

STRATEGIC EUROPEAN DEPLOYMENT PLAN FOR THE EUROPEAN-WIDE IMPLEMENTATION OF THE TECHNICAL SPECIFICATION FOR INTEROPERABILITY TELEMATIC APPLICATIONS FOR FREIGHT (TAF TSI)



PROJECT No: 2005-EU-93008-S

Deliverable 2 - Definition of the functional and performance requirements and of the associated data necessary to deliver the TAF system

Appendix D - Infrastructure Restriction Notice Data



Table of Contents

1 Introduction	1
1.1 Purpose	1
1.2 Intended Audience	1
1.3 Evolution of the Functional Requirements Specification	1
1.3.1 Distribution	1
1.3.2 Configuration Management	1
1.4 References	1
1.4.1 Normative References	1
1.4.2 Other References	2
1.5 Definitions and Acronyms	2
1.6 Responsibilities	2
2 Functional Requirements Specifications	3
2.1 Initial requirements	3
2.1.1 TAF-TSI	3
2.1.2 OPE-TSI	3
2.2 Benefits	4
2.3 Definition	4
2.4 Actors	4
2.5 Process	5
2.5.1 Overall Process	5
2.5.2 Normal Lifecycle	6
2.6 Main functions	6
2.6.1 Update the IRN	6
2.6.2 Report from the IRN	7
2.7 Data Description	8
2.7.1 Infrastructure Manager	8
2.7.2 Location	8
2.7.3 Event	9
2.7.4 Restriction	9
2.7.5 Contact Point	9
2.7.6 Event Cause	9
2.7.7 Free Text Field Languages	9



2.7.8 Class Diagram	10
2.8 Dependencies	10
2.8.1 Infrastructure	10
2.8.2 Network Statement (NS)	10
2.8.3 Contracted Path	10
2.9 Access Rules and Rights	11
2.9.1 UpdateDB	11
2.9.2 Inform and Consult	11
2.10 Data Security	11
2.11 Service level	11
2.12 Fallback procedures	11
2.13 Volumes	11
3 Technical architecture	13
4 Messages	15
5 Codifications	17
5.1 Train Control Systems	17
5.2 Type of Events	17
6 Detailed Data Requirements	18
Table of figures:	
Figure 1: IRN Actors	5
Figure 2 : Use cases of IRN Functions	7
Figure 3 : Message diagram	7
Figure 4 : Use case of reporting function	8
Figure 5 : Message diagram	8
Figure 6 : IRN Class Diagram	10
Figure 7 : Decentralised IRN database	14



1 Introduction

1.1 Purpose

The Purpose of this document is to further specify and clarify the specifications described in the TAF-TSI concerning the Infrastructure Restriction Notice Database.

The Functional Requirements Specifications will be the basis for the detailed specifications realized by each Infrastructure Manager or on their behalf.

This document is limited to functional and technical aspects and does not cover organisational issues, such as reference file management

This document is part of the SEDP

1.2 Intended Audience

The entities, within each IM and RU, in charge of responding to the questionnaire.

The entities, within each IM and RU, in charge of implementing, managing or accessing the Infrastructure Restriction Notice Database.

1.3 Evolution of the Functional Requirements Specification

1.3.1 Distribution

The FRS will be distributed to the representative bodies from the railway sector acting on a European level as defined in Article 3(2) of Regulation (EC) No 881/2004 and their members.

New versions will be accessible electronically.

1.3.2 Configuration Management

To be defined

1.4 References

1.4.1 Normative References

Directive 2001/16 related documents

- Interoperability of the trans-European conventional rail system Draft Technical Specification for Interoperability "Telematic Applications for Freight Services" Sub-System. 01/16-ST02 part 2 version EN07 23/11/2004
- Commission Regulation (EC) No 62/2006 of 23 December 2005 concerning the technical specification for interoperability relating to the telematics applications for freight subsystem of the trans-European conventional rail system
- Interoperability of the trans-European conventional rail system Draft Technical Specification for Interoperability Subsystem: Operation and traffic management 01/16-ST03 part 2 version EN06 13.05.2005



1.4.1.1 CEN Workshop agreements:

These documents are also available from the CEN/ISSS TSI/TAF Web site
<http://comelec.afnor.fr/cen/wstaf>

