.Each existing case has to be approximated to the one of the above defined types by including size, importance and dominating functions. It is most important to recognize the most important role of specific OP in the network. That is why only one type for one OP is permitted.

Message: opType (1.2.0.0.0.4): Each Operational Point must have exactly one type. This error may be due to having an OP with no type or with more than one type, or its value is not an IRI.

Op Type Skos

Comment: Type of facility in relation to the dominating operational functions. Each existing case has to be approximated to the one of the above defined types by including size, importance and dominating functions. It is most important to recognize the most important role of specific OP in the network. That is why only one type for one OP is permitted.

Message: Type of operational point (1.2.0.0.0.4): The OP {$this} (label {?opLabel}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/op-types/OperationalPointTypes.

OPE TSI References

Appendix D2 Index

2.2.2

Additional Information

General explanation:

Each existing case has to be approximated to the one of the above defined types by including size, importance and dominating functions. It is most important to recognize the most important role of specific OP in the network. That is why only one type for one OP is permitted.

For purpose of RINF, there were defined the following types of OPs:
1. Station - large or major railway node with several functions, important for international traffic, basic for national railway system;
2. Passenger terminal - station with dominating function of service for passenger traffic, serving as a central hub for passengers, often integrating rail operations with intermodal transport networks and large-scale passenger facilities, including ticketing, waiting areas, and other passenger services;
3. Freight terminal - station dominantly serving for loading and unloading of freight trains;
4. Depot or workshop - group of tracks used by depot or workshop for RST maintenance;
5. Train technical services - group of tracks for servicing trains (parking, washing, etc.);
6. Passenger stop - or halts - small OP consisting of at least one platform, normally serving mostly for local passenger services, without routing, dispatching, or train management facilities;
7. Junction - OP consisting of at least one turnout, normally used mostly for changing direction of trains, with reduced or not existing other functions;
8. Border point - located in the point where a border between MSs meets a railway line;
9. Shunting yard - group of tracks used for shunting trains, mostly related to freight traffic;
10. Switch - OP consisting of only one switch and the area around it, delimited and protected by entry signals, normally used for changing direction of trains, with reduced or not existing other functions;
11. Domestic border point - designated location on the main lines where the infrastructure responsibilities transition between IMs.

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Type of track gauge changeover facility DP

Type of track gauge changeover facility.

IRI: *http://data.europa.eu/949/opTypeGaugeChangeover*

Parameter of
Operational Point

General Information

Number:
1.2.0.0.0.4.1

XML Name:
OPTypeGaugeChangeover

Deadline:
16 January 2020

Belongs to parameters group
Operational point generic information (1.2.0.0.0)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Op Type Gauge Changeover
Comment: Type of track gauge changeover facility.
Message: opTypeGaugeChangeover (1.2.0.0.0.4.1): The Operational Point must have at most one value of opTypeGaugeChangeover and its type must be a string.

OPE TSI References

Part of RCC Algorithm:
true

Kilometer number DP

Kilometer number of the kilometric post related to line identification defining the location of an infrastructure element.

IRI: *http://data.europa.eu/949/kilometer*

Also Known As:
Railway location of Operational point

Parameter of
Kilometric Post

General Information

Number:
1.2.0.0.0.6

XML Name:
OPRailwayLocation

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)
Signal (1.1.1.3.14)

Data Format

Data Presentation
Double

Unit of Measure:
Kilometre

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Kilometer
Comment: Distance measured in kilometers from the origin of a national railway line/route.
Message: kilometer (1.1.1.1.8.12.1, 1.1.1.1.8.13.1, 1.1.1.3.14.3, 1.1.1.3.14.7, 1.2.0.0.0.6, 1.2.1.0.5.10.1, 1.2.1.0.5.11.1, 1.2.1.0.8.3, 1.2.2.0.5.10.1, 1.2.2.0.5.9.1): The kilometer must be represented as a double number.

OPE TSI References

Appendix D2 Index
2.2.2

Additional Information

General explanation:

For walkways: Value provided in Kilometric point of the start of the walkway and the length in m. Repeatable values for each location.
For rescue points: Value provided in Kilometric point of the start of the point of evacuation and rescue point and the length in m. Repeatable values for each location.
For signals: Relative position to the line identified under parameter 1.1.0.0.0.2, given in km ([reference point, via era:referent] / [NNN.NNN]).

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Schematic overview of the operational point in digital form DP

The existence of a schematic overview of the operational point in digital form.

IRI: *http://data.europa.eu/949/hasSchematicOverviewOPDigitalForm*

Parameter of
Operational Point

General Information

Number:
1.2.0.0.0.7

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Operational point generic information (1.2.0.0.0)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Has Schematic Overview Opdigital Form
Comment: The existence of a schematic overview of the operational point in digital form.
Message: hasSchematicOverviewOPDigitalForm (1.2.0.0.0.7): The Operational Point has a hasSchematicOverviewOPDigitalForm reference that must be a boolean.

OPE TSI References

Appendix D2 Index
2.1

Schematic overview of the operational point DP

Document providing the schematic overview of the operational point

IRI: *http://data.europa.eu/949/schematicOverviewOP*

Parameter of
Operational Point

General Information

Number:
1.2.0.0.0.7.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Operational point generic information (1.2.0.0.0)

Data Format

Data Presentation
Any Uri

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Schematic Overview Op
Comment: Document providing the schematic overview of the operational point.
Message: schematicOverviewOP (1.2.0.0.0.7.1): The Operational Point may have a schematic overview reference that must be a URI. This error may be due to having a value that is not a URI.

OPE TSI References

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2.1

Digital schematic overview DP

Diagrammatic representation of the operational point in Well Known Text polyline

IRI: *http://data.europa.eu/949/digitalSchematicOverview*

Parameter of
Operational Point

General Information

Number:
1.2.0.0.0.7.2

Deadline:
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
Operational point generic information (1.2.0.0.0)

Data Format

Data Presentation
Wkt Literal

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Digital Schematic Overview
Comment: Diagrammatic representation of the operational point in Well Known Text polyline
Message: digitalSchematicOverview (1.2.0.0.0.7.2): The Operational Point has a digitalSchematicOverview reference that must be a Well Known Text literal.

OPE TSI References

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2.1

Diesel or other thermal traction allowed DP

Indication whether it is allowed to use diesel or other thermal traction in the tunnel

IRI: *http://data.europa.eu/949/dieselThermalAllowed*

Parameter of
Subset with common characteristics
Tunnel

General Information

Number:
1.2.1.0.5.9

XML Name:
ITU_DieselThermAllowed

Deadline:
1 January 2021

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Diesel Thermal Allowed
Comment: Indication whether it is allowed to use diesel or other thermal traction in the tunnel.
Message: dieselThermalAllowed (1.2.1.0.5.9): A Tunnel may have an indication about the permission of thermal traction. This error may be due to having a tunnel with more than one dieselThermalAllowed declaration or having a value type different than Y/N (boolean).

Additional Information

References:
http://data.europa.eu/eli/reg/2014/1303/2024-01-29

Platform DP OP

General Information

Number:
1.2.1.0.6

Belongs to parameters group
RINF Technical characteristic

Related parameters
Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)
Identification of platform (1.2.1.0.6.2)
Usable length of platform (1.2.1.0.6.4)
Height of platform (1.2.1.0.6.5)
Existence of platform assistance for starting train (1.2.1.0.6.6)
Range of use of the platform boarding aid (1.2.1.0.6.7)
Curvature of the platform (1.2.1.0.6.8)

Identification of platform DP

Unique platform identification or unique platform number within an Operational Point.

IRI: *http://data.europa.eu/949/platformId*

Parameter of
Platform edge

General Information

Number:
1.2.1.0.6.2

XML Name:
OPTrackPlatformIdentification

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Platform (1.2.1.0.6)
Identifier

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
No Repeated Platform Ids Op
Comment: Each platform shall have unique identification or number within the OP. This number cannot be used for naming any other platform in the same OP.
Message: platformId (1.2.1.0.6.2):: Each platform shall have unique identification or number within the OP. This number cannot be used for naming any other platform in the same OP. There is a problem with OP {$this} ({?opLabel}) and platforms {?platform1} ({?platform1Label}) and {?platform2} ({?platform2Label}), since they have the same identifier: {?value}.
Platform Id
Comment: Unique platform identification or unique platform number within OP.
Message: platformId (1.2.1.0.6.2): Each Platform must have exactly one platformId. This error may be due to having a platform without or with more than one platformId or it value is not a string.

OPE TSI References

Appendix D2 Index
2.3.5

Additional Information

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Usable length of platform DP

The maximum continuous length (expressed in metres) of that part of platform in front of which a train is intended to remain stationary in normal operating conditions for passengers to board and alight from the train, making appropriate allowance for stopping tolerances.

IRI: *http://data.europa.eu/949/lengthOfPlatform*

Parameter of

Platform edge

General Information

Number:
1.2.1.0.6.4

XML Name:
IPL_Length

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Platform (1.2.1.0.6)
Length

Data Format

Data Presentation
Double

Format:
NNNN

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Length P
Comment: The maximum continuous length (expressed in metres) of that part of platform in front of which a train is intended to remain stationary in normal operating conditions for passengers to board and alight from the train, making appropriate allowance for stopping tolerances.
Message: length (1.2.1.0.6.4): Each Platform must have at most one length. This error may be caused due to having a platform with more than one length or having a value that is not a Real number.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
2.3.6

Additional Information

General explanation:
Platform dimensions are always related to one neighbouring track at a time.
So, if two tracks are along a platform, this platform should be divided into two RINF platforms to have precise description of each.

See also:

INF TSI: 4.2.1, 4.2.9.1
OPE TSI: 4.2.2.5.2, 4.2.2.7.2

References:
http://data.europa.eu/eli/reg/2014/1299/2023-09-28
http://data.europa.eu/eli/reg_impl/2019/773/oj

Height of platform OP

Distance between the upper surface of platform and running surface of the neighbouring track. It is the nominal value expressed in millimetres.

IRI: *http://data.europa.eu/949/platformHeight*

Parameter of

Platform edge
Subset with common characteristics

General Information

Number:
1.2.1.0.6.5

XML Name:
IPL_Height

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Platform (1.2.1.0.6)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Platform Heights

Values :

Code	Value	Also Known As
10	250	250 mm, 250mm
20	280	280 mm, 280mm
30	550	
40	760	760 mm
50	150	150 mm
60	200	200 mm
70	580	
80	680	680 mm
90	685	
100	730	
110	840	840 mm
120	900	
130	915	915mm (UK specific case)
140	920	920 mm
150	960	960 mm
160	1100	
220	220	220 mm
300	300	300 mm (with dual moveable step), 300 mm, 300mm
350	350	350 mm
380	380	380 mm

Flags

Applicability Flags:

Y

Has Characteristics:

Functional property (unique value)

Validation

Validation Rules:

Platform Height P

Comment: Distance between the upper surface of platform and running surface of the neighbouring track. It is the nominal value expressed in millimetres.

Message: platformHeight (1.2.1.0.6.5): Each Platform must have at most one height. This error may be due to having a platform with more than one height, or having a value that is not an URI.

Platform Height Skos
Comment: Distance between the upper surface of platform and running surface of the neighbouring track. It is the nominal value expressed in millimetres.
Message: Platform height (1.2.1.0.6.5): The platform {$this} with label {?label} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/platform-heights/PlatformHeights.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
2.3.7

Additional Information

General explanation:
Values included in the list are taken from PRM and INF TSIs including Specific Cases. They are the values which are mandatory for the design of the platform at the respective part of the network. They are not real values measured at real platforms.
Platform dimensions are always related to one neighbouring track at a time.
So, if two tracks are along a platform, this platform should be divided into two or more 'RINF platforms' to have precise description of each.

See also:
INF TSI: 4.2.9.2
PRM TSI: 4.2.2.11
OPE TSI: 2.3.7 of Appendix D2

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

Existence of platform assistance for starting train DP

Indication of existence of equipment or staff supporting the train crew in starting the train.

IRI: *http://data.europa.eu/949/assistanceStartingTrain*

Parameter of

Platform edge
Subset with common characteristics

General Information

Number:
1.2.1.0.6.6

XML Name:
IPL_AssistanceStartingTrain

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Platform (1.2.1.0.6)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Assistance Starting Train
Comment: Indication of existence of equipment or staff supporting the train crew in starting the train. Fixed equipment (for example mirrors or CCTV cameras) or station staff indicating to train crew or driver when to close doors and whether this has been done successfully.
Message: assistanceStartingTrain (1.2.1.0.6.6): Each Platform must have at most one assistanceStartingTrain declaration. This error may be caused due to having a platform with having more than one assistanceStartingTrain, or its value is not Y/N (boolean).

Range of use of the platform boarding aid DP

Information of the train access level for which the boarding aid can be used.

IRI: *http://data.europa.eu/949/areaBoardingAid*

Parameter of
Platform edge
Subset with common characteristics

General Information

Number:
1.2.1.0.6.7

XML Name:
IPL_AreaBoardingAid

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Platform (1.2.1.0.6)

Data Format

Data Presentation
Integer

Unit of Measure:
Millimetre

Flags

Applicability Flags:

Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Area Boarding Aid
Comment: Information of the train access level for which the boarding aid can be used.
Message: areaBoardingAid (1.2.1.0.6.7): Each Platform must have at most one areaBoardingAid value. This error may be caused due to having a platform with multiple areaBoardingAid values or having a value that is not an integer.

Additional Information

General explanation:
Information of the train access level for which the boarding aid can be used. Data is presented as the vertical difference that is overcome by the platform boarding aid in millimetres. The value “0” means that the platform is not equipped with a platform boarding aid.

Curvature of the platform DP

Indication of the existence of the curvature of the platform.

IRI: *http://data.europa.eu/949/hasPlatformCurvature*

Parameter of

Platform edge
Subset with common characteristics

General Information

Number:
1.2.1.0.6.8

XML Name:
IPL_Curvature

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Platform (1.2.1.0.6)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:

Has Platform Curvature
Comment: Indication of the existence of the curvature of the platform.
Message: hasPlatformCurvature (1.2.1.0.6.8): Each Platform must have at most one hasPlatformCurvature value. This error may be caused due to having a platform with multiple hasPlatformCurvature values or having a value that is not a boolean.

OPE TSI References

Appendix D2 Index
2.3.8

Additional Information

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Permission for charging electric energy storage for traction purposes at standstill DP

Point at which IM authorises charging of electric energy storage for traction purposes at standstill.

IRI:
http://data.europa.eu/949/permissionChargingElectricEnergyTractionStandstill

Parameter of
Platform edge

General Information

Number:
1.2.1.0.7.1

Deadline:
Contrary to the Regulation, the deadline is not 30 June 2024 at the latest, but 12 months after publication of Article 7 Guide

Belongs to parameters group
Contact line system (1.1.1.2.2)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:

Permission Charging Electric Energy Traction Standstill
Comment: Indication if charging electric energy storage for traction purposes at standstill is permitted
Message: permissionChargingElectricEnergyTractionStandstill (1.2.1.0.7.1): The platform edge defines if charging electric energy storage for traction purposes at standstill is permitted. This error is due to having more than one value for this property or having a value that is not Y/N (boolean).

Permitted conditions for charging electric energy storage for traction purposes at standstill DP

Conditions set by IMs according to a standardised document

IRI: *http://data.europa.eu/949/conditionsChargingElectricEnergyStorage*

Parameter of
Platform edge

General Information

Number:
1.2.1.0.7.2

Deadline:
Contrary to the Regulation, the deadline is not 30 June 2024 at the latest, but 12 months after publication of Article 7 Guide

Belongs to parameters group
Contact line system (1.1.1.2.2)

Data Format

Data Presentation
Any Uri

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Conditions Charging Electric Energy Storage
Comment: Indication if charging electric energy storage for traction purposes at standstill is permitted
Message: conditionsChargingElectricEnergyStorage (1.2.1.0.7.2): The platform edge defines the permitted conditions for charging electric energy storage for traction purposes at standstill. This error is due to having more than one value for this property or having a value that is not an URI.

Specific constraints imposed by the GSM-R network operator on ETCS on-board units only able to operate in circuit-switch OP

These constraints, where applicable, are meant to manage the limited number of circuit-switched radio connections that can be handled simultaneously by a Radio Block Center.

IRI: *http://data.europa.eu/949/gsmrConstraintsOperateOnlyInCircuitSwitch*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.2.1.1.2.12

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
GSM-R and ETCS L2 must be installed for this parameter to be applicable. Multiple values are allowed.

Validation Rules:
Gsmr Constraints Operate Only In Circuit Switch Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) and ETCS L2 (parameter 1.1.1.3.2.1) must be installed for this parameter to be applicable.
Message: gsmrConstraintsOperateOnlyInCircuitSwitch (1.2.1.1.2.12):The track {$this} ({?label}), has a 'GSM-R version' defined and a 'ETCS level' type selected which makes the gsmrConstraintsOperateOnlyInCircuitSwitch parameter applicable. This error is due to {$this} not having a value for such a parameter.
Gsmr Constraints Operate Only In Circuit Switch
Comment: Specific constraints imposed by the GSM-R network operator on ETCS on-board units only able to operate in circuit-switch.
Message: gsmrConstraintsOperateOnlyInCircuitSwitch (1.2.1.1.2.12): The track may have GSM-R constraints values and each must be a string. This error may be due to having a value that is not a string.

Additional Information

References:

http://data.europa.eu/eli/reg_impl/2023/1695/oj

Siding DP OP

General Information

Number:
1.2.2

Belongs to parameters group
RINF Technical characteristic

Related parameters
Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)
Minimum radius of horizontal curve (1.1.1.1.3.7 | 1.2.2.0.3.2)
Identification of siding (1.2.2.0.0.2)
Usable length of siding (1.2.2.0.2.1)
Gradient for stabling tracks (1.2.2.0.3.1)
Minimum radius of vertical curve (1.2.2.0.3.3)
Fixed installations for servicing trains (1.2.2.0.4)

Identification of siding DP

Unique siding identification or number within an Operational Point.

IRI: *http://data.europa.eu/949/sidingId*

Parameter of
Siding

General Information

Number:
1.2.2.0.0.2

XML Name:
OPSidingIdentification

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Siding (1.2.2)
Identifier

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
No Repeated Siding Ids
Comment: Each siding shall have unique identification or number within the OP. This number cannot be used for naming any other siding in the same OP.
Message: sidingId (1.2.2.0.0.2):: Each siding shall have unique identification or number within the OP. This number cannot be used for naming any other siding in the same OP. There is a problem with the OP {$this} ({?opLabel}) and sidings {?siding1} ({?siding1Label}) and {?siding2} ({?siding2Label}), since they have the same identifier: {?value}.
Siding Id
Comment: Unique siding identification or unique siding number within OP
Message: sidingId (1.2.2.0.0.2): Each siding must have a unique siding identification that is a character string. This error is due to not having a sidingId value, having more than one sidingId value or having a value that is not a string.

OPE TSI References

Appendix D2 Index
2.2.1.4

Additional Information

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Usable length of siding DP

Total length of the siding/stabling track expressed in metres where trains can be parked safely.

IRI: *http://data.europa.eu/949/lengthOfSiding*

Parameter of
Siding

General Information

Number:
1.2.2.0.2.1

XML Name:
IPP_Length

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Siding (1.2.2)
Length

Data Format

Data Presentation
Double

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Length S
Comment: Total length of the siding/stabling track expressed in meters where trains can be parked safely
Message: lengthOfSiding (1.2.2.0.2.1): Each siding may have a length in meters. This error is due to having more than one length value or having a length that is not a double (real) number or not following the pattern [NNNN].

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.2.3

Additional Information

References:
http://data.europa.eu/eli/reg_impl/2019/773/oj

Gradient for stabling tracks DP

Maximum value of the gradient for stabling tracks expressed in millimetres per metre.

IRI: *http://data.europa.eu/949/gradient*

Parameter of
Siding
Subset with common characteristics

General Information

Number:
1.2.2.0.3.1

XML Name:
ILL_Gradient

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Siding (1.2.2)

Data Format

Data Presentation
Double

Unit of Measure:

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Gradient
Comment: Maximum value of the gradient expressed in millimeters per meter
Message: gradient (1.2.2.0.3.1): Each siding may have a gradient in millimeters per meter. This error is due to having more than one gradient value or having a gradient that is not a double (real) number.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

References:
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

Minimum radius of vertical curve OP

Radius of the smallest vertical curve expressed in metres.

IRI: *http://data.europa.eu/949/minimumVerticalRadius*

Parameter of

Siding
Subset with common characteristics

General Information

Number:
1.2.2.0.3.3

XML Name:
ILL_MinRadVertCurve

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Siding (1.2.2)

Data Format

Data Presentation
Minimum radius of vertical curve

Format:
In RDF: the values points to an instance of era:MinimumVerticalRadius class with 2 properties for the crest and hollow values.
In XML: NNN+NNN

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Minimum Vertical Radius
Comment: Indication of types of appearance of track lineside distance indications.
Message: minimumVerticalRadius (1.2.2.0.3.3) : The siding must have at most one value of minimum vertical radius that must be an instace of MinimumVerticalRadius. This error may be due to the track having more than one value or having a value that is not an instance of the class MinimumVerticalRadius.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The radius of vertical curves (except for humps in marshalling yards) shall be at least 500 m on a crest or 900 m in a hollow.

See also:
INF TSI: 4.2.3.54

References:
http://data.europa.eu/eli/reg/2014/1299/2019-06-16

Fixed installations for servicing trains DP

General Information

Number:
1.2.2.0.4

Belongs to parameters group
Siding (1.2.2)

Related parameters
Existence of toilet discharge (1.2.2.0.4.1)
Existence of external cleaning facilities (1.2.2.0.4.2)
Existence of water restocking (1.2.2.0.4.3)
Existence of refuelling (1.2.2.0.4.4)
Existence of sand restocking (1.2.2.0.4.5)
Existence of electric shore supply (1.2.2.0.4.6)

Existence of toilet discharge DP

Indication whether exists an installation of toilet discharge (fixed installation for servicing trains) as defined in TSI INF

IRI: *http://data.europa.eu/949/hasToiletDischarge*

Parameter of

Siding
Subset with common characteristics

General Information

Number:
1.2.2.0.4.1

XML Name:
ITS_ToiletDischarge

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Fixed installations for servicing trains (1.2.2.0.4)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Toilet Discharge
Comment: Indication whether exists and installation for toilet discharge (fixed installation for servicing trains) as defined in INF TSIs
Message: hasToiletDischarge (1.2.2.0.4.1): Each siding may define the existence of a toilet discharge. This error is due to having more than one has toilet discharge value or having a has has toilet discharge value that is not Y/N (boolean).

Additional Information

References:
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

Existence of external cleaning facilities DP

Indication whether exists an installation of external cleaning facility (fixed installation for servicing trains) as defined in TSI INF

IRI: *http://data.europa.eu/949/hasExternalCleaning*

Parameter of

Siding
Subset with common characteristics

General Information

Number:
1.2.2.0.4.2

XML Name:
ITS_ExternalCleaning

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Fixed installations for servicing trains (1.2.2.0.4)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has External Cleaning
Comment: Indication whether exists and installation for external cleaning facility (fixed installation for servicing trains) as defined in INF TSIs
Message: hasExternalCleaning (1.2.2.0.4.2): Each siding may define the existence of an external cleaning facility. This error is due to having more than one has external cleaning value or having a has external cleaning value that is not Y/N (boolean).

Additional Information

References:
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

Existence of water restocking DP

Indication whether exists an installation of water restocking (fixed installation for servicing trains) as defined in TSI INF

IRI: *http://data.europa.eu/949/hasWaterRestocking*

Parameter of

Siding
Subset with common characteristics

General Information

Number:
1.2.2.0.4.3

XML Name:
ITS_WaterRestocking

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Fixed installations for servicing trains (1.2.2.0.4)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Water Restocking
Comment: Indication whether exists and installation for water restocking (fixed installation for servicing trains) as defined in INF TSIs
Message: hasWaterRestocking (1.2.2.0.4.3): Each siding may define the existence of a water restocking facility. This error is due to having more than one has water restocking value or having a has water restocking value that is not Y/N (boolean).

Additional Information

References:
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

Existence of refuelling DP

Indication whether exists an installation of refuelling (fixed installation for servicing trains) as defined in TSI INF.

IRI: *http://data.europa.eu/949/hasRefuelling*

Parameter of

Siding
Subset with common characteristics

General Information

Number:
1.2.2.0.4.4

XML Name:
ITS_Refuelling

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Fixed installations for servicing trains (1.2.2.0.4)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Refuelling
Comment: Indication whether exists and installation for refuelling (fixed installation for servicing trains) as defined in INF TSIs
Message: hasRefuelling (1.2.2.0.4.4): Each siding may define the existence of a refuelling facility. This error is due to having more than one has refuelling value or having a has refuelling value that is not Y/N (boolean).

Additional Information

References:
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

Existence of sand restocking DP

Indication whether an installation of sand restocking exists (fixed installation for servicing trains).

IRI: *http://data.europa.eu/949/hasSandRestocking*

Parameter of

Siding
Subset with common characteristics

General Information

Number:
1.2.2.0.4.5

XML Name:
ITS_SandRestocking

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Fixed installations for servicing trains (1.2.2.0.4)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Sand Restocking
Comment: Indication whether an installation for sand restocking exists(fixed installation for servicing trains)
Message: hasSandRestocking (1.2.2.0.4.5): Each siding may define the existence of a sand restocking facility. This error is due to having more than one has sand restocking value or having a has sand restocking value that is not Y/N (boolean).

Existence of electric shore supply DP

Indication whether exists an installation of electric shore supply (fixed installation for servicing trains).

IRI: *http://data.europa.eu/949/hasElectricShoreSupply*

Parameter of

Siding
Subset with common characteristics

General Information

Number:
1.2.2.0.4.6

XML Name:
ITS_ElectricShoreSupply

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Fixed installations for servicing trains (1.2.2.0.4)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Electric Shore Supply
Comment: Indication whether an installation for electric shore supply exists (fixed installation for servicing trains)
Message: hasElectricShoreSupply (1.2.2.0.4.6): Each siding may define the existence of an electric shore supply facility. This error is due to having more than one has electric shore supply value or having a has electric shore supply value that is not Y/N (boolean).

Additional Information

References:
http://data.europa.eu/eli/reg/2014/1299/2023-09-28

RINF Technical characteristic DP OP

General Information

Related parameters
Section of line generic information (1.1.0.0.0)
Route book specific parameters (1.1.0.0.1)
Running track generic information (1.1.1.0.0)
Infrastructure subsystem (1.1.1.1)
Energy subsystem (1.1.1.2)
Control-command and signalling subsystem (1.1.1.3)
Rules and restrictions (1.1.1.4 | 1.2.3)
Vehicles for which Route compatibility is verified (1.1.1.5)
Operational point generic information (1.2.0.0.0)

Platform (1.2.1.0.6)
Siding (1.2.2)

Document with operating restrictions or conditions OP

Indication of the document where restrictions or conditions due to partial compliance with the TSI CCS are described.

IRI: *http://data.europa.eu/949/etcsRestrictionsConditionsDoc*

Parameter of

Subset with common characteristics
Track

General Information

Belongs to parameters group

TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation

ERA Document

Flags

Applicability Flags:

Y/N/NYA

Has Characteristics:

Functional property (unique value)

Validation

Dependencies:

A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:

Etcs Restrictions Conditions Doc
Comment: Indication of the document where restrictions or conditions due to partial compliance with the TSI CCS are described.
Message: etcsRestrictionsConditionsDoc (1.1.1.3.2.6, 1.2.1.1.1.6): The ETCS or subset has a document regarding the rules or restrictions of a strictly local nature available by the IM value that must be a Document.
Etcs Restrictions Conditions Doc Applicability
Comment: Only applicable when hasETCSRestricionsConditions is true.
Message: etcsRestrictionsConditionsDoc (1.1.1.3.2.6, 1.2.1.1.1.6):The ETCS or subset {$this} ({?label}), has a 'has ETCS Restricions Condition' value 'true' which makes the etcsRestrictionsConditionsDoc parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:

If not `false` (property hasEtcsRestrictionsConditions), a link to the conditions must be provided. The RU has to contact the IM to be informed about these conditions. These conditions and restrictions of use are considered in section 6.4 of the CCS TSI. They should be described using the template available on Agency website (Certification and deviations - Guidelines for using the ERA template) with the following link.

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

See also:
https://www.era.europa.eu/system/files/2022-11/restrictions_and_added_functions_en_1.doc
https://www.era.europa.eu/content/certification-issues

6. Auxiliary Properties for RINF Parameters

Activity OP

IRI: *http://www.w3.org/ns/prov#activity*

General Information

Related parameters
Change activity

Aggregates OP

Specifies the linear elements aggregated by a non-linear element.

IRI: *http://data.europa.eu/949/aggregates*

Parameter of
Non-Linear Element

Data Format

Data Presentation
Linear Element

Validation

Validation Rules:

Aggregates
Comment: Specifies the linear elements aggregated by a non-linear element.
Message: aggregates: The non linear element may aggregate only linear elements. This error is due having a value that is not an instance of LinearElement.

Allocation company OP

The organisation in charge to allocate the code for the subsidiary location.

IRI: *http://data.europa.eu/949/allocationCompany*

Parameter of
Subsidiary location

Data Format

Data Presentation
Organisation Role

Validation

Validation Rules:
Allocation Company
Comment: The organisation in charge to allocate the code for the subsidiary location.
Message: allocationCompany: An instance of subsidiary location may have a value for allocation company. This error may be due to having a value that is not an IRI or that does not point to an instance of OrganisationRole.

Alternative Code DP

Alternative code resulting of the integration of RISC into SRMO for managing organisation code

IRI: *http://data.europa.eu/949/alternativeCode*

Also Known As:
RISC code

Parameter of
Body

General Information

Belongs to parameters group
Identifier

Data Format

Data Presentation
String

Validation

Validation Rules:

Alternative Code

Comment: Alternative code resulting of the integration of RISC into SRMO for managing organisation code.

Message: alternativeCode: A Body may have at most one alternativeCode, and it must be a string. This error may be due to having a value that is not a string or having more than one alternativeCode.

Additional Information

General explanation:

Historically a 4 numeric code managed by UIC

Applies in both directions DP

Specifies if the section applies in both directions (optional).

IRI: *http://data.europa.eu/949/appliesInBothDirections*

Parameter of

Linear Element Section

Data Format

Data Presentation

Boolean

Validation

Validation Rules:

Applies In Both Directions

Comment: Specifies if the section applies in both directions (optional).

Message: appliesInBothDirections: The linear element section specifies if the section applies in both directions (optional). This error is due having a value that is not a boolean.

Applies to direction OP

The direction relative to the origin of the linear element towards the point reference applies.

IRI: *http://data.europa.eu/949/appliesToDirection*

Parameter of

Net Point Reference

Data Format

Data Presentation

Concept

Taxonomy Reference:

Directions of the orientation of a railway element

Values :

Code	Value
00	Normal
01	Opposite
02	Both

Validation

Validation Rules:

Applies To Direction
Comment: The direction relative to the origin of the linear element towards the point reference applies.
Message: appliesToDirection: The net point reference must have an 'applies to direction' value that is an IRI.
Applies To Direction Skos
Comment: The direction relative to the origin of the linear element towards the point reference applies.
Message: appliesToDirection: The net point reference {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/orientations/Directions.

AsWKT DP

The WKT serialization of a geometry

IRI: *http://www.opengis.net/ont/geosparql#asWKT*

Also Known As:

Industrial risks locations where it is dangerous for the driver to step out
Accurate geographical description

General Information

Number:

1.1.0.0.1.1
1.1.1.0.1.1
1.1.1.3.14.6
1.2.0.0.0.5
1.2.1.0.8.5

Deadline:

12 months after publication of Article 7 Guide

Flags

Applicability Flags:

Y/N/NYA

Validation

Validation Rules:

Border Point Valid Coordinates Via Net Reference
Comment: Coordinates of topology must be sufficiently similar (within tolerance) to the referenced border point.
Message: Coordinates: The OperationalPoint {$this} with label {?opLabel} is a border point that references a ReferenceBorderPoint, whose topology coordinates are too far from the referenced ReferenceBorderPoint (distance: {?distance} degrees, max allowed: 0.0001 degrees ≈ 11 meters). OP coordinates: {?opWKT} Reference coordinates: {?refWKT}
Border Point Valid Coordinates
Comment: Coordinates must exactly match the referenced border point.
Message: Coordinates: The OperationalPoint {$this} with label {?opLabel} is a border point whose coordinates do not match the referenced ReferenceBorderPoint. OP coordinates: {?opWKT} Reference coordinates: {?refWKT}
As Wkt

Message: geosparql:Geometry. This error may be due to having a Geometry with more than one asWKT property or its value is not of the wktLiteral type.