- Draft CWA “Coding for Customers and Companies in the Rail Transport Chain” (V0.3)
- Draft CWA “Coding for Railway Business Locations” (V0.3)
- Draft CWA “Coding for Train Identification” (V0.3)

1.4.2 Other References

Network Statement - Common Structure & Implementation Guide, RNE – WG Network Statement, 31/01/2005

1.4.2.1 Common SEDP documents shared by several task groups (to be elaborated)

- Common SEDP Introduction
- Common SEDP Technical Documents
- Common SEDP Organisational Documents
- SEDP Definitions
- Common SEDP Task group results overview

1.5 Definitions and Acronyms

- FRS: Functional Requirement Specifications
- IM: Infrastructure Management
- IRN: Infrastructure Restriction Notice
- RU: Railway Undertaking
- SEDP: Strategic European Deployment plan
- TAF-TSI: Technical Specification for Interoperability "Telematic Applications for Freight Services" Sub-System
- OPE-TSI: Technical Specification for Interoperability Subsystem: Operation and traffic management
- Pre-departure period: If nothing else is defined in a contract between the IM and RU, the pre-departure period starts one hour before the scheduled time of departure.”
- OSS: One-Stop-Shop

1.6 Responsibilities

These FRS are written under the responsibility of the SEDP project team by representatives of European IMs and RUs.



2 Functional Requirements Specifications

2.1 Initial requirements

The Functional requirements are derived from the requirements expressed in the Technical specifications for interoperability:

- Telematics Applications for freight services (TAF-TSI)
- Operation and traffic management (OPE-TSI)

2.1.1 TAF-TSI

In chapter 4.2.11.2 the TAF-TSI requires:

“Each IM is responsible for the suitability of a path on his infrastructure and the RU is obliged to check the train characteristics against the values given in the path details of its contracted path.

Without prejudice to the conditions for the usage of a path in the Network Statements or to the responsibilities in case of any restrictions in the infrastructure explained in the TSI Operation and Traffic Management, the RU must know before preparing the train, whether there are any restrictions on the line segments or stations (nodes) affecting its train composition described in the path contract.

For this the IMs must install and fill-in Infrastructure Restriction Notice Databases. The structure of such a database is outlined in Annex A index 2. The entries of these databases are based on segments in line with the relevant Network Statements with the addition of restriction information. These databases must be accessible via the Common Interface [...]

The RU is obliged to take into account all restrictions in the Infrastructure Restriction Notice Database affecting its train running until the pre-departure period. If nothing else is defined in a contract between the IM and RU, the pre-departure period starts one hour before the scheduled time of departure.”

In the pre-departure period the IM must notify directly the RU of any relevant changes arising in the Infrastructure Restriction Notice Database.”

2.1.2 OPE-TSI

In chapter 4.2.1.2.2.2 the OPE-TSI requires:

“The Infrastructure Manager must advise any elements [of the route book] modified either permanently or temporarily to the Railway Undertaking. These changes must be grouped by the Railway Undertaking into a dedicated document or computer medium whose format must be the same for all the infrastructures worked over by the trains of an individual Railway Undertaking.

In conformity with Annex III paragraph 2 of Directive 2004/49/EC, the Infrastructure Manager’s Safety Management System must contain a validation process to ensure that the content of the documentation provided to the Railway Undertaking(s) is complete and accurate.

In conformity with Annex III paragraph 2 of Directive 2004/49/EC, the Railway Undertaking’s Safety Management System must contain a validation process



to ensure the content of the document of modified elements is complete and accurate. “

2.2 Benefits

Better planning for RU, IM and neighbouring IM

The Infrastructure Restriction Notice provides information to the RU during the Train preparation phase of possible last minute constraints on to the train characteristics. The RU can take into consideration these changes during his train formation.

Traffic manager of the IM has fewer problems as the RUs have anticipated the restrictions.

Neighbouring IMs can also better anticipate problems

The Infrastructure Restriction Notice replaces or covers existing processes between IM and RU.

This should improve on-time train performance.

The IRN does not replace existing safety related procedures between train crews and traffic control centres.

2.3 Definition

The Infrastructure Restriction Notice Database includes all changes to the infrastructure, which would affect the train characteristics agreed between the IM and RU in the contracted timetables.