OPE TSI References

Appendix D2 Index
2.1.2

Belongs to OP

Indicates that an infrastructure element belongs to a certain subset that contains common characteristics.

IRI: *http://data.europa.eu/949/belongsTo*

Parameter of
Infrastructure element

Data Format

Data Presentation
Subset with common characteristics

Validation

Validation Rules:
Belongs To Unique Im
Comment: Each infrastructure element may belong to several common characteristics subsets, and each of them must point to the same infrastructure manager (same organisationCode in the Body linked via OrganisationRole/roleOf).
Message: belongsTo, organisationCode, infrastructureElement: This error is due to {$this} belonging to several common characteristics subsets, {?subset1Label}, {?subset2Label} that do not point to the same infrastructure manager (different organisationCodes on the roleOf Body), {?orgCode1}, {?orgCode2}.
Belongs To
Comment: Relationship between an infratructure element and a common characteristics subset.
Message: belongsTo: The infratructure element may belong to a common characteristics subset, a reference that must be an instance of CommonCharacteristicsSubset. This error is due to having a value that is not an instance of CommonCharacteristicsSubset.

Border point identification DP

Border point identification in the list of reference border points in the RINF application guide.

IRI: *http://data.europa.eu/949/borderPointId*

Parameter of
Reference border point

General Information

Belongs to parameters group
Identifier

Data Format

Data Presentation
String

Validation

Validation Rules:
Border Point Id

Message: A ReferenceBorderPoint must have exactly one era:borderPointId, and it must be a string. This error is due to having more than one borderPointId, not having a borderPointId, having a value that is not a string, or having a value that does not follow the pattern where the first part is 'EU', and the second part is the alphanumeric OP code within the MS.

Carrier linear element OP

The carrier linear element in relation to which the orientation is based on

IRI: *http://data.europa.eu/949/carrierLinearElement*

Parameter of
Orientation

Data Format

Data Presentation
Linear Element

Validation

Validation Rules:
Carrier Linear Element
Comment: The carrier linear element in relation to which the orientation is based on.
Message: carrierLinearElement: The Orientation may reference a LinearElement through carrierLinearElement. This error is due to the value either not being an IRI, or being an IRI that is not an instance of LinearElement.

Change request prevents service DP

Indicates whether the given ERTMS error change request may prevent the system from providing normal service if not implemented or applied.

IRI: *http://data.europa.eu/949/changeRequestPreventsService*

Parameter of

ERTMS error change request

Data Format

Data Presentation

Boolean

Validation

Validation Rules:

Change Request Prevents Service
Comment: Indicates whether the given ERTMS error change request may prevent the system from providing normal service if not implemented or applied.
Message: changeRequestPreventsService: Indicates whether the given ERTMS error change request may prevent the system from providing normal service if not implemented or applied. This error is due to having more than one value for this property or having a value that is not a boolean.

Contact line system OP

System that is used to transmit electrical energy to road or rail vehicles.

IRI: *http://data.europa.eu/949/contactLineSystem*

Parameter of

Running track
Subset with common characteristics

Data Format

Data Presentation

Contact Line System

Validation

Validation Rules:

Contact Line System
Comment: Contact line system present in the section of line.
Message: contactLineSystem (1.2.2.0.6.1, 1.1.1.2.2) : The track may have a value of a contact line system that must be an instance of ContactLineSystem. This error may be due to having a value that is not an instance of the class ContactLineSystem.

Additional Information

General explanation:

It can be repeated as many times as the number of different contact line system types are present.

For RDF data provision:
The value of this property is an instance of the era:ContactLineSystem, which has as properties the parameters 1.1.1.2.2.1.2, 1.1.1.2.2.2, 1.1.1.2.2.4 and 1.1.1.2.5.1.

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, this property is the equivalent of the "Set" attribute, grouping parameters 1.1.1.2.2.1.2, 1.1.1.2.2.2, 1.1.1.2.2.4 and 1.1.1.2.5.1.

Container handling flag DP

Indicates whether a primary location is suitable for handling containers and loading or unloading of containers.

IRI: *http://data.europa.eu/949/containerHandlingFlag*

Parameter of
Primary Location

Data Format

Data Presentation
Boolean

Validation

Validation Rules:
Container Handling Flag
Comment: Indicates whether a primary location is suitable for handling containers and loading or unloading of containers.
Message: containerHandlingFlag : The PrimaryLocation may have a containerHandlingFlag value that is a boolean. This error may be due to the Primary Location having a value that is not a boolean.

Contains OP

Indicates that a subset with common characteristics contains a certain infrastructure element.

IRI: *http://data.europa.eu/949/contains*

Parameter of
Subset with common characteristics

Data Format

Data Presentation
Infrastructure element

Validation

Validation Rules:

Contains
Comment: Relationship between a common characteristics subset and an infrastructure element (inverse of belongsTo).
Message: contains: The subset with common characteristics may contain an infrastructure element, a reference that must be an instance of InfrastructureElement. This error is due having a value that is not an instance of InfrastructureElement.

Direction OP

The direction of the orientation of a railway element, in relation to the carrier linear element

IRI: *http://data.europa.eu/949/direction*

Parameter of

Orientation

Data Format

Data Presentation

Concept

Taxonomy Reference:

Directions of the orientation of a railway element

Values :

Code	Value
00	Normal
01	Opposite
02	Both

Validation

Validation Rules:

Direction Skos
Comment: The direction of the orientation of a railway element, in relation to the carrier linear element.
Message: direction: The Orientation {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined OrientationDirections in the SKOS concept scheme http://data.europa.eu/949/concepts/orientations/OrientationDirections.
Direction
Comment: The direction of the orientation of a railway element, in relation to the carrier linear element.
Message: direction: The Orientation may reference a SKOS concept representing the direction in the form of an IRI. This error is due to the value not being an IRI.

Document URL DP

URL that is used to download a document, e.g. url for a reference document in RINF.

IRI: *http://data.europa.eu/949/documentUrl*

Parameter of
ERA Document

Data Format

Data Presentation
Any Uri

Validation

Validation Rules:
Document Url
Comment: URL that is used to download a document, e.g. url for a reference document in RINF.
Message: documentUrl: The value must be a valid URI (xsd:anyURI).

Element A OP

References the first topological element in an oriented relation.
For example, it may indicate the object that corresponds to a section of line, an operational point or a track inside an operational point connected at start.

IRI: *http://data.europa.eu/949/elementA*

Also Known As:
Internal connection

Parameter of
Net Relation

General Information

Number:
1.1.1.0.1.2
1.2.4.1

Data Format

Data Presentation
Linear Element

Validation

Validation Rules:

Element A
Comment: References the first topological element in an oriented relation. For example, it may indicate the object that corresponds to a section of line, an operational point or a track inside an operational point connected at start.
Message: elementA: The net relation references the first topological object that must be an instance of a linear element. This error is due having a value that is not an instance of LinearElement.

Element B OP

References the second topological linear element in an oriented relation.
For example, it may indicate the object that corresponds to a section of line, an operational point or a track inside an operational point connected at end.

IRI: *http://data.europa.eu/949/elementB*

Also Known As:
Internal connection

Parameter of
Net Relation

General Information

Number:
1.1.1.0.1.2
1.2.4.1

Data Format

Data Presentation
Linear Element

Validation

Validation Rules:
Element B
Comment: References the second topological linear element in an oriented relation. For example, it may indicate the object that corresponds to a section of line, an operational point or a track inside an operational point connected at end.
Message: elementB: The net relation references the second topological object that must be an instance of a linear element. This error is due having a value that is not an instance of LinearElement.

End offset from the origin DP

End offset of the section from the origin.

IRI: *http://data.europa.eu/949/endOffsetFromOrigin*

Parameter of
Linear Element Section

Data Format

Data Presentation
Double

Unit of Measure:
Metre

Validation

Validation Rules:
End Offset From Origin
Comment: End offset of the section from the origin.
Message: endOffsetFromOrigin: The linear element section specifies the end offset of the section from the origin. This error is due having a value that is not a positive integer or more than one value.

Ends at OP

Specifies the ending point of a linear reference.

IRI: *http://data.europa.eu/949/endsAt*

Parameter of
Net Linear Reference

Data Format

Data Presentation
Net Point Reference

Validation

Validation Rules:
Ends At
Comment: Specifies the ending point of a linear reference.
Message: endsAt: The net linear reference specifies an ending point that must be an instance of a NetPointReference. This error is due to not having a value, having more than one value or having a value that is not an instance of NetPointReference.

ETCS baseline OP

ETCS baseline installed lineside.

IRI: *http://data.europa.eu/949/etcsBaseline*

Parameter of
ETCS
Vehicle Type

General Information

Number:
1.1.1.3.2.2

1.2.1.1.1.2

XML Name:
CPE_Baseline

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
ETCS Baselines

Values :

Code	Value
00	Pre-baseline 2 - SRS < 2.2.2
10	Pre-baseline 2 - SRS 2.2.2
20	Baseline 2 - SRS 2.3.0d
30	Baseline 3 - SRS 3.3.0
40	Baseline 3 maintenance release 1 - SRS 3.4.0
50	Baseline 3 release 2 - SRS 3.6.0
60	Baseline 4 (release 1) - SRS 4.0.0

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Etcs Baseline
Comment: ETCS baseline installed lineside
Message: etcsBaseline (1.1.1.3.2.2, 1.2.1.1.1.2): The ETCS may have an ETCS baseline, and its value must be an IRI. This error is due to the ETCS instance having more than one value or having a value that is not an IRI.

Etcs Baseline Skos
Comment: ETCS baseline installed lineside
Message: etcsBaseline (1.1.1.3.2.2, 1.2.1.1.1.2): The ETCS {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-baselines/.
Etcs Baseline Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: etcsBaseline (1.1.1.3.2.2, 1.2.1.1.1.2): The ETCS {$this} ({?thisLabel}), has a ETCS level type which makes the etcsBaseline parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Appendix D2 Index
3.2.7

Additional Information

General explanation:
The ETCS baseline needs to be provided for each available ETCS Level. See: TSI CCS (Table A2)

ETCS national packet 44 application implemented OP

Indication whether data for national applications is transmitted between track and train.

IRI: *http://data.europa.eu/949/etcsNationalPacket44Function*

Parameter of

Subset with common characteristics
Track

General Information

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Concept

Taxonomy Reference:
ETCS national packet 44 application function

Values :

Code	Value
01	MMI Direct
02	SBB, Zub 121 migration in Switzerland Siemens
03	For ZSI 127 (train control system for narrow gauge applications in Switzerland, Spain), can be on lines with 3rd/4th rail, where ETCS equipped trains pass
04	DB-AG
05	For pantograph to third rail switching at Rheinbraun Mining Railway in Germany (telegram structure according to SRS 5A)
06	RFF Functions
07	Bombardier Transportation Rail Control Solutions
08	PSD session establishment information for ETCS over GPRS (Denmark)
09	RSBB (UK)
10	MAV (Hungarian State Railways)
11	Train borne fire alarm (Netherlands)
12	RENFE, Used in Zaragoza-Huesca ERTMS TRK-L1, for the Spanish National functions FN-36
13	SNCB (projects EURO-TBL1 & EURO-TBL2)
14	TRAINGUARD MT – Trainstop

Code	Value
15	TRAINGUARD MT – ITC mode
16	Door release function for Marmaray ERTMS project
17	CBTC balise message embedding for Marmaray ERTMS project
18	SŽ/RU Functions
20	ÖBB
21	IZS
39	Italian Railway FS, used currently in Pkt44 with destination = SCMT NTC
44	Queensland Rail Packet 44 Applications
50	Thales ETCS OBS
97	Localisation NExTEO
98	Track conditions for RER and suburban trains in areas operated with level NTC in France
99	Track conditions for national systems in areas not fitted with ETCS in Belgium
100	Transition Coherence Control
101	SNCF Functions
102	NTC Systems Functions
103	Automatic Selective Door Operation (ASDO) for Transport for New

Code	Value
	South Wales (Australia)
150	Sweden (Banverket)
200	Correct Side Door Enable Function for Auckland Metropolitan Rail Network
210	Correct Side Door Enable Function for Department of Planning, Transport and Infrastructure Network

Flags

Applicability Flags:

Y/N/NYA

Validation

Dependencies:

A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:

Etcs National Packet44function
Comment: Link to the implemented functions for national packet 44 applications that are transmitted between track and train.
Message: etcsNationalPacket44Function (1.1.1.3.2.5, 1.2.1.1.1.5): The ETCS or subset must have a ETCS national packet 44 application implemented function value that is an IRI.
Etcs National Packet44function Skos
Comment: Link to the implemented functions for national packet 44 applications that are transmitted between track and train.
Message: etcsNationalPacket44Function (1.1.1.3.2.5, 1.2.1.1.1.5): The ETCS or subset {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-national-packet-444-functions/ETCSNationalPacket444Functions/.

Additional Information

General explanation:

Value can be `false` or a link to the implemented functions.

Packets 44 are the means to transmit data for national applications between train and track and vice versa, using the data transmission facilities included within the ETCS.
NID_XUSER values managed by ERA in a document about ETCS variables available on ERA website.

European transport corridor OP

Indication of which European Transport Corridor the element belongs to.

IRI: *http://data.europa.eu/949/europeanTransportCorridor*

Parameter of

TEN-T Corridor

Data Format

Data Presentation

Concept

Taxonomy Reference:

European Transport Corridors

Values :

Code	Value
01	Scandinavian - Mediterranean
02	North Sea - Baltic
03	Mediterranean
04	Baltic Sea - Adriatic Sea
05	Atlantic
06	Rhine - Danube
07	Baltic Sea - Black Sea - Aegean Sea
08	Western Balkans - Eastern Mediterranean
09	North Sea - Rhine - Mediterranean

Validation

Validation Rules:

European Transport Corridor
Comment: Indication of which European Transport Corridor the railway line belongs to
Message: europeanTransportCorridor: Each TEN-T corridor classification (era:TENTCorridor) may indicate a European Transport Corridor using an IRI that is a SKOS concept. This error is due to having a value that is not an IRI or not a SKOS concept.
European Transport Corridor Skos
Comment: Indication of which European Transport Corridor the railway line belongs to
Message: European Transport Corridor: The TEN-T corridor classification {$this} has a value {? concept} that is not one of the predefined values in the scheme http://data.europa.eu/949/concepts/european-transport-corridors/EuropeanTransportCorridors.

Freight flag DP

Indicates whether a freight train can perform commercial freight activity at a primary location.

IRI: *http://data.europa.eu/949/freightFlag*

Parameter of
Primary Location

Data Format

Data Presentation
Boolean

Validation

Validation Rules:
Freight Flag
Comment: Indicates whether a freight train can perform commercial freight activity at a primary location.
Message: freightFlag : The PrimaryLocation may have a freightFlag value that is a boolean. This error may be due to the Primary Location having more than one value or having a value that is not a boolean.

Handover point flag DP

Indicates whether a primary location is a point where legal responsibility changes between Infrastructure Managers. This can be, but does not have to be, in conjunction with a state border.

IRI: *http://data.europa.eu/949/handoverPointFlag*

Parameter of
Primary Location

Data Format

Data Presentation
Boolean

Validation

Validation Rules:
Handover Point Flag
Comment: Indicates whether a primary location is a point where legal responsibility changes between Infrastructure Managers. This can be, but does not have to be, in conjunction with a state border.
Message: handoverPointFlag : The PrimaryLocation may have a handoverPointFlag value that is a boolean. This error may be due to the Primary Location having a value that is not a boolean.

Has Beginning OP

Beginning of a temporal entity

IRI: *http://www.w3.org/2006/time#hasBeginning*

Parameter of
Temporal entity

General Information

Belongs to parameters group
Has Time

Data Format

Data Presentation
Time instant

Validation

Validation Rules:
Has Beginning
Comment: Applicability interval defines the date interval in which a characteristic of an infrastructure element is applicable.
Message: hasBeginning: An instance of parameter applicability must have exactly one value of the beginning of the interval in which it is applicable. This error may be due to not having a value, having more than one value, having a value that is not an IRI or is not a time:Instant.

Has bridge DP

Whether or not a track is associated with a bridge.

IRI: *http://data.europa.eu/949/hasBridge*

Parameter of
Running track

Data Format

Data Presentation
Boolean

Validation

Validation Rules:
Has Bridge
Comment: Whether or not a track is associated with a bridge.
Message: hasBridge: The track specifies if it is associated with a bridge and the value must be boolean. This error is due to the value not being Y/N (boolean)

Has End OP

End of a temporal entity.