It includes rerouting only if this has an effect on the train characteristics. The characteristics of the new route are contained in the Network Statement and not in the Infrastructure Restriction Notice.

The Infrastructure Restriction Notice Database does not cover train delays.

2.4 Actors

The main actors are the Updater of Infrastructure Restriction Notices and the recipient of the Infrastructure Restriction Notices.

Typically the updater is the Traffic manager in charge of real-time traffic operation or the maintenance planner in charge of short term organisation of maintenance works.

The recipient is usually the Railway Undertaking and IM Actors in direct contact with the Railway Undertaking.

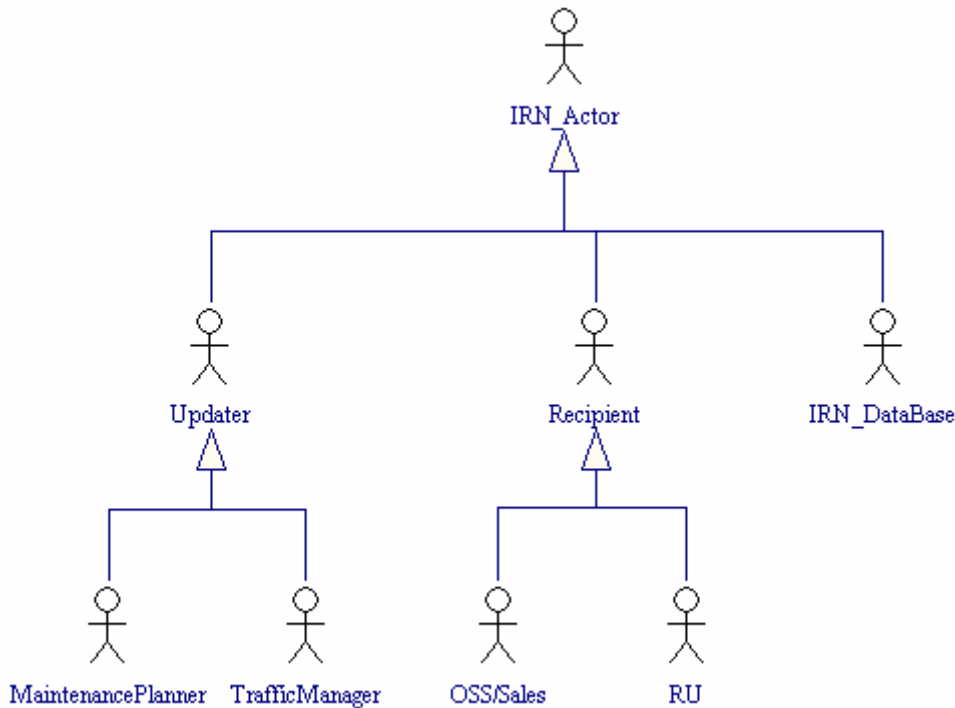


Figure 1: IRN Actors

2.5 Process

2.5.1 Overall Process

Following process describes the overall process from the long-term planning of the Maintenance Work until the run of the train

4-6 years in advance: Framework plan and budget of the planned maintenance and improvements works on the existing infrastructure are set up

3 years before the planned work: major construction and maintenance work are planned

2 years before the planned work: detailed planning of construction and maintenance work as basis for the Network Statement.

1 year before the planned work: Network statement is published (in December one year before the publication of the timetable.

4-6 month before planned work: last check, detailed simulation of the actual capacity during the work.

2-3 month before the planned work: agreement with the impacted RUs and IMs. IM sends the latest contracted timetable to the RU.

Less than 2-3 month before an incident: if the IM cannot renegotiate the contracted timetable, the IM updates the Infrastructure Restriction Notice database. Only Infrastructure Restrictions which cannot be renegotiated with the RUs must be included in the IRN DB. The IM may also include Infrastructure restrictions which have been renegotiated;



After the train formation during the pre-departure period and during run of the train the RU is informed by the Traffic control centre of the IM. The infrastructure restriction notice database must be updated if other trains are impacted.