IRI: *http://www.w3.org/2006/time#hasEnd*

Parameter of
Temporal entity

General Information

Belongs to parameters group
Has Time

Data Format

Data Presentation
Time instant

Validation

Validation Rules:
Has End
Comment: Applicability interval defines the date interval in which a characteristic of an infrastructure element is applicable.
Message: hasEnd: An instance of parameter applicability must have exactly one value of the end of the interval in which it is applicable. This error may be due to not having a value, having more than one value, having a value that is not an IRI or is not a time:Instant.

Has line referencing system coordinate OP

Specifies the LRS coordinate associated with a topological coordinate.

IRI: *http://data.europa.eu/949/hasLrsCoordinate*

Parameter of
Net Point Reference

Data Format

Data Presentation
Linear Positioning System Coordinate

Validation

Validation Rules:
Has Lrs Coordinate
Comment: Specifies the LRS coordinate associated with a topological coordinate.
Message: hasLrsCoordinate: The net point reference specifies an LRS coordinate that must be an instance of a LinearPositioningSystemCoordinate and that in turn references a LinearPositioningSystem. This error is due to having a value that is not a LinearPositioningSystemCoordinate that in turn references a LinearPositioningSystem.

Has linear referencing system OP

Specifies the linear referencing system to which the kilometre post is referenced. The linear referencing system is commonly the main railway line and it provides the framework for identifying the post's location along the railway line, using distance measurements rather than geographical coordinates.

IRI: *http://data.europa.eu/949/hasLRS*

Parameter of
Kilometric Post

Data Format

Data Presentation
Linear Positioning System

Validation

Validation Rules:
Has Lrs Coordinate
Comment: Specifies the LRS coordinate associated with a topological coordinate.
Message: hasLrsCoordinate: The net point reference specifies an LRS coordinate that must be an instance of a LinearPositioningSystemCoordinate and that in turn references a LinearPositioningSystem. This error is due to having a value that is not a LinearPositioningSystemCoordinate that in turn references a LinearPositioningSystem.
Has Lrs
Comment: Specifies the linear referencing system to which the kilometre post is referenced.
Message: hasLRS: The kilometric post must reference a LinearPositioningSystem. This error is due to having a value that is not an instance of LinearPositioningSystem.

Has organisation role OP

Relates the Organisation role instance (the role played by an Organisation) with the specific role in the taxonomy of organisation roles.

IRI: *http://data.europa.eu/949/hasOrganisationRole*

Parameter of
Organisation Role

Data Format

Data Presentation
Concept

Taxonomy Reference:
Organisation roles

Values :

Code	Value	Also Known As	Explanation
AB	Assessment Body	AB	An independent and competent external or internal individual, organisation or entity which undertakes investigation to provide a judgement, based on evidence, of the suitability of a system to fulfil its safety requirements
AB-CSM	Executing independent CSM-assessments		An independent and competent external or internal individual, organisation or entity which undertakes investigation to provide a judgement, based on evidence, of the suitability of a system to fulfil its safety requirements
Applicant	Applicant		A natural or legal person requesting an authorisation, be it a railway undertaking, an infrastructure manager or any other person or legal entity, such as a manufacturer, an owner or a keeper
ASBO	AsBo		
AuthorisingEntity	Authorising Entity		The entity that issues the vehicle type authorisation and/or vehicle authorisation for placing on the market;
CAB	Conformity Assessment Body	CAB	A body that performs conformity assessment activities including calibration, testing, certification and inspection
CAB-NNTR	Executing NNTR verifications		
CAB-TSI	Executing TSI Verifications		
CB	Certification Body	CB	a body, designated in accordance with Article 10 of (EU) No 445/2011, responsible for the certification of entities in charge of maintenance, on the basis of the criteria in Annex II of (EU) No 445/2011
DEBO	DeBo		A conformity assessment body is classified as a ‘designated body’ following designation by a Member State;
DISTR	Distributor	DISTR	

Code	Value	Also Known As	Explanation
EC	European Commission	EC	The European Commission represents the common interests of the EU and is the EU's main executive body. It uses its 'right of initiative' to put forward proposals for new laws, which are scrutinised and adopted by the European Parliament and the Council of the European Union.
ECM	Entity in charge of maintenance	ECM	An entity in charge of the maintenance of a vehicle, and registered as such in a vehicle register referred to in Article 47 of Directive (EU) 2016/797
ECM-b	ECM outsourcing the function provided for in Article 14(3), point (b) of Directive (EU) 2016/798		
ECM-c	ECM outsourcing the function defined in Article 14(3), point (c) of Directive (EU) 2016/798		
ECM-CB	Certification body (accredited or recognised)	CB	a body, designated in accordance with Article 10 of (EU) No 445/2011, responsible for the certification of entities in charge of maintenance, on the basis of the criteria in Annex II of (EU) No 445/2011
ECM-d	ECM outsourcing the function defined in Article 14(3), point (d) of Directive (EU) 2016/798		
ERA	European Union Agency for Railways	ERA	The objective of the Agency shall be to contribute to the further development and effective functioning of a single European railway area without frontiers, by guaranteeing a high level of railway safety and interoperability, while improving the competitive position of the railway sector.
EUBody	EU Body	European Union Body	In addition to the institutions, there are a number of bodies which play specialised roles in helping the EU to fulfil its tasks.

Code	Value	Also Known As	Explanation
			Some bodies have the task of advising the institutions (the European Economic and Social Committee, the European Committee of the Regions); others ensure that the institutions comply with EU rules and procedures (the European Ombudsman, the European Data Protection Supervisor). The European External Action Service is an external policy body that supports the EU on foreign affairs matters.
Holder	Holder		A natural or legal person that has applied for and received the vehicle type authorisation, or its legal successor
IM	Infrastructure Manager	IM	A body or firm responsible for the operation, maintenance and renewal of railway infrastructure on a network, as well as responsible for participating in its development as determined by the Member State within the framework of its general policy on development and financing of infrastructure
IM-1	Infrastructure manager operating railway lines (including sidings and stations operations)	IM-1	
IM-2	Infrastructure manager operating terminals (including sidings and stations operations)	IM-2	
ISS	Issuer	ISS	
ITO	Intermodal Transport Operator	ITO	
Keeper	Railway Vehicle Keeper	Keeper	The natural or legal person that, being the owner of a vehicle or having the right to use it, exploits the vehicle as a means of transport and is registered as such in a vehicle register
LIA	Licensing Authority	Licensing Authority, LIA	Licensing the provision of RU transport services

Code	Value	Also Known As	Explanation
LICA	Licensing authority	LICA	
Manufacturer	Manufacturer		Any natural or legal person who manufactures a product in the form of interoperability constituents, subsystems or vehicles, or has it designed or manufactured, and markets it under his name or trademark
Manufacturer-AB	AB@Manufacturer		An in-house independent CSM-assessment body of a manufacturer
Manufacturer-CAB	CAB@Manufacturer		An in-house conformity assessment body of a manufacturer
MS	Member State	MB	
MWS	Maintenance workshop	MWS	An entity in charge of the maintenance of a vehicle, and registered as such in a vehicle register referred to in Article 47 of Directive (EU) 2016/797
MWS-b	MWS performing the function defined in Article 14(3), points (b) of Directive (EU) 2016/798		
MWS-c	MWS performing the function defined in Article 14(3), points (c) of Directive (EU) 2016/798		
MWS-d	MWS performing the function defined in Article 14(3), points (d) of Directive (EU) 2016/798		
NAB	National Accreditation Body	NAB	The sole body in a Member State that performs accreditation with authority derived from the State
NAB-ASBO	ASBO Accreditation body	NAB for ASBO	
NAB-ECM	ECM Accreditation Body	NAB for ECM	
NIB	National investigating body	NIB	

Code	Value	Also Known As	Explanation
NOBO	NoBo	NoBo	A conformity assessment body is classified as a 'notified body' following notification by a Member State;
NRE	National Registration Entity	NRE	(PRM) Entities are in charge of collecting, maintaining and exchanging the accessibility data.
NSA	National safety authority	NSA	(a) the national body entrusted with the tasks regarding railway safety in accordance with this Directive; (b) any body entrusted by several Member States with the tasks referred to in point (a) in order to ensure a unified safety regime; (c) any body entrusted by a Member State and a third country with the tasks referred to in point (a) in order to ensure a unified safety regime, provided that the Union has concluded an agreement to this effect with the third country concerned or that that Member State has concluded such agreement in accordance with an empowerment granted by the Union to that effect;
NSA-AuthorisingEntity	Authorising Entity within a NSA		The national safety that issues the vehicle type authorisation and/or vehicle authorisation for placing on the market in its own member state;
NSA-ECM-CB	ECM Certification Body within NSA	NSA CB for ECM	
NSA-RU-SCB	Safety Certification Body within NSA	NSA CB for RU	The body responsible for issuing a single safety certificate, for this role a national safety authority
OTIF	OTIF		
Owner	Railway Vehicle Owner	Owner	The natural or legal person being the owner of a vehicle exploited as a means of transport and is registered as such in a vehicle register referred to in Article 47
RB	Representative Body	RB	
RB-ASBO	ASBO Recognition body	RB for ASBO	(b) recognition by the national safety authority of the ability of an organisation or a part of it or an individual to conduct independent assessment through the

Code	Value	Also Known As	Explanation
			assessment and supervision of the safety management system of a railway undertaking or an infrastructure manager;
RB-ECM	ECM Recognition body	RB for ECM	(c) when the national safety authority is acting as certification body in conformity with Article 10 of Regulation (EU) No 445/2011, recognition by the national safety authority of the ability of an organisation or a part of it or an individual to conduct independent assessment through assessment and surveillance of the system of maintenance of an entity in charge of maintenance;
REGB	Regulatory body	REGB	
RETA	Retailer	RETA	
RU	Railway Undertaking	RU	Any public or private undertaking licensed according to this Directive, the principal business of which is to provide services for the transport of goods and/or passengers by rail with a requirement that the undertaking ensure traction; this also includes undertakings which provide traction only
RU-1	Railway Undertaking operating passenger trains	RU-1	
RU-2	Railway Undertaking operating high speed passenger trains	RU-2	
RU-3	Railway Undertaking operating freight trains	RU-3	
RU-4	Railway Undertaking operating dangerous goods freight trains	RU-4	
RU-5	Railway Undertaking operating terminals	RU-5	

Code	Value	Also Known As	Explanation
RU-6	Railway Undertaking providing traction only	RU-6	
RU-SCB	Safety Certification body	CB	The body responsible for issuing a single safety certificate, either the Agency or a national safety authority
SB	Sector Organisation	Sector Body, SB	
SM	Station Manager		
SP	Service Provider	SP	Other actor having a potential impact on the safe operation of the Union rail system
TCO	Ticket Control Organisation	TCO	
TDGCA	Transport of Dangerous Goods Competent Authority	TDG CA	

Validation

Validation Rules:

Has Organisation Role
Comment: The role played in an n-ary relationship between a Body and a specific concept in the concept scheme of organisation roles.
Message: hasOrganisationRole: The organisation role must be represented as an IRI. This error may be due to not having a value, having more than one value, or having a value that is not an IRI.
Has Organisation Role Skos
Comment: The role played in an n-ary relationship between a Body and a specific concept in the concept scheme of organisation roles.
Message: Indication of the hasOrganisationRole: The OrganisationRole {$this} has a value {? concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/organisation-roles/.

Has orientation OP

IRI: *http://data.europa.eu/949/hasOrientation*

Parameter of

Signal

Data Format

Data Presentation

Orientation

Validation

Validation Rules:

Has Orientation

Comment: The orientation of a signal.

Message: hasOrientation: A Signal may have an orientation and it must be an instance of Orientation. This error may be due to having a value that is not an instance of Orientation.

Has part OP

Indicates that an infrastructure element is composed of one or more other (distinct) infrastructure elements.
This property is used to represent part-whole relationships between infrastructure elements.
An element cannot be a part of itself.

IRI: *http://data.europa.eu/949/hasPart*

Parameter of

Infrastructure element

Data Format

Data Presentation

Infrastructure element

Validation

Validation Rules:

Has Part

Comment: Indicates that an infrastructure element is composed of one or more other (distinct) infrastructure elements.

Message: hasPart: The InfrastructureElement may have a hasPart reference that is an IRI that refers to an instance of InfrastructureElement. This error is due to having a value that is not an instance of InfrastructureElement.

Has Part Op

Comment: Reference from an aggregated element to a basic element.

Message: hasPart from an operational point: The Operational Point may have a hasPart reference that is an IRI referring to an InfrastructureElement (or one of its subclasses), or a KilometricPost object.

Has Part So L

Comment: Indicates that a SectionOfLine hasPart at least one Track.

Message: hasPart: The SectionOfLine must have at least one hasPart reference to an instance of Track.

Has sequence OP

The ordered sequence of topological linear elements which create a linear net reference.

IRI: *http://data.europa.eu/949/hasSequence*

Parameter of

Net Linear Reference

Data Format

Data Presentation

List

Validation

Validation Rules:

Has Sequence

Comment: The ordered sequence of topological linear elements which create a linear net reference.

Message: hasSequence: The net linear reference specifies an ordered sequence of topological linear elements that must be an instance of an rdf:List. This error is due to having a value that is not an instance of rdf:List.

Has Serialization DP

IRI: *http://www.opengis.net/ont/geosparql#hasSerialization*

Has Time OP

Supports the association of a temporal entity (instant or interval) to any thing

IRI: *http://www.w3.org/2006/time#hasTime*

General Information

Related parameters

Has Beginning
Has End

Data Format

Data Presentation

Temporal entity

Has topological coordinate OP

Specifies the topological coordinate of a network point reference.

IRI: *http://data.europa.eu/949/hasTopoCoordinate*

Parameter of

Net Point Reference

Data Format

Data Presentation
Topological Coordinate

Validation

Validation Rules:
Has Topo Coordinate
Comment: Specifies the topological coordinate of a network point reference.
Message: hasTopoCoordinate: The net point reference specifies a topo coordinate that must be an instance of a TopologicalCoordinate. This error is due to having a value that is not an instance of TopologicalCoordinate.

HasGeometry OP

A spatial representation for a given feature.

IRI: *http://www.opengis.net/ont/geosparql#hasGeometry*

Parameter of
Feature

General Information

Number:
1.1.0.0.1.1
1.1.1.0.1.1
1.1.1.3.14.6
1.2.0.0.0.5
1.2.1.0.8.5

Related parameters
Start of tunnel location (1.1.1.1.8.3)
End of tunnel (1.1.1.1.8.4)

Data Format

Data Presentation
Geometry

Validation

Validation Rules:
Has Geometry
Comment: Geographical coordinates in decimal degrees normally given for the centre of the OP.
Message: hasGeometry (1.2.0.0.0.5): Each feature must have at most one location. This error may be due to having a feature with more than one location or having a value that is not a geosparql:Geometry.

OPE TSI References

Part of RCC Algorithm:
true

Hot axle box detector (HABD) OP

Link between the running track and the HABD, covering the RINF parameters 1.1.1.1.7.(5-9)

IRI: *http://data.europa.eu/949/tracksideHabd*

Parameter of

Running track
Subset with common characteristics

Data Format

Data Presentation

Hot Axle Box Detector

Validation

Validation Rules:

Trackside Habd
Comment: Link between the running track and the HABD, covering the RINF parameters 1.1.1.1.7.(5-9).
Message: trackside Habd: The track may have hot axle box detector (HABD) references and each must be an instance of HABD. This error may be due to having a value that is not an instance of HABD.

Identifier DP

An unambiguous reference to the resource within a given context.

IRI: *http://purl.org/dc/terms/identifier*

General Information

Related parameters

Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
Line identifier (1.1.0.0.0.2)
Identification of track (1.1.1.0.0.1 | 1.2.1.0.0.2)
Identification of trackside HABD (1.1.1.1.7.6)
Tunnel identification (1.1.1.1.8.2 | 1.2.1.0.5.2 | 1.2.2.0.5.2)
ID of ERTMS/ETCS Radio Block Center (1.1.1.3.2.17 | 1.2.1.1.1.17)
Radio Network ID (1.1.1.3.3.12 | 1.2.1.1.2.13)
Name of signal (1.1.1.3.14.1 | 1.2.1.0.8.1)
Unique OP ID (1.2.0.0.0.2)
Primary location code (1.2.0.0.0.3)
Identification of platform (1.2.1.0.6.2)
Identification of siding (1.2.2.0.0.2)
Alternative Code
Border point identification

Data Format

Data Presentation

Literal

Additional Information

Example:

```
Examples include International Standard Book Number (ISBN),
Digital Object Identifier (DOI), and Uniform Resource Name
(URN).
```

Identifier DP

Gives an identifier, such as a company registration number, that can be used to used to uniquely identify the organization. Many different national and international identier schemes are available. The org ontology is neutral to which schemes are used. The particular identifier scheme should be indicated by the datatype of the identifier value. Using datatypes to distinguish the notation scheme used is consistent with recommended best practice for `skos:notation` of which this property is a specialization.