2.5.2 Normal Lifecycle

The normal lifecycle of an Infrastructure Restriction notice is:

- The Updater (the Traffic Manager or Maintenance Planner) creates a restriction notice in the IRN Database.
- At any time he may modify the Infrastructure restriction.
- If the estimated end time is not met, the IM must update the estimated end time
- He ends the restriction by entering the actual end date/time of the restriction event.
- Any updated information in the database is immediately sent to the recipients (OSS/Sales or Railway Undertaking) of the information. (OPE TSI requirement)
- At any time the recipients may consult the IRN DB. (TAF-TSI requirement)

2.6 Main functions

The Traffic manager or the Maintenance planner updates the Infrastructure restriction notice database (creation, modification, deletion).

The Infrastructure Restriction Notice Database then provides the information to the Railway undertakings and the other interested parties (e.g. OSS/Sales).

Filtering:

The IM filters the Restriction reports send out to the RU either based:

- on allowed routes,
- on train identifications
- or on any other IM specific criteria.

The IM may choose the more appropriate filtering method or none at all.

The recipient of Infrastructure Restriction Notices may choose to receive all new or updated Restriction Notices automatically or upon his request (Push or pull messages).

2.6.1 Update the IRN

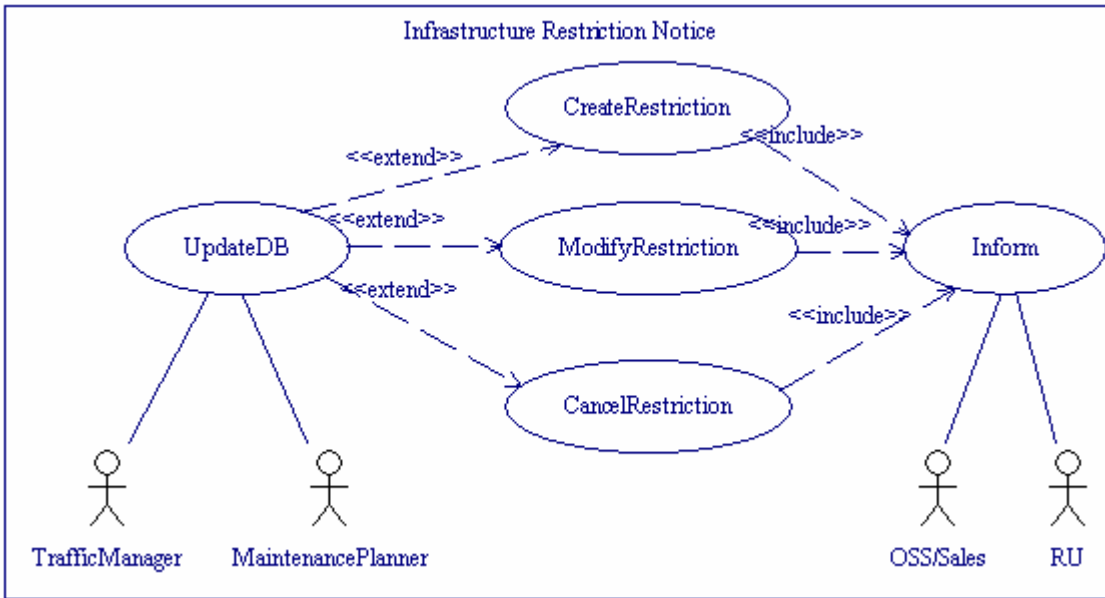


Figure 2 : Use cases of IRN Functions

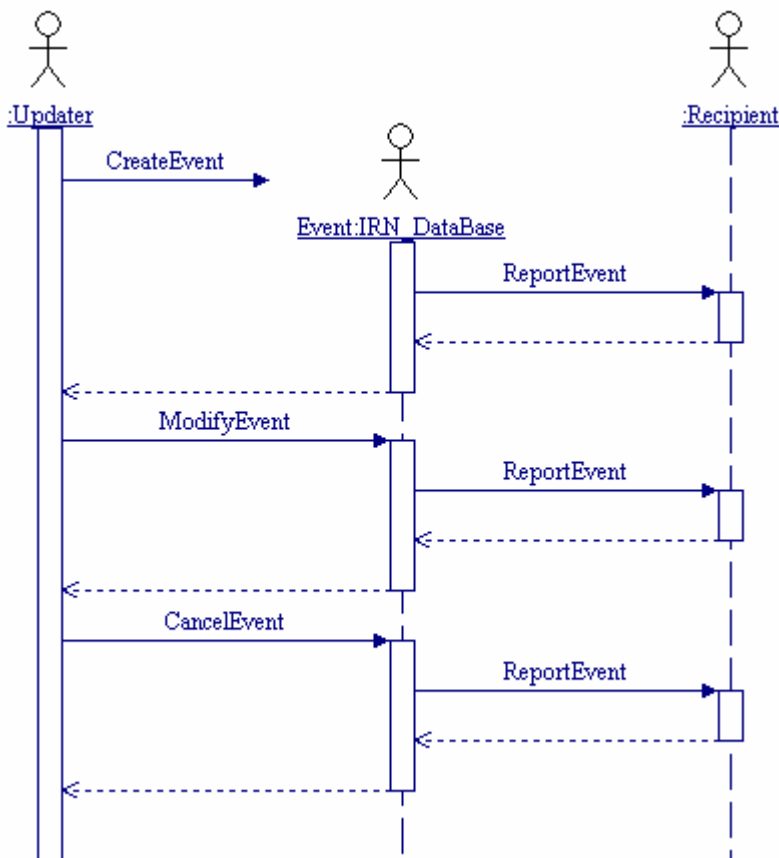


Figure 3 : Message diagram

2.6.2 Report from the IRN

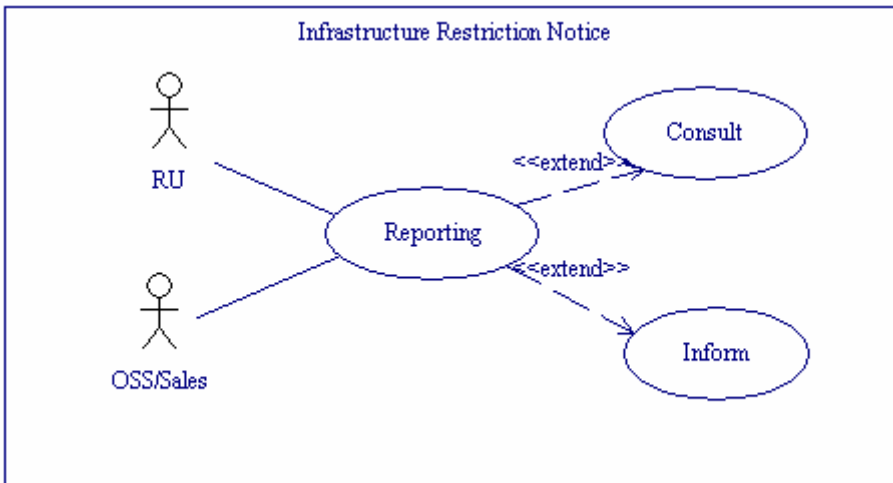


Figure 4 : Use case of reporting function

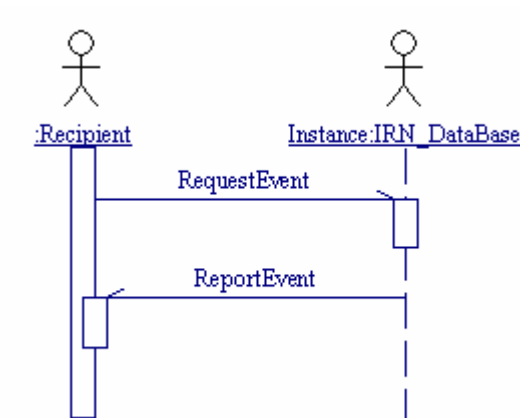


Figure 5 : Message diagram

2.7 Data Description

2.7.1 Infrastructure Manager

The Infrastructure Manager is the IM where the Restriction occurred.

IM_ID is the identifier of the Infrastructure Manager according to CEN codification.

IM_Name is the Name of the Infrastructure Manager.

2.7.2 Location

The location is either

- where the restriction occurs or
- is the start or end of a line segment where the restriction occurs.

The LocationID identifies the Location according to CEN codification.

The LocationName is the Name of the Location from the LocationIdent Reference File.



2.7.3 Event

The Event results in one or more restrictions and is described by a Start Date/Time, an estimated and an actual End Date/Time.

Free Text describes the event, the causes and the consequences.