IRI: *http://www.w3.org/ns/org#identifier*

Parameter of

Organization

General Information

Belongs to parameters group

Notation

In country OP

Indicates the country in which an entity resides.

IRI: *http://data.europa.eu/949/inCountry*

Parameter of

Infrastructure element
Subset with common characteristics

Data Format

Data Presentation

Concept

Validation

Validation Rules:

In Country
Comment: Indicates the country to which the infrastructure element belongs
Message: inCountry: Each infrastructure element must have exactly one country. This error may be due to having an infrast without or with more than one country or it value is not a Concept.

In Country Skos
Comment: Indicates the country to which the infrastructure element belongs
Message: The infrastructure element {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://publications.europa.eu/resource/authority/country.

In NUTS-3 OP

Reference to NUTS-3 place or city

IRI: *http://data.europa.eu/949/inNUTS3*

Parameter of
Primary Location

Data Format

Data Presentation
Concept

Validation

Validation Rules:
In Nuts3skos
Comment: Reference to NUTS-3 place or city
Message: inNUTS3: The PrimaryLocation {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: https://publications.europa.eu/resource/authority/nuts.
In Nuts3
Comment: Reference to NUTS-3 place or city
Message: inNUTS3: Each PrimaryLocation may have at most one value for nuts3 which must be an IRI. This error is due to having more than one values, or a value that is not an IRI.

Includes list of linear references OP

List of linear references included in an network area reference.

IRI: *http://data.europa.eu/949/includes*

Parameter of
Net Area Reference

Data Format

Data Presentation
List

Validation

Validation Rules:

Includes
Comment: List of linear references included in an network area reference.
Message: includes: The net area reference specifies a list of linear references that must be an instance of an rdf:List. This error is due to having a value that is not an instance of rdf:List.

Infrastructure manager OP

Relates a subset with common characteristics with its IM, represented by an instance of organisation role that points to the "infrastructure manager" concept in the taxonomy.

IRI: *http://data.europa.eu/949/infrastructureManager*

Parameter of
Infrastructure element
Subset with common characteristics

Data Format

Data Presentation
Organisation Role

Validation

Validation Rules:
Infrastructure Manager
Comment: Relates a subset with common characteristics with its IM, represented by an instance of organisation role.
Message: infrastructureManager: The subset with common characteristics must refer to an infrastructure manager that is an instance of OrganisationRole. This error may be due to having a value that is not an instance of OrganisationRole.
Infrastructure Manager Skosvalue
Comment: Each infrastructure element can only be submitted by one infrastructure manager, represented by a four-digit code.
Message: imCode (1.2.1.0.6.1): Each infrastructure element {$this} with label {?label} refers to a network (subset with common characteristics), that in turn refers to an instance of an OrganisationRole. This instance must have an era:organisationRole pointing to the value era-organisation-roles:IM in the orgRoles SKOS concept scheme. The error is due to a {?value} different from

Is on origin of element A DP

Determines if the position of the topological element A in a relation is the origin of element A.

IRI: *http://data.europa.eu/949/isOnOriginOfElementA*

Also Known As:
Internal connection

Parameter of

Net Relation

General Information

Number:
1.1.1.0.1.2
1.2.4.1

Data Format

Data Presentation
Boolean

Validation

Validation Rules:
Is On Origin Of Element A
Comment: Determines if the position of the topological element A in a relation is the origin of element A.
Message: isOnOriginOfElementA: The net relation specifies if the position of the topological element A in a relation is the origin of element A. This error is due having a value that is not a boolean.

Is on origin of element B DP

Determines if the position of the topological element B in a relation is the origin of element B.

IRI: *http://data.europa.eu/949/isOnOriginOfElementB*

Also Known As:
Internal connection

Parameter of
Net Relation

General Information

Number:
1.1.1.0.1.2
1.2.4.1

Data Format

Data Presentation
Boolean

Validation

Validation Rules:
Is On Origin Of Element B
Comment: Determines if the position of the topological element B in a relation is the origin of element B.
Message: isOnOriginOfElementB: The net relation specifies if the position of the topological element B in a relation is the origin of element B. This error is due having a value that is not a boolean.

Is part of OP

Indicates that an infrastructure element is a part of another (distinct) infrastructure element.
An element cannot be part of itself.
This property is the inverse of era:hasPart and represents the partial or whole-part relationship between infrastructure elements.

IRI: *http://data.europa.eu/949/isPartOf*

Parameter of
Infrastructure element

Data Format

Data Presentation
Infrastructure element

Validation

Validation Rules:
Is Part Of
Comment: Indicates that an infrastructure element is a part of another (distinct) infrastructure element.
Message: hasPart: The InfrastructureElement may have a isPartOf reference that is an IRI that refers to an instance of InfrastructureElement. This error is due to having a value that is not an instance of InfrastructureElement.

Kilometric post name DP

Name of the kilometric post (optional).

IRI: *http://data.europa.eu/949/kmPostName*

Also Known As:
mileage post

Parameter of
Kilometric Post

Data Format

Data Presentation
String

Validation

Validation Rules:
Km Post Name
Comment: Name of the kilometric post (optional).
Message: kmPostName: The kilometer post name must be represented as a string of characters.

Km post for reference OP

The closest kilometric post on the line, used as a reference by the LRS coordinate.

IRI: *http://data.europa.eu/949/kmPost*

Parameter of
Linear Positioning System Coordinate

Data Format

Data Presentation
Kilometric Post

Validation

Validation Rules:
Km Post
Comment: The closest kilometric post on the line, used as a reference by the LRS coordinate.
Message: kmPost: The LinearPositioningSystemCoordinate may reference a KilometricPost through kmPost. This error is due to the value either not being an IRI, or being an IRI that is not an instance of KilometricPost.

Length DP

Generic super-property for different types of length

IRI: *http://data.europa.eu/949/length*

General Information

Related parameters
Length of section of line (1.1.0.0.0.5)
Length of tunnel (1.1.1.1.8.7 | 1.2.1.0.5.5 | 1.2.2.0.5.5)
Length of the non-stopping area (1.1.1.3.14.5)
Usable length of platform (1.2.1.0.6.4)
Usable length of siding (1.2.2.0.2.1)
Length of net linear element
Maximum train length allowed
Vehicle length

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:

The length can be
- a section of line (For operational length, use era:lengthOfSectionOfLine),
- a tunnel (For operational length, use era:lengthOfTunnel),
- a platform (For its usable length, use era:lengthOfPlatform),
- a siding (For its usable length, use era:lengthOfSiding), and
- length of other areas such as
- a non-stopping area (accuracy +- 10m),
- a walkway,
- an evacuation and rescue point.
- a vehicle length.
Position of the start of the walkway: [integer] m (from the same origin point of the kilometer post.)
Lenght of the walkway: [integer] m

Length of net linear element DP

Length of a topological linear element.

IRI: *http://data.europa.eu/949/lengthOfNetLinearElement*

Parameter of
Linear Element

General Information

Belongs to parameters group
Length

Data Format

Data Presentation
Double

Unit of Measure:
Metre

Validation

Validation Rules:
Length Of Net Linear Element
Comment: Length of a linear element.
Message: lengthOfNetLinearElement: The linear element has at most one value of length and it is a double number. This error is due to having more than one value or that the value is not a double number.

Length of the non-stopping area DP

Length of a Non-stopping area.

IRI: *http://data.europa.eu/949/lengthOfNonStoppingArea*

Parameter of
Linear Element

General Information

Number:
1.1.1.3.14.5

Belongs to parameters group
Length

Data Format

Data Presentation
Double

Unit of Measure:
Metre

Validation

Validation Rules:
Length Of Non Stopping Area
Comment: Length of a Non-stopping area.
Message: lengthOfNonStoppingArea (1.1.1.3.14.5): The linear element has at most one length of non-stopping area value and it must be a double number. This error is due to having more than one value or that the value is not a double number.

Line identifier DP

Unique line identification or unique line number within Member State.

IRI: *http://data.europa.eu/949/lineId*

Parameter of
Linear Positioning System

General Information

Number:
1.1.0.0.0.2

XML Name:
SOLLineIdentification

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Identifier

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y

Validation

Validation Rules:

Line Id

Comment: Unique line identification or unique line number within Member State.
Message: lineId: The line identification is unique and must be a string. This error is due to having more than one value or having a value that is not a string of characters

OPE TSI References

Appendix D2 Index

2.2.1.1

Lineside distance indication appearance OP

Indication of types of appearance of track lineside distance indications.

IRI: *http://data.europa.eu/949/linesideDistanceIndicationAppearance*

Parameter of

Lineside indications of distance

Data Format

Data Presentation

Concept

Taxonomy Reference:

Lineside distance indication appearance

Values :

Code	Value
00	Kilometer post
01	Hectometer post
02	Half-kilometer post
03	Milepost

Validation

Validation Rules:

Lineside Distance Indication Appearance
Comment: Indication of types of appearance of track lineside distance indications.
Message: linesideDistanceIndicationAppearance: The track must have at least one value of the lineside distance indication appearance. This error may be due to the track having no value, or to having a value that is not an IRI.
Lineside Distance Indication Appearance Skos
Comment: Indication of types of appearance of track lineside distance indications.
Message: Indication of the linesideDistanceIndicationAppearance: The track {$this} has a LinesideDistanceIndication {?linesideDistanceIndication} that has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/lineside-distance-indication-appearance/LinesideDistanceIndicationAppearance.

Lineside distance indication frequency DP

Frequency of track lineside distance indications.

IRI: *http://data.europa.eu/949/linesideDistanceIndicationFrequency*

Parameter of
Lineside indications of distance

Data Format

Data Presentation
Integer

Unit of Measure:
Metre

Validation

Validation Rules:
Lineside Distance Indication Frequency
Comment: Frequency of track lineside distance indications..
Message: linesideDistanceIndicationFrequency: The track must have at most one value of the lineside distance indication frequency. This error may be due to the track having a LineDistanceIndication with no value, more than one value or to having a value that is not an integer.

Lineside distance indication positioning OP

Indication of the side along the track where the lineside indication is positioned (left or right, or both sides).

IRI: *http://data.europa.eu/949/linesideDistanceIndicationPositioning*

Parameter of
Lineside indications of distance

Data Format

Data Presentation
Concept

Format:
A selection between 3 possible selectable values:
- Left, or
- Right, or
- Left and Right

Taxonomy Reference:
Lineside distance indication positioning

Values :

Code	Value
00	Left
01	Right
02	Left and right

Validation

Validation Rules:

Lineside Distance Indication Positioning
Comment: Indication of the side along the track where the lineside indication is positioned (left or right).
Message: LinesideDistanceIndicationPositioning: The track must have at most one value of the lineside distance indication positioning. This error may be due to the track having no value, more than one value or to having a value that is not an IRI.

Lineside Distance Indication Positioning Skos
Comment: Indication of the side along the track where the lineside indication is positioned (left or right).
Message: Indication of the linesideDistanceIndicationPositioning: The track {$this} has a LinesideDistanceIndication {?linesideDistanceIndication} with a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/lineside-distance-indication-positioning/LinesideDistanceIndicationPositioning.

Linked to primary location OP

Relates a subsidiary location with a primary location.

IRI: *http://data.europa.eu/949/linkedToPrimaryLocation*

Parameter of

Subsidiary location

Data Format

Data Presentation

Primary Location

Validation

Validation Rules:

Linked To Primary Location
Comment: Linked to primary location.
Message: linkedToPrimaryLocation: An instance of subsidiary location may have a value for linkedToPrimaryLocation. This error may be due to having a value that is not an IRI or that does not point to an instance of PrimaryLocation.

Load capability line category OP

Part of the load capability of a track that corresponds to the line category of the load model. The load capability is a value selected from the list of load models representing the line category which is amended by value of speed [km/h] permitted for a specific load model. The list of values may also be Route Availability which is amended by value of speed [miles/h] permitted for a specific load model.

IRI: *http://data.europa.eu/949/loadCapabilityLineCategory*

Parameter of

Load capability

Data Format

Data Presentation

Concept

Taxonomy Reference:

Load capability line categories

Values :

Code	Value	Explanation
10	A	
20	B1	
30	B2	
40	C2	
50	C3	
60	C4	
70	D2	
80	D3	
90	D4	
100	D4xL	
110	E4	
120	E5	
130	RA1	
140	RA2	
150	RA3	
160	RA4	
170	RA5	
180	RA6	
190	RA7	
200	RA8	
210	RA9	
220	RA10	
230	HS17	Applicable for trains falling under axle load category HS17

Validation

Validation Rules:

Load Capability Line Category

Comment: Load capability is a combination of the line category and speed at the weakest point of the track.

Message: loadCapabilityLineCategory (1.1.1.1.2.4): The track must have a load capability with a value of line category that is an URI. This error may be due to having an instance of Load capability with no value of a line category, more than one value of a line category, or a value that is not an IRI.

Load Capability Line Category Skos
Comment: Load capability is a combination of the line category and speed at the weakest point of the track.
Message: Indication of the load capability line category (1.1.1.1.2.4):): The track {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/load-capability-line-categories/LoadCapabilityLineCategories.

Load capability speed DP

Part of the load capability of a track that corresponds to the speed of the load model

IRI: *http://data.europa.eu/949/loadCapabilitySpeed*

Parameter of
Load capability

Data Format

Data Presentation
Integer

Unit of Measure:
Kilometre per Hour

Validation

Validation Rules:
Load Capability Speed
Comment: Load capability is a combination of the line category and speed at the weakest point of the track.
Message: loadCapabilitySpeed (1.1.1.1.2.4): The track must have a load capability with a value of speed that is an integer. This error may be due to having an instance of LoadCapability with no value of speed, more than one value of speed, or that the value is not an integer.

Maximum magnetic field direction X DP

The maximum magnetic field limits allowed for axle counters (in dB µA/m) for a defined frequency band. Direction X.

IRI: *http://data.europa.eu/949/maximumMagneticFieldDirectionX*

Parameter of
Maximum magnetic field

Data Format

Data Presentation
Integer

Validation

Validation Rules:

Maximum Magnetic Field Direction X

Comment: The maximum magnetic field limits allowed for axle counters (in dB µA/m) for a defined frequency band. Direction X.

Message: maximumMagneticFieldDirectionX : Each MaximumMagneticField may have a single value for maximum magnetic field direction X that is an integer. This error is due to not having a value, having more than one value or having a value that is not an integer.

Additional Information

General explanation:

The maximumMagneticFieldDirectionX parameter is only applicable for axle counters.

Maximum magnetic field direction Y DP

The maximum magnetic field limits allowed for axle counters (in dB µA/m) for a defined frequency band. Direction Y.

IRI: *http://data.europa.eu/949/maximumMagneticFieldDirectionY*

Parameter of

Maximum magnetic field

Data Format

Data Presentation

Integer

Validation

Validation Rules:

Maximum Magnetic Field Direction Y

Comment: The maximum magnetic field limits allowed for axle counters (in dB µA/m) for a defined frequency band. Direction Y.

Message: maximumMagneticFieldDirectionY : Each MaximumMagneticField may have a single value for maximum magnetic field direction Y that is an integer. This error is due to not having a value, having more than one value or having a value that is not an integer.

Additional Information

General explanation:

The maximumMagneticFieldDirectionY parameter is only applicable for axle counters.

Maximum magnetic field direction Z DP

The maximum magnetic field limits allowed for axle counters (in dB µA/m) for a defined frequency band. Direction Z.

IRI: *http://data.europa.eu/949/maximumMagneticFieldDirectionZ*

Parameter of
Maximum magnetic field

Data Format

Data Presentation
Integer

Validation

Validation Rules:
Maximum Magnetic Field Direction Z
Comment: The maximum magnetic field limits allowed for axle counters (in dB µA/m) for a defined frequency band. Direction Z.
Message: maximumMagneticFieldDirectionZ : Each MaximumMagneticField may have a single value for maximum magnetic field direction Z that is an integer. This error is due to not having a value, having more than one value or having a value that is not an integer.

Additional Information

General explanation:
The maximumMagneticFieldDirectionZ parameter is applicable for axle counters.

Maximum train length allowed DP

Maximum train length in meters allowed on a section of line, without special permission, for the operation of freight trains.
In accordance with Regulation (EU) 2024/1679, Article 15(2)(c), this maximum length must be supported by the infrastructure manager's ability
to allocate sufficient train paths for freight trains of at least 740 meters (including the locomotive or locomotives), as required for the TEN-T network.

IRI: *http://data.europa.eu/949/maxPermittedTrainLength*

Parameter of
Running track

General Information

Belongs to parameters group
Length

Data Format

Data Presentation
Double

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:

Applicable only to sections of lines belonging to TEN-T corridors.
It applies to sections of lines where tracks have a TEN classification (1.1.1.1.2.1) that is neither 'off-TEN' nor not applicable ('N')

Validation Rules:

Max Permitted Train Length Applicability
Comment: Maximum train length permitted on the track is mandatory for tracks that are part of a SectionOfLine and belong to freight corridors.
Message: maxPermittedTrainLength: This error is due to the track {?trackLabel} being part of a SectionOfLine and belonging to a freight corridor, violating the rule: Maximum train length is mandatory for tracks that are part of a SectionOfLine and part of freight corridors.
Max Permitted Train Length
Comment: Maximum train length permitted on the track.
Message: maxPermittedTrainLength: The track must have at most one maximum train length value that is a double (real) number greater than or equal to 0. This error may be due to the track having more than one value, a negative value, or a value that is not a double (real) number.

Additional Information

General explanation:

The specific allocation requirements for single and double-track lines are as follows:
- Double-track lines: At least one train path every 2 hours per direction on average daily.
- Single-track lines: At least one train path every 3 hours per direction, with a minimum of 12 daily train paths allocated.
These allocation conditions must be met if requested by a railway undertaking, as specified in Regulation (EU) 2024/1679, Article 16(2)(b)(i)-(ii).

Measured distance DP

Measured distance from the origin of the LRS.

IRI: *http://data.europa.eu/949/measuredDistance*

Parameter of

Kilometric Post

Data Format

Data Presentation

Double

Unit of Measure:

Metre

Validation

Validation Rules:

Measured Distance
Comment: Measured distance from the origin of the LRS.
Message: measuredDistance: The kilometer post measured distance must be represented as a double number.

Minimal vehicle input capacitance DP

IRI: *http://data.europa.eu/949/minVehicleInputCapacitance*

Parameter of

Minimum Vehicle Impedance

Data Format

Data Presentation

Double

Format:

For the selected DC voltage: [CCCC], as input capacitance [CCCC](Cin)

Unit of Measure:

Nanofarad

Validation

Validation Rules:

Min Vehicle Input Capacitance Applicability
Comment: The parameter minVehicleInputCapacitance is applicable for track circuits.
Message: minVehicleInputCapacitance (1.1.1.3.4.2.2, 1.2.1.1.3.2.2):The Train Detection System {$this} ({?clsLabel}), has a 'track circuit' type that makes the minVehicleInputCapacitance parameter applicable. This error is due to {?minVehicleImpedance} not having a value for such a parameter.
Min Vehicle Input Capacitance
Comment: For the selected DC voltage: [CCCC], as input capacitance [CCCC](Cin).
Message: minVehicleInputCapacitance: Each MinVehicleImpedance must define the minVehicleInputCapacitance. This error may be due to not having a value, having more than one value or having a value that is not a double (real) number.

Minimal vehicle input impedance DP

IRI: *http://data.europa.eu/949/minVehicleInputImpedance*

Parameter of

Minimum Vehicle Impedance

Data Format

Data Presentation

Double

Format:

For the selected DC voltage: [ZZZZ], as input impedance [ZZZZ](Zin)

Unit of Measure:

Millihenry

Validation

Validation Rules:

Min Vehicle Input Impedance
Comment: For the selected DC voltage: [ZZZZ], as input impedance [ZZZZ](Zin).
Message: minVehicleInputImpedance: Each MinVehicleImpedance must define the minVehicleInputImpedance. This error may be due to not having a value, having more than one value or having a value that is not a double (real) number.
Min Vehicle Input Impedance Applicability
Comment: The parameter minVehicleInputImpedance is applicable for track circuits.
Message: minVehicleInputImpedance (1.1.1.3.4.2.2, 1.2.1.1.3.2.2):The Train Detection System {$this} ({?clsLabel}), has a 'track circuit' type that makes the minVehicleInputImpedance parameter applicable. This error is due to {? minVehicleImpedance} not having a value for such a parameter.

Minimum impedance frequency DP

IRI: *http://data.europa.eu/949/minImpedanceFrequency*

Parameter of
Minimum Vehicle Impedance

Data Format

Data Presentation
Double

Format:
For impedance data coming from ERATV, frequency in Hertz (Hz)

Unit of Measure:

Minimum impedance resistance DP

IRI: *http://data.europa.eu/949/minImpedanceResistance*

Parameter of
Minimum Vehicle Impedance

Data Format

Data Presentation
Double

Format:
For impedance data coming from ERATV, resistance in Ohm (Ω)

Unit of Measure:

Minimum radius of vertical curve crest DP

Part of the minimum radius of vertical curve that indicates the crest

IRI: *http://data.europa.eu/949/minimumVerticalRadiusCrest*

Parameter of
Minimum radius of vertical curve

Data Format

Data Presentation
Integer

Unit of Measure:
Metre

Validation

Validation Rules:
Minimum Vertical Radius Crest
Comment: Radius of the smallest vertical curve expressed in meters, part that indicates the crest
Message: minimumVerticalRadiusCrest : Each siding may have a minimumVerticalRadiusCrest in meters. This error is due to having no value, having more than one value or having a value that is not an integer number.

Minimum radius of vertical curve hollow DP

Part of the minimum radius of vertical curve that indicates the hollow

IRI: *http://data.europa.eu/949/minimumVerticalRadiusHollow*

Parameter of
Minimum radius of vertical curve

Data Format

Data Presentation
Integer

Unit of Measure:
Metre

Validation

Validation Rules:
Minimum Vertical Radius Hollow
Comment: Radius of the smallest vertical curve expressed in meters, part that indicates the hollow
Message: minimumVerticalRadiusHollow: Each siding may have a minimumVerticalRadiusHollow in meters. This error is due to having no value, having more than one value or having a value that is not an integer number.

Minimum Vehicle Impedance (Voltage applicable) OP

IRI: *http://data.europa.eu/949/minVehicleImpedanceVoltages*

Parameter of

Minimum Vehicle Impedance

Data Format

Data Presentation

Concept

Taxonomy Reference:

Energy Supply Systems

Values :

Code	Value	Also Known As
AC10	AC 25kV-50Hz	
AC20	AC 15kV-16.7Hz	15kV-16 2/3Hz : 2646 kW , 1kV-16 2/3 Hz or 50 Hz
DC30	DC 3kV	3000V DC, 3kV (PL, CZ, SK)
DC40	DC 1.5kV	1.5kV Specific Case IE, 1.5kV (Specific Case IE), 1500
DC60	DC 750V	DC 750V third rail, Vía Urbana e Interurbana 750 Vdc, 750V, DC750V
DC70	DC 650V	
DC80	DC 600 V	
DC90	DC 850V	

Validation

Validation Rules:

Min Vehicle Impedance Voltages Skos
Comment: Indication of the voltage system valid for the minimal impedance value (track circuits).
Message: minVehicleImpedanceVoltages: The minVehicleImpedance {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/energy-supply-systems/EnergySupplySystems.
Min Vehicle Impedance Voltages
Comment: Indication of the voltage system valid for the minimal impedance value (track circuits).
Message: minVehicleImpedanceVoltages: The MinVehicleImpedance has a minVehicleImpedanceVoltage that must be an IRI. This error may be due to not having a value, having more than one value or having a value that is not an IRI.
Min Vehicle Impedance Voltages Applicability
Comment: The parameter minVehicleImpedanceVoltages is applicable for track circuits.
Message: minVehicleImpedanceVoltages (1.1.1.3.4.2.2, 1.2.1.1.3.2.2):The Train Detection System {$this} ({?clsLabel}), has a 'track circuit' type that makes the minVehicleImpedanceVoltages parameter applicable. This error is due to {?minVehicleImpedance} not having a value for such a parameter.

Name DP

A name for some thing.

IRI: *http://xmlns.com/foaf/0.1/name*

Parameter of
Thing

Data Format

Data Presentation
Literal

Name of a subset with common characteristics DP

A subset of elements with common characteristics could be identified with a unique name/id.

IRI: *http://data.europa.eu/949/subsetName*

Parameter of
Subset with common characteristics

Data Format

Data Presentation
Lang String

Validation

Validation Rules:
Subset Name
Comment: A subset of elements with common characteristics could be identified with a unique name/id.
Message: subsetName: Each Common Characteristics Subset may have a name. If it does, there should be at least one name in English (@en). Additional multilingual names are allowed, but only one value per language tag is permitted. All values must be language-tagged string literals.

Additional Information

Example:

```
Example: "ETCSbaseline2": describes all ETCS National values
(1.1.1.3.2.16 group)
```

Navigability OP

Indicates the navigation possibilities between two related topological linear elements.

IRI: *http://data.europa.eu/949/navigability*

Also Known As:
Internal connection

Parameter of
Net Relation

General Information

Number:
1.1.1.0.1.2
1.2.4.1

Data Format

Data Presentation
Concept

Taxonomy Reference:
Navigabilities

Values :

Code	Value	Explanation
AB	AB	Navigation is only possible from element A to element B
BA	BA	Navigation is only possible from element B to element A
Both	Both	Navigation between elements A and B is possible in both directions
None	None	No navigation possible between elements A and B

Validation

Validation Rules:
Navigability Skos
Comment: Indicates the navigation possibilities between two related topological linear elements.
Message: era:navigability: The net relation {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/navigabilities/Navigabilities.
Navigability
Comment: Indicates the navigation possibilities between two related topological linear elements.
Message: navigability: The net relation must have a navigability value that is an IRI.

Additional Information

General explanation:

- AB: Trains can move from element A to element B.
- BA: Trains can move from element B to element A.
- Both: Movement is bidirectional.
- None: No movement is allowed between the two elements.

Net reference OP

The reference that a physical infrastructure element has it on the topology. It may be used to define the positioning or a representation as a point, line or area

IRI: *http://data.europa.eu/949/netReference*

Parameter of

Infrastructure element
Linear Positioning System

Data Format

Data Presentation

Net Basic Reference

Validation

Validation Rules:

Net Reference Op
Comment: The reference that an OperationalPoint has on the topology. It must point to an instance of NetBasicReference.
Message: netReference: Each OperationalPoint must have at least one netReference pointing to an instance of NetBasicReference. This error is due to not having a value or having a value that is not a NetBasicReference.
Net Reference
Comment: The reference that a physical insfrastructure element has it on the topology. It may be used to define the positioning or a representation as a point. line or area.
Message: netReference: The infratructure element must have a net reference that points to an instance of NetBasicReference. This error is due to having a value that is not an instance of NetBasicReference.
Net Reference Geometry As Wkt
Comment: A WKT geometry reachable via era:netReference / geosparql:hasGeometry / geosparql:asWKT is required to display the infrastructure element on the RINF+ map.
Message: netReference geometry: please provide a geosparql:asWKT value reachable via era:netReference / geosparql:hasGeometry so that this infrastructure element can be displayed on the RINF+ map.
Net Reference Sol
Comment: The reference that a SectionOfLine has on the topology. It must point to an instance of NetBasicReference.
Message: netReference: Each SectionOfLine must have at least one netReference pointing to an instance of NetBasicReference. This error is due to not having a value or having a value that is not a NetBasicReference.

Non coded restrictions DP

Groups the non-coded restrictions, as a set of sentences. Can be used for any subClassOf `era:Restriction`.

IRI: *http://data.europa.eu/949/nonCodedRestrictions*

Parameter of

Restriction
Vehicle Registration Restriction
Vehicle Type
Vehicle Type Authorisation Restriction

General Information

Belongs to parameters group

Vehicle type technical characteristic

Data Format

Data Presentation

String

Not applicable OP

Reference to a property that is not applicable.

IRI: *http://data.europa.eu/949/notApplicable*

Validation

Validation Rules:

Not Applicable
Comment: Reference to a property that is not applicable.
Message: The value of this property is a reference to an ontology property that is not provided and it must be an IRI. The error may be due to the property not belonging to the ERA ontology or the property not being an IRI.
Not Applicable Shape

Not Applicable Property
Comment: Reference to a property that is not applicable.
Message: The value of this property is a reference to an ontology property that is not provided and it must be an IRI. The error may be due to the property not belonging to the ERA ontology or the property not being an IRI.

Not provided OP

Reference to a property that is not provided.

IRI: *http://data.europa.eu/949/notYetAvailable*

Validation

Validation Rules:

Not Yet Available Property
Comment: Reference to a property that is not provided.
Message: The value of this property is a reference to an ontology property that is not provided and it must be an IRI. The error may be due to the property not belonging to the ERA ontology or the property not being an IRI.
Not Yet Available
Comment: Reference to a property that is not provided.
Message: The value of this property is a reference to an ontology property that is not provided and it must be an IRI. The error may be due to the property not belonging to the ERA ontology or the property not being an IRI.
Not Yet Available Shape

Notation DP

IRI: *http://www.w3.org/2004/02/skos/core#notation*

General Information

Related parameters

Identifier

Of parameter OP

Indicates the parameter (object or datatype property) for which an applicability is being defined.

IRI: *http://data.europa.eu/949/ofParameter*

Parameter of

Parameter applicability

Validation

Validation Rules:

Of Parameter
Comment: Applicability interval defines the date interval in which a characteristic of an infrastructure element is applicable. The characteristic to which it applies is the ofParameter property.
Message: ofParameter: An instance of parameter applicability must have exactly one value of the characteristic (ofParameter) to which it applies to. This error may be due to not having a value, having more than one value, having a value that is not an IRI or is not an object or datatype property in the ontology.

Offset DP

Relative distance from a reference kilometric post

IRI: *http://data.europa.eu/949/offsetFromKilometricPost*

Parameter of
Linear Positioning System Coordinate

Data Format

Data Presentation
Double

Unit of Measure:
Metre

Validation

Validation Rules:
Offset From Kilometric Post
Comment: Relative distance from a reference kilometric post.
Message: offsetFromKilometricPost: The offset from kilometric post must be represented as a double number.

Offset from origin DP

Offset from the origin in a topological coordinate.

IRI: *http://data.europa.eu/949/offsetFromOrigin*

Parameter of
Topological Coordinate

Data Format

Data Presentation
Double

Unit of Measure:
Metre

Validation

Validation Rules:
Offset From Origin
Comment: Offset from the origin in a topological coordinate.
Message: offsetFromOrigin: The offset from the origin in a topological coordinate must be represented as a non-negative double. This error is due to having more than one value, a negative value, or using the wrong datatype.

On element OP

Specifies the linear element a section belongs to.

IRI: *http://data.europa.eu/949/onElement*

Parameter of
Linear Element Section

Data Format

Data Presentation
Linear Element

Validation

Validation Rules:
On Element
Comment: Specifies the linear element a section belongs to.
Message: onElement: The linear element section specifies the linear element it belongs to. This error is due having a value that is not an instance of LinearElement.

On linear element OP

Specifies the linear element a coordinate is associated with.

IRI: *http://data.europa.eu/949/onLinearElement*

Parameter of
Topological Coordinate

Data Format

Data Presentation
Linear Element

Validation

Validation Rules:
On Linear Element
Comment: Specifies the linear element a coordinate is associated with.
Message: onLinearElement: The topological coordinate specifies the linear element it belongs to. This error is due having a value that is not an instance of LinearElement.

On side OP

Indication of the position of the signal in relation to the track in the running direction from the origin of the referencing system (e.g., direction of the main line)

IRI: *http://data.europa.eu/949/side*

Parameter of
Orientation

Data Format

Data Presentation
Concept

Taxonomy Reference:
Sides

Values :

Code	Value
Above	Above the track
InBetween	Between tracks
Left	Left Side of Track
Right	Right Side of Track

Validation

Validation Rules:
Side
Comment: Indication of the position of the signal in relation to the track in the running direction from the origin of the referencing system (e.g., direction of the main line).
Message: side: The Orientation may reference a SKOS concept representing the side in the form of an IRI. This error is due to the value not being an IRI.
Side Skos
Comment: Indication of the position of the signal in relation to the track in the running direction from the origin of the referencing system.
Message: side: The Orientation {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined Sides in the SKOS concept scheme http://data.europa.eu/949/concepts/orientations/Sides.