2.7.4 Restriction

The restriction quantifies in detail the impact of the event. Each restriction is described by a type of restriction, a value and a free Text. Following restriction type may exist:

- Train Weight
- Axle Weight
- Loading Gauge Reduction
- Power Supply
- Train Control System
- Dangerous Goods restriction
- Rerouting
- Train Radio System

It does not include:

Tilting restrictions, Wind sensitivity, Livestock restrictions, Banking restrictions, Brake performance restrictions, Temporary Speed Restrictions, Weight per metre

2.7.5 Contact Point

The Contact point is the person or entity in charge of providing information about the restriction. It is described by:

- Name
- Address
- E-mail
- Telephone number
- Fax Number

And may include free text for additional information.

2.7.6 Event Cause

The Event cause codifies the causes of the restriction.. The codified cause may be described in any language.

Possible cause codes are:

- Maintenance work
- Construction work
- Accidents
- ...

2.7.7 Free Text Field Languages

The free text fields are filled in the Infrastructure Manager's 'operating' language



2.7.8 Class Diagram

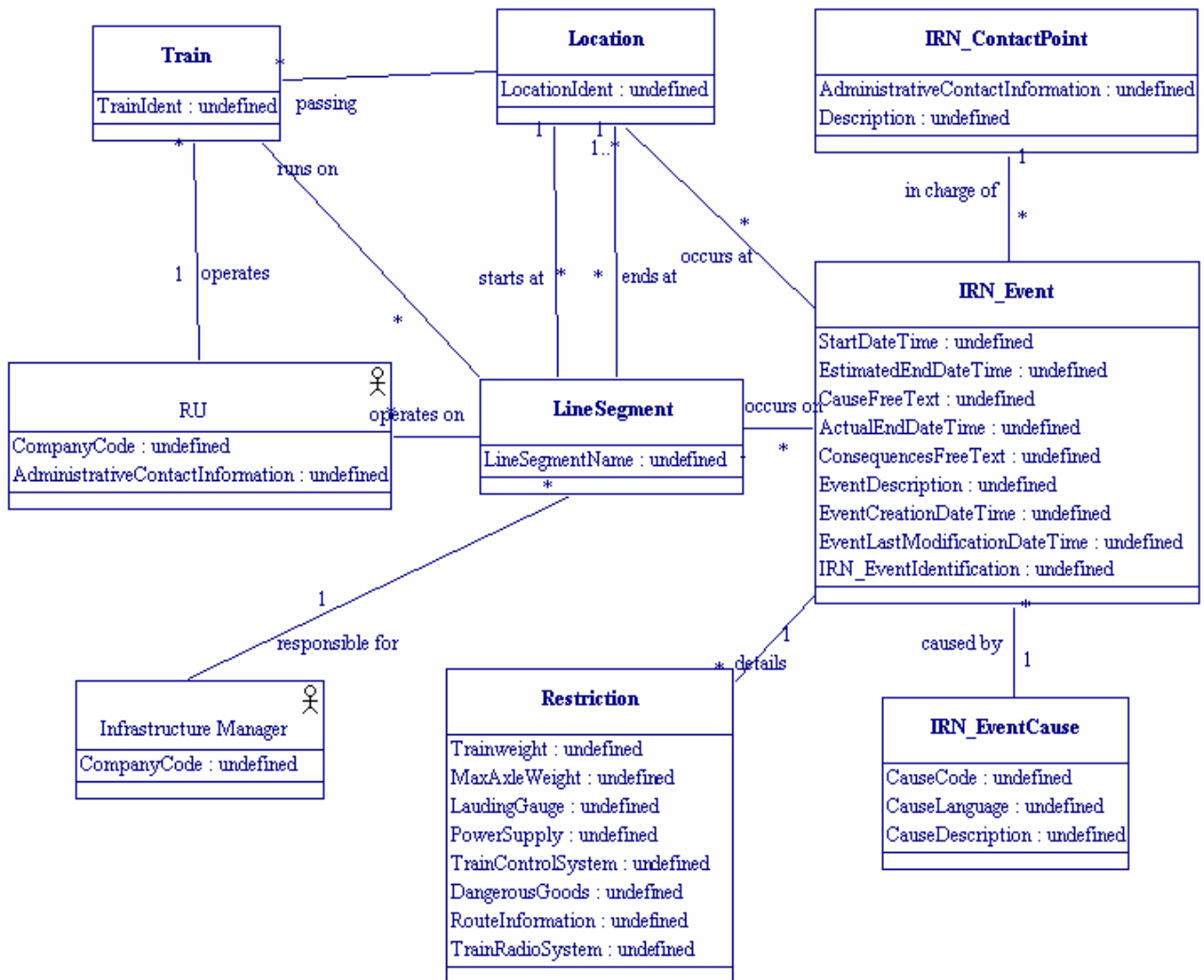


Figure 6 : IRN Class Diagram

2.8 Dependencies

2.8.1 Infrastructure

The infrastructure is described via the Locations as it is the only internationally agreed infrastructure description. A line segment is described by its start and end location.

2.8.2 Network Statement (NS)

The information in the Infrastructure Restriction Notice database is closely related to the data in the Network Statement. However there is not necessarily any IT link between the NS and the IRN.

2.8.3 Contracted Path

There is not necessarily any link between the Contracted Path and the IRN.



2.9 Access Rules and Rights

2.9.1 UpdateDB

The IM as owner of the Data must insure Data Update and Data Quality by providing proper access rules.

The Infrastructure Manager must ensure that the data in the IRN DB is complete and accurate.

2.9.2 Inform and Consult