Other CCS radio systems onboard OP

Other CCS radio systems onboard

IRI: *http://data.europa.eu/949/otherCCSRadioSystemOnboard*

Parameter of
Restriction

General Information

Belongs to parameters group
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Additional Information

General explanation:
Selected value shall answer the question whether any other CCS system than ETCS exists for the vehicle (type). The list is in line with ERA/TD/2011-09/INT (v1.17), Table 6.

Other CCS systems onboard OP

Other CCS systems onboard

IRI: *http://data.europa.eu/949/otherCCSSystemOnboard*

Parameter of
Restriction

General Information

Belongs to parameters group
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Additional Information

General explanation:
Selected value shall answer the question whether any other CCS system than ETCS exists for the vehicle (type). The list is in line with ERA/TD/2011-09/INT (v1.17), Table 5.

Other train detection systems DP

General Information

Number:
1.1.1.3.7
1.2.1.1.6

Belongs to parameters group
Vehicle type technical characteristic

Related parameters
Minimum width of the rim

Parameter applicability OP

Relates an infrastructure element or a common characteristics subset with the applicability of a certain parameter.

IRI: *http://data.europa.eu/949/parameterApplicability*

Parameter of

Infrastructure element
Subset with common characteristics

Data Format

Data Presentation

Parameter applicability

Validation

Validation Rules:

Parameter Applicability
Comment: Applicability interval that defines the date interval in which a characteristic of an infrastructure element is applicable. This interval can be applied for any of the technical characteristics or general information of infrastructure elements. This helps identifying planned changes applied to technical parameters over time.
Message: parameterApplicability: The infratructure element may have a parameterApplicability reference that must be an instance of ParameterApplicability. This error is due to having having a value that is not an instance of ParameterApplicability.

Parameter value DP

This property is used to link an applicability to the precise value of the parameter

IRI: *http://data.europa.eu/949/parameterValue*

Parameter of

Parameter applicability

Data Format

Data Presentation

Literal

Validation

Validation Rules:

Parameter Value
Comment: This property is used to link an applicability to the precise value of the parameter
Message: parameterValue: An instance of parameter applicability must have exactly one value of the parameter value. This error may be due to not having a value or having more than one value.

Parameter value type OP

In the case of a change in the value of a parameter, there needs to be an information on the type of the new value. The “Value type” will have different possible options: “nominal”, “planned temporary restriction”, “permanent restriction”, “planned temporary closure”.

IRI: *http://data.europa.eu/949/parameterValueType*

Parameter of

Parameter applicability

Data Format

Data Presentation

Concept

Taxonomy Reference:

Applicability types

Values :

Code	Value
NMN	Nominal
PRN	Permanent restriction
PTC	Planned temporary closure
PTR	Planned temporary restriction

Validation

Validation Rules:

Parameter Value Type
Comment: In the case of a change in the value of a parameter, there needs to be an information on the type of the new value. The “Value type” will have different possible options: “nominal”, “planned temporary restriction”, “permanent restriction”, “planned temporary closure.
Message: parameterValueType: An instance of parameter applicability must have exactly one value of the parameter value type. This error may be due to not having a value, having more than one value, having a value that is not an IRI.
Parameter Value Type Skos
Comment: In the case of a change in the value of a parameter, there needs to be an information on the type of the new value. The “Value type” will have different possible options: “nominal”, “planned temporary restriction”, “permanent restriction”, “planned temporary closure.
Message: parameterValueType: The parameter applicability {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/parameterApplicability/ValueTypes.

Part of TEN-T OP

Links an element to its TEN-T network classification, which includes network level, type of traffic, and European transport corridor information.

IRI: *http://data.europa.eu/949/partOfTENT*

Parameter of

Running track
Subset with common characteristics

Data Format

Data Presentation

TEN-T Corridor

Validation

Validation Rules:

Part Of Tent
Comment: Links an element to its TEN-T network classification, which includes network level, type of traffic, and European transport corridor information.
Message: partOfTENT: The running track {$this} must link to a TEN-T corridor classification (era:TENTCorridor) using an IRI. This error is due to having a value that is not an IRI or not an instance of era:TENTCorridor.

Passenger flag DP

Indicates whether a passenger train can perform commercial passenger activity at a primary location.

IRI: *http://data.europa.eu/949/passengerFlag*

Parameter of

Primary Location

Data Format

Data Presentation

Boolean

Validation

Validation Rules:

Passenger Flag
Comment: Indicates whether a passenger train can perform commercial passenger activity at a primary location.
Message: passengerFlag : The PrimaryLocation may have a passengerFlag value that is a boolean. This error may be due to the Primary Location having a value that is not a boolean or more than one value for this property.

Phase info distance type DP

Part of the phase info of a track that corresponds to the single selection of 'MIN=minimum' or 'MAX=maximum' to show whether the length is a minimum distance between the inner contact strips of the pantographs or a maximum distance between the outer contact strips of the pantographs. Multiple strings for this parameter are accepted.

IRI: *http://data.europa.eu/949/phaseInfoDistanceType*

Parameter of
Phase info

Data Format

Data Presentation
String

Validation

Validation Rules:
Phase Info Distance Type
Comment: Indication of existence of phase separation and required information.
Message: Phase info distance type : The track has a phase info with the single selection of 'MIN=minimum' or 'MAX=maximum' to show whether the length is a minimum distance between the inner contact strips of the pantographs or a maximum distance between the outer contact strips of the pantographs, that must be the string MIN or MAX. This error may be due to the track having a PhaseInfo with no value of distancetype, more than one value of distance type, or having a value that is not one of the strings MIN or MAX.

Additional Information

General explanation:
The phase info is the indication of required several information on phase separation.

Phase info Km DP

Part of the phase info of a track that indicates the location from the start of the line where the new value is valid.

IRI: *http://data.europa.eu/949/phaseInfoKm*

Parameter of
Phase info

Data Format

Data Presentation
Double

Validation

Validation Rules:

Phase Info Km
Comment: Indication of existence of phase separation and required information.
Message: Phase info km : The track has a phase info with the location from the start of the line value (km), that must be a double. This error may be due to the track having a PhaseInfo with no value of km, more than one value of km, or a value that is not a double (real) number.

Additional Information

General explanation:
The phase info is the indication of required several information on phase separation.

Phase info length DP

Part of the phase info of a track that corresponds to the length of the phase separation in metres.

IRI: *http://data.europa.eu/949/phaseInfoLength*

Parameter of
Phase info

Data Format

Data Presentation
Integer

Unit of Measure:
Metre

Validation

Validation Rules:
Phase Info Length
Comment: Indication of existence of phase separation and required information.
Message: Phase infolength (): The track has a phase info with the length of the phase separation value (length), that must be an integer. This error may be due to the track having a PhaseInfo with no value of length, more than one value of length, or having a value that is not an integer.

Additional Information

General explanation:
The phase info is the indication of required several information on phase separation.

Phase info pantograph lowered DP

Part of the phase info of a track that shows whether a pantograph has to be lowered.

IRI: *http://data.europa.eu/949/phaseInfoPantographLowered*

Parameter of
Phase info

Data Format

Data Presentation
Boolean

Validation

Validation Rules:
Phase Info Pantograph Lowered
Comment: Indication of existence of phase separation and required information.
Message: Phase info (1.1.1.2.4.1.2): The track has the phase info with the indication whether the pantograph is lowered value, that must be Y/N (boolean). This error may be due to the track having a PhaseInfo with no value of phaseInfoPantographLowered, more than one value of phaseInfoPantographLowered, or having a value that is not Y/N (boolean).

Additional Information

General explanation:
The phase info is the indication of required several information on phase separation.

Phase info switch off breaker DP

Part of the phase info of a track that shows whether the breaker has to be switched off.

IRI: *http://data.europa.eu/949/phaseInfoSwitchOffBreaker*

Parameter of
Phase info

Data Format

Data Presentation
Boolean

Validation

Validation Rules:
Phase Info Switch Off Breaker
Comment: Indication of existence of phase separation and required information.
Message: Phase info switchOffBreaker : The track has the phase info with the indication whether the breaker may be switched off value, that must be Y/N (boolean). This error may be due to the track having a PhaseInfo with no value of phaseInfoSwitchOffBreaker, more than one value of phaseInfoSwitchOffBreaker, or having a value that is not Y/N (boolean).

Additional Information

General explanation:
The phase info is the indication of required several information on phase separation.

Primary location code DP

Primary location code developed for information exchange in accordance with the TSIs relating to the telematics applications subsystem.

IRI: *http://data.europa.eu/949/primaryLocationCode*

Parameter of
Primary Location

General Information

Number:
1.2.0.0.0.3

XML Name:
OPTafTapCode

Belongs to parameters group
Identifier

Data Format

Data Presentation
String

Validation

Validation Rules:
Primary Location Code
Comment: Primary location code developed for information exchange in accordance with the TSIs relating to the telematics applications subsystem.
Message: primaryLocationCode (1.2.0.0.0.3): The primary location code must be represented as a String and follow the pattern [AANNNNN]. It should be unique.

OPE TSI References

Appendix D2 Index
2.2.2

Primary location name DP

IRI: *http://data.europa.eu/949/primaryLocationName*

Parameter of
Primary Location

Data Format

Data Presentation
Lang String

Validation

Validation Rules:

Primary Location Name
Comment: Primary location name.
Message: primaryLocationName : The PrimaryLocation may have one primaryLocationName per language tag. If it does, there should be at least one name in English (@en). This error may be due to the Primary Location having a value that is not conform per language tag.

Raised pantographs speed DP

Indication of maximum number of raised pantographs per train allowed and minimum spacing centre line to centre line of adjacent pantograph heads, expressed in metres, at the given speed.

IRI: *http://data.europa.eu/949/raisedPantographsSpeed*

Parameter of

Requirements for number of raised pantographs and spacing between them, at the given speed

Data Format

Data Presentation

Integer

Unit of Measure:

Kilometre per Hour

Validation

Validation Rules:

Raised Pantographs Speed
Comment: Indication of maximum number of raised pantographs per train allowed and minumum spacing centre line to centre line of adjacent pantograph heads, expressed in meters, at the given speed.
Message: raised pantographs speed (1.1.1.2.3.3): The track must have a raised pantographs distance and speed with a value of speed that is an integer. This error is due to having a RaisedPantographDistanceAndSpeed with no value of speed, more than one value of speed or having a value that is not an integer.

Additional Information

General explanation:

The raised pantographs distance and speed is the indication of maximum number of raised pantographs per train allowed and minimum spacing centre line to centre line of adjacent pantograph heads, expressed in metres, at the given speed.

Reference border point OP

Relates an operational point that is a border point with an instance of the list of reference border points that are specified in the RINF Application Guide.

IRI: *http://data.europa.eu/949/referenceBorderPoint*

Parameter of

Operational Point

Data Format

Data Presentation

Reference border point

Validation

Validation Rules:

Reference Border Point

Comment: Relates an operational point that is a border point with an instance of the list of reference border points that are specified in the RINF Application Guide.

Message: referenceBorderPoint : The Operational Point may have a reference border point that is a ReferenceBorderPoint object. This error may be due to having more than one value of a reference border point, or having a value that is not a ReferenceBorderPoint instance.

Requirements for number of raised pantographs, at the given speed DP

Part of the raised pantographs distance and speed of a track that corresponds to the number of pantographs.

IRI: *http://data.europa.eu/949/raisedPantographsNumber*

Parameter of

Requirements for number of raised pantographs and spacing between them, at the given speed

Data Format

Data Presentation

Integer

Validation

Validation Rules:

Raised Pantographs Number

Comment: Indication of maximum number of raised pantographs per train allowed and minumum spacing centre line to centre line of adjacent pantograph heads, expressed in meters, at the given speed.

Message: Raised pantographs number (1.1.1.2.3.3): The track must have a raised pantographs distance and number with a value of number that is an integer. This error is due to having a RaisedPantographDistanceAndSpeed with no value of number, more than one value of number or having a value that is not an integer.

Additional Information

General explanation:

The raised pantographs distance and speed is the indication of maximum number of raised pantographs per train allowed and minimum spacing centre line to centre line of adjacent pantograph heads, expressed in metres, at the given speed.

Requirements for spacing between raised pantographs, at the given speed DP

Part of the raised pantographs distance and speed of a track that corresponds to the minimum distance between pantographs, in metres.

IRI: *http://data.europa.eu/949/raisedPantographsDistance*

Parameter of

Requirements for number of raised pantographs and spacing between them, at the given speed

Data Format

Data Presentation

Integer

Unit of Measure:

Metre

Validation

Validation Rules:

Raised Pantographs Distance

Comment: Indication of maximum number of raised pantographs per train allowed and minumum spacing centre line to centre line of adjacent pantograph heads, expressed in meters, at the given speed.

Message: Raised pantographs distance (1.1.1.2.3.3): The track must have a raised pantographs distance and speed with a value of distance that is an integer. This error is due to the track having a RaisedPantographDistanceAndSpeed with no value of distance, more than one value of distance or having a value that is not an integer.

Additional Information

General explanation:

The raised pantographs distance and speed is the indication of maximum number of raised pantographs per train allowed and minimum spacing centre line to centre line of adjacent pantograph heads, expressed in metres, at the given speed.

Role OP

Indicates the relationship of a Body to the organisation roles that it can play.

IRI: *http://data.europa.eu/949/role*

Parameter of

Body

Data Format

Data Presentation

Organisation Role

Validation

Validation Rules:

Role
Comment: Indicates the relationship of a Body to the organisation roles that it can play.
Message: role: Each instance of a Body must have at least one role. This error may be due to having no value or having a value that is not an instance of OrganisationRole.

Role of OP

Indicates the corresponding Body that plays a certain organisation role.

IRI: *http://data.europa.eu/949/roleOf*

Parameter of
Organisation Role

Data Format

Data Presentation
Body

Validation

Validation Rules:
Role Of
Comment: Indicates the corresponding Body that plays a certain organisation role.
Message: roleOf: Each instance of Organization Role points through roleOf to exactly one instance of Body. This error may be due to having no value, having more than one value or having a value that is not an instance of Body.

Section with train detection limitation DP

Part of the section with train detection limitation that indicates if it is applicable. Only for the French network.

IRI: *http://data.europa.eu/949/frenchTrainDetectionSystemLimitationApplicable*

Parameter of
Section with train detection limitation

Data Format

Data Presentation
Boolean

Validation

Validation Rules:

French Train Detection System Limitation Applicable
Comment: Part of the section with train detection limitation that indicates if it is applicable. Only for the French network.
Message: frenchTrainDetectionSystemLimitationApplicable : The train detection system has a french train detection limitation applicable value that must be a boolean. This error may be due to not having a value, having more than one value or having a value that is not a boolean.

OPE TSI References

Part of RCC Algorithm:
true

Section with train detection limitation number, only for French network OP

Part of the section with train detection limitation that indicates the type of train detection limitation.

Specific for route compatibility check on French network.

Sections with:
[1] Tonnage circulated per track is inferior to 15000 tons/day/track
[2] Directional Interlocking
[3] 45-second delay for directional interlocking
[4] Installation with track circuit announcement
[5] Absence of a shunting assistance pedal in the normal direction of circulation for non-reversible double track lines
[6] Absence of a shunting assistance pedal regardless of the direction of traffic for single track lines and tracks for two way working
[7] Absence of a pedal announcement mechanism
[8] 45-second delay for specific announcement reset devices

IRI: *http://data.europa.eu/949/frenchTrainDetectionSystemLimitationNumber*

Parameter of
Section with train detection limitation

Data Format

Data Presentation
Concept

Taxonomy Reference:
French Train Detection System Limitation Numbers

Values :

Code	Value
1	Sections with tonnage circulated per track is inferior to 15000 tons/day/track
2	Sections with directional Interlocking
3	Sections with 45-second delay for directional interlocking
4	Sections with Installation with track circuit announcement
5	Sections with absence of a shunting assistance pedal in the normal direction of circulation for non-reversible double track lines
6	Sections with absence of a shunting assistance pedal regardless of the direction of traffic for single track lines and tracks for two way working
7	Sections with absence of a pedal announcement mechanism
8	Sections with 45-second delay for specific announcement reset devices

Validation

Validation Rules:

French Train Detection System Limitation Number Skos

Comment: Part of the section with train detection limitation that indicates the type of train detection limitation. Only for the French network

Message: Indication of the frenchTrainDetectionSystemLimitationNumber: The train detection system {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/train-detection-numbers/FrenchTrainDetectionSystemLimitationNumbers.

French Train Detection System Limitation Number
Comment: Part of the section with train detection limitation that indicates the type of train detection limitation. Only for the French network
Message: frenchTrainDetectionSystemLimitationNumber : The train detection system has a french train detection limitation number that must be an IRI. This error may be due to not having a value, having more than one value or having a value that is not an IRI.