Following Entities must have access to the Infrastructure Restriction notice Database:

- Railway undertakings with a contracted train path on the Infrastructure described.
- Other Infrastructure Managers, which may be affected by the Infrastructure Restrictions

IMs may allow access rights to other organizations (e.g. subcontractors).

The Recipient must ensure that the data received from the IRN DB is used properly.

2.10 Data Security

The data transmission must provide means to guarantee data consistency

2.11 Service level

The Service level is based on the requirements in the TAF TSI (to be coordinated with the other task groups).

- Guaranteed delivery of IRN Reports
- Availability 99.9% within a 28 days monitoring period (40 minutes). This availability is measured at the outgoing Interface of the IM and does not include planned interruptions for maintenance, data optimization, etc.
- User response time 5 seconds

2.12 Fallback procedures

If the IRN DB is not accessible to the RU with up to date information, the IM must inform the recipients about the unavailability and provide the Information via alternative solutions (e-mail, web-server, FTP, phone, fax, etc.)

2.13 Volumes

Following values should help calibrate the system during the detailed specification phase on national and/or European level:

- Number of RUs,
- Number of IMs
- Number of trains per day,
- Number of concurrent events
- Average event duration
- Number of users



- Number of modifications of an event
- Number of cancellation of events
- Number of RU requests/train
- Duration of online availability
- Duration of offline availability



3 Technical architecture

The Infrastructure Restriction Notice Database is a decentralised database. Each IM operates its own Infrastructure Restriction Notice Database. IMs may choose to share a Database. One first example of such a shared approach is Europtirails.

The Infrastructure Restriction Notice Database must be accessible via the Common Interface. The IMs must provide a single point of access to their Infrastructure Restriction Notice Data.