Special area type OP

Indicates the special area or location types such as safe areas and restricted area types.

IRI: *http://data.europa.eu/949/specialAreaType*

Parameter of
Special area

General Information

Number:
1.1.0.0.1.1

Data Format

Data Presentation
Concept

Taxonomy Reference:
Types of Special Areas

Values :

Code	Value
AirTightnessArea	Air tightness area
ChangingTractionSystem	Changing the traction system
EvacuationRescuePoint	Evacuation and Rescue Point
IndustrialRiskArea	Industrial risk areas
InhibitionTypeBrake	Inhibition of brake
NonStoppingArea	Non stopping Area
PantographLowered	Powerless section with pantograph to be lowered
PowerSwitchOff	Powerless section with main power switch to be switched off
RadioHole	Radio hole
SoundingHorn	Sounding the horn
TunnelStoppingArea	Tunnel stopping area
Walkway	Walkway

Validation

Validation Rules:

Special Area Type Skos
Comment: Validates that the special area type is from the correct SKOS concept scheme.
Message: specialAreaType (1.1.0.0.1.1): The value {$concept} for special area type must be from the SpecialAreaTypes concept scheme.

Special Area Type
Comment: Indicates the special area or location types such as safe areas and restricted area types.
Message: specialAreaType (1.1.0.0.1.1): The special area type must be a valid IRI from the SpecialAreaTypes concept scheme.

OPE TSI References

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3.2.4

Special tunnel area OP

Relates a tunnel with a special area or location.

IRI: *http://data.europa.eu/949/specialTunnelArea*

Parameter of
Tunnel

Data Format

Data Presentation
Special tunnel area

Validation

Validation Rules:
Special Tunnel Area
Comment: Relates a tunnel with a special area or location.
Message: specialTunnelArea (3.2.3): A Tunnel may have special tunnel areas and each must be an instance of SpecialTunnelArea. This error may be due to having a value that is not an instance of SpecialTunnelArea.

OPE TSI References

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3.2.3

Start offset from origin DP

Start offset of the section from the origin.

IRI: *http://data.europa.eu/949/startOffsetFromOrigin*

Parameter of
Linear Element Section

Data Format

Data Presentation
Double

Unit of Measure:
Metre

Validation

Validation Rules:
Start Offset From Origin
Comment: Start offset of the section from the origin.
Message: startOffsetFromOrigin: The start offset of the section from the origin must be represented as a positive integer or more than one value.

Starts at OP

Specifies the starting point of a linear reference.

IRI: *http://data.europa.eu/949/startsAt*

Parameter of

Net Linear Reference

Data Format

Data Presentation

Net Point Reference

Validation

Validation Rules:

Starts At

Comment: Specifies the starting point of a linear reference.

Message: startsAt: The net linear reference specifies a starting point that must be an instance of a NetPointReference. This error is due to not having a value, having more than one value or having a value that is not an instance of NetPointReference.

Subset of OP

Relates a subset with common characteristics with another subset with common characteristics.

IRI: *http://data.europa.eu/949/subsetOf*

Parameter of

Subset with common characteristics

Data Format

Data Presentation

Subset with common characteristics

Validation

Validation Rules:

Subset Of

Comment: Relates a subset with common chatacteristics with another subset with common characteristics.

Message: subsetOf: The common characteristics subset must have a subsetOf reference that is an IRI that refers to an instance of another common characteristics subset. This error is due to having a value that is not an instance of CommonCharacteristicsSubset.

Additional Information

General explanation:

Whenever a subset (A) is a subset of another subset (B), then the subset (A) inherits all the common characteristics of subset (B), which is that all the infrastructure elements belonging to subset (A) will have as common characteristics the union of parameters (A) and (B).

Subsidiary location code DP

The numeric code for the subsidiary location

IRI: *http://data.europa.eu/949/subsidiaryLocationCode*

Parameter of
Subsidiary location

Data Format

Data Presentation
String

Validation

Validation Rules:
Subsidiary Location Code
Comment: Subsidiary location code.
Message: subsidiaryLocationCode: An instance of subsidiary location may have a value for subsidiary location code. This error may be due to having more than one value or a length grather than 10

Subsidiary location name DP

The common name given to the subsidiary location

IRI: *http://data.europa.eu/949/subsidiaryLocationName*

Parameter of
Subsidiary location

Data Format

Data Presentation
Lang String

Validation

Validation Rules:
Subsidiary Location Name
Comment: The common name given to the subsidiary location
Message: subsidiaryLocationName: Each Subsidiary Location may have a name. If it does, there should be at least one name in English (@en). Additional multilingual names are allowed, but only one value per language tag is permitted. All values must be language-tagged string literals.

Subsidiary location type OP

Indicates the subsidiary location type that belongs to a taxonomy.

IRI: *http://data.europa.eu/949/subsidiaryLocationType*

Parameter of
Subsidiary location

Data Format

Data Presentation
Concept

Taxonomy Reference:
Subsidiary location types

Values :

Code	Value	Explanation
00	Not Defined	
04	Sorting Code	Destination station of the single wagon forwarding has a code in order to provide shunting technology.
05	Vehicle Parking Points	Place for parking rail vehicles.
06	Public Loading Places	Public sidings consist of one or more publicly accessible installation of loading tracks, possibly Private sidings consist of one or more installations of rail infrastructure and loading facilities whose access is generally restricted to the owner. They often belong to industrial, commercial,
07	Private sidings	Private sidings consist of one or more installations of rail infrastructure and loading facilities whose access is generally restricted to the owner. They often belong to industrial, commercial, military or other types of premises connected to the public rail network. The layout configuration depends on the individual requirements of the respective user. Sometimes several private sidings are connected to a feeder track, which in turn is connected to the public network (e.g. in ports). (Sub type to Freight terminal)
09	Depot	Place for overhaul or maintenance of the rolling stock
25	Underpass	Undercrossing or underground
28	Sign and board	Static equipment to inform the board staff for train traffic and shunting or the passengers in a station
29	Phase break	Border of the power supply systems
36	Freight yard	A production location which can be used as an origin, intermediate or destination station of a freight train
37	Loading point	A usage of a physical location. Each loading point is assigned to a DIUM station. Loading point is a customer siding (public or private) used in communication with RUs

Code	Value	Explanation
39	Reservation code	Attribute of the location that can be start or end point of traveling with
40	Metastation	A location that forms the link between different stations that are
41	Company specific Identifier	Similar code as primary location code. used as key to legacy location coding.
42	DIUM	DIUM stations - Places of acceptance/delivery/handover Commercial Station open into international traffic of goods (tariff point or contract station included in DIUM) – consignment acceptance/delivery station (loading points are excluded and covered by TypeCode 37). Could be a location to handover wagons.
43	Passengers cars loading	A place of physical location on the open access network where passengers can load/unload their car
45	Sewage dump	A place for cleaning purposes - disposal of the waste.
46	Refuelling	Location where refuelling takes
47	Mains Supply	Location where energy supply can be provided for the rolling stock e.g. preheating.
48	Water Supply	Location where water supply can be
50	Indoor cleaning platform	Place for interior cleaning
51	Car-wash	Place for outdoor cleaning
52	Short dry- cleaning track	Place for special cleaning
54	Sand-filling station	Location where sand is filled.
56	Signal box	A building containing signalling equipment and staff.
57	Intermodal Terminal	Intermodal Terminal is a location which provides the space, equipment and operational environment under which the transfer of loading units (freight containers, swap bodies,

Code	Value	Explanation
58	OSJD system	Location code used within OSJD.
59	Train Service Substitute Stop	Place outside of railway station or railway stop, where passengers board or leave bus or any other transport mean as substitution of
60	Multifunction al rail terminal	Facilities for conventional and/or intermodal rail/road transshipment principally open for public use and for all types of cargo. This kind of
61	Relief facility	Facilities providing equipment and infrastructure used to overcome a disruption (derailment, collision or other accidents).
70	Network Border	Network border between two neighboring IM's; first or last Primary Location on a network.
71	State border	Political border between two
72	Administrative border	Border point inside a member state to define federal structures or
74	Operational handover	Location where the responsibility for operation changes or can change between two involved IMs.
75	Planning handover	Location where the responsibility for timetable planning and path allocation changes or can change between two involved IMs
76	Stopping	This SLC defines a point along a track
99	Relation to Station	An indicator used to show that this location is a subsidiary of another

Validation

Validation Rules:

Subsidiary Location Type Skos
Comment: Subsidiary location type.
Message: subsidiaryLocationType: The Subsidiary Location {$this} (label {?slLabel}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/subsidiary-location-types/SubsidiaryLocationTypes.
Subsidiary Location Type
Comment: Subsidiary location type.
Message: subsidiaryLocationType: An instance of subsidiary location may have a value for subsidiary location type. This error may be due to having a value that is not an IRI.

System separation info pantograph lowered DP

Part of the system separation info of a track that shows whether the pantograph has to be lowered.
The system separation info is the Indication of required several information on system separation.

IRI: *http://data.europa.eu/949/systemSeparationInfoPantographLowered*

Parameter of

System separation info

Data Format

Data Presentation

Boolean

Validation

Validation Rules:

System Separation Info Pantograph Lowered
Comment: Indication of required several information on system separation.
Message: System separation info pantograph lowered: The track has the system separation info with the indication whether the pantograph is lowered value, that must be Y/N (boolean). This error may be due to the track having a SystemSeparationInfo with no value, more than one value, or a value that is not Y/N (boolean).

System separation info Km DP

Part of the system separation info of a track. Indicates the location from the start of the line where the new value is valid.
The system separation info is the Indication of required several information on system separation.

IRI: *http://data.europa.eu/949/systemSeparationInfoKm*

Parameter of

System separation info

Data Format

Data Presentation

Double

Validation

Validation Rules:

System Separation Info Km
Comment: Indication of required several information on system separation.
Message: System separation info km : The track has a system separation info with the location from the start of the line value (km), that must be a double.This error may be due to the track having a SystemSeparationInfo with no value, more than one value, or a value that is not a double (real) number.

System separation info length DP

Part of the system separation info of a track that shows the length of the system separation in metres.
The system separation info is the Indication of required several information on system separation.

IRI: *http://data.europa.eu/949/systemSeparationInfoLength*

Parameter of
System separation info

Data Format

Data Presentation
Integer

Unit of Measure:
Metre

Validation

Validation Rules:
System Separation Info Length
Comment: Indication of required several information on system separation.
Message: System separation info length: The track has a system separatione info with the length of the system separation value (length), that must be an integer. This error may be due to the track having a SystemSeparationInfo with no value, more than one value, or a value that is not an integer.

System separation info switch off breaker DP

Part of the system separation info of a track that shows whether the breaker has to be switched off.
The system separation info is the Indication of required several information on system separation.

IRI: *http://data.europa.eu/949/systemSeparationInfoSwitchOffBreaker*

Parameter of
System separation info

Data Format

Data Presentation
Boolean

Validation

Validation Rules:

System Separation Info Switch Off Breaker
Comment: Indication of required several information on system separation.
Message: System separation info switchOffBreaker : The track has the system separation info with the indication wether the breaker may be switched off value, that must be Y/N (boolean). This error is due to the track having a SystemSeparationInfo with no value, more than one value, or a value that is not Y/N (boolean).

TEN-T network level OP

Classification of the element according to its level in the Trans-European Transport Network (TEN-T).

IRI: *http://data.europa.eu/949/tentNetworkLevel*

Parameter of

TEN-T Corridor

Data Format

Data Presentation

Concept

Taxonomy Reference:

TEN-T Network Levels

Values :

Code	Value
01	Core network
02	Extended core network
03	Comprehensive network

Validation

Validation Rules:

Tent Network Level
Comment: Classification of the element according to its level in the Trans-European Transport Network (TEN-T).
Message: tentNetworkLevel: Each TEN-T corridor classification (era:TENTCorridor) may have a TEN-T network level that is an IRI and a SKOS concept. This error is due to having a value that is not an IRI or not a SKOS concept.

Tent Network Level Skos
Comment: Classification of the element according to its level in the Trans-European Transport Network (TEN-T).
Message: TEN-T network level: The TEN-T corridor classification {$this} has a value {?concept} that is not one of the predefined values in the scheme http://data.europa.eu/949/concepts/ten-t-network-levels/TENTNetworkLevels.

Train detection system OP

Technical characteristics of the train detection systems installed in the section of line.

IRI: *http://data.europa.eu/949/trainDetectionSystem*

Parameter of

Running track
Subset with common characteristics

Data Format

Data Presentation

Train Detection System

Validation

Validation Rules:

Train Detection System
Comment: Train detection systems installed in the section of line.
Message: trainDetectionSystem (1.1.1.3.4) : The track may have a value of a train detection system that must be an instance of TrainDetectionSystem. This error may be due to the track having a value that is not an instance of the class TrainDetectionSystem.

Additional Information

General explanation:

It can be repeated as many times as the number of different train detection systems are present.
Not all parameters are applicable to all types of train detection systems; it depends on the applicability condition.
For RDF data provision:
The value of this property is an instance of the era:TrainDetectionsystem, which has as properties the parameters with indices 1.1.1.3.7.x.

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, this property is the equivalent of the "Set" attribute, grouping parameters 1.1.1.3.7.x.

TSI compliant train protection system (ETCS) OP

European Train Control System (ETCS) application level supported by the track side equipment.

IRI: *http://data.europa.eu/949/etcs*

Parameter of

Running track
Subset with common characteristics

Data Format

Data Presentation

ETCS

Validation

Validation Rules:

Etcs
Comment: European Train Control System (ETCS) application level supported by the track side equipment.
Message: etcs (1.1.1.3.2) : The track may have a value of a European Train Control System (ETCS) that must be an instance of ETCS. This error may be due to the track having a value that is not an instance of the class ETCS.

Additional Information

General explanation:

It can be repeated as many times as the number of different ETCS levels are present.

For RDF data provision:
The value of this property is an instance of the era:ETCS, which has as properties the parameters 1.1.1.3.2.1 and 1.1.1.3.2.2.

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, this property is the equivalent of the "Set" attribute, grouping parameters 1.1.1.3.2.1 and 1.1.1.3.2.2.

Type of line referencing system OP

The preferred line referencing system.

IRI: *http://data.europa.eu/949/lrsMethod*

Parameter of

Linear Positioning System

Data Format

Data Presentation

Concept

Taxonomy Reference:

Line reference systems

Values :

Code	Value	Also Known As
00	Line, Track, Kilometre, Distance	LVBK
01	Track, Reference, Distance	T-R-D
02	Track, Distance from Track origin	V-S
03	Trail, Distance from trail origin	T-S
04	Trail, intrinsic coordinate	T-i
05	Path - Odometry	P-O

Validation

Validation Rules:

Lrs Method
Comment: The preferred line referencing system.
Message: lrsMethod: The linear positioning system must have an 'lrsMethod' value that is an IRI.
Lrs Method Skos
Comment: The preferred line referencing system.
Message: lrsMethod: The linear positionung system {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/lines/ReferenceSystems.

Type of traffic OP

Classification of the type of traffic carried on the element.

IRI: *http://data.europa.eu/949/typeOfTraffic*

Parameter of

TEN-T Corridor

Data Format

Data Presentation

Concept

Taxonomy Reference:

Traffic Types

Values :

Code	Value
01	Passenger
02	Freight

Validation

Validation Rules:

Type Of Traffic
Comment: Classification of the type of traffic carried on the railway line
Message: typeOfTraffic: Each TEN-T corridor classification (era:TENTCorridor) must have a type of traffic that is an IRI and a SKOS concept (or be declared via era:notYetAvailable / era:notApplicable). This error is due to a missing value, or a value that is not an IRI or not a SKOS concept.
Type Of Traffic Skos
Comment: Classification of the type of traffic carried on the railway line
Message: Type of traffic: The TEN-T corridor classification {$this} has a value {?concept} that is not one of the predefined values in the scheme http://data.europa.eu/949/concepts/traffic-types/TrafficTypes.

Validity OP

Relates a feature with a temporal feature to indicate a validity period.

IRI: *http://data.europa.eu/949/validity*

Parameter of

ERA Feature

Data Format

Data Presentation

Temporal Feature

Validation

Validation Rules:

Validity
Comment: Relates a feature with a temporal feature to indicate a validity period.
Message: validity: The feature has a validity value that points to an instance of TemporalFeature. This error is due to having a value that is not an instance of TemporalFeature.

c: Classes
op: Object Properties
op: Data Properties
ep: External Properties