IRN architecture

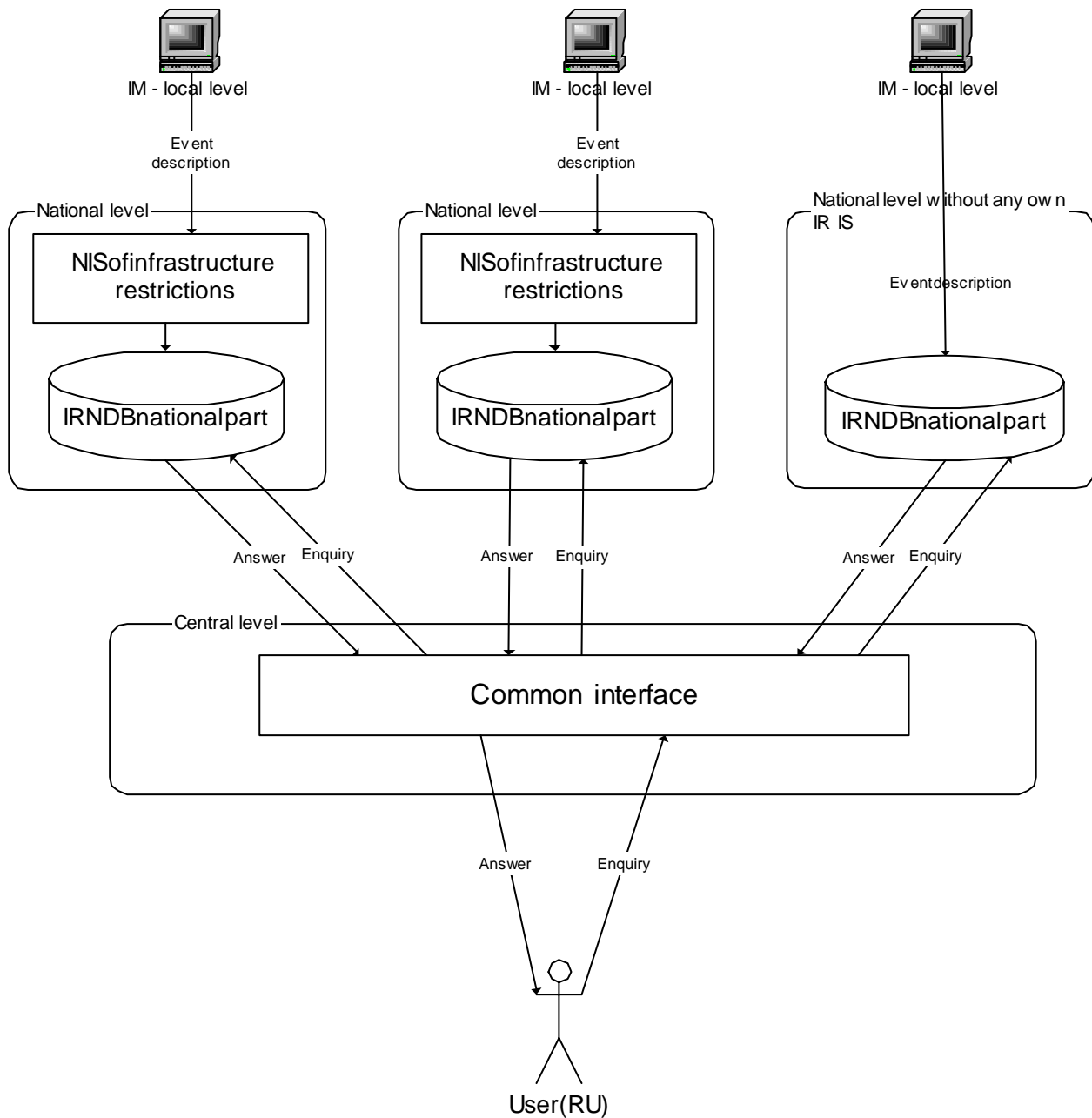


Figure 7 : Decentralised IRN database



4 Messages

See chapter 6 for detailed XML message format

O=Optional M=Mandatory A= Generated Automati- cally in IRN DB	Create Event	Modify Event	Cancel Event	Report Event	Request Events	Format
MessageStatus	New	Alteration	Delete	M		1=New (default) 2=Alteration 3=Deletion
Responsible IM	M	M	M	M	O, if empty all IMs	CEN codification
RU	-	-	-	M	M	CEN codification
Line Segment						
Start Location	M	-	-	M	-	CEN codification
End Location	O	-	-	O	-	CEN codification
Segment Description	O	-	-	O	-	FreeText 255AN
IRN_Event						
IRN Event-Identification	M	M	M	M	O, over- rides all other cri- teria	IM_Code + IM spe- cific coding structure (string max length 15)
Start Date Time	M	O	-	M	-	YYYYMMDDhhmm
Estimated End Date- Time	M	O	-	M	-	YYYYMMDDhhmm
Actual End Date Time	-	O	-	O	-	YYYYMMDDhhmm
Event Description	O	O	O	O	-	FreeText 255AN
Event Cause Code	M	-	-	M	-	EventTypeCode ac- cording UIC leaflet 407-1
Event Cause Description	O	O	-	O	-	FreeText 255AN
Event Consequences- Description	O	O	-	O	-	FreeText 255AN
Event Creation Date- Time	A	-	-	M	-	YYYYMM- DDhhmmss
Event Last Modified Da- te Time	A	A	-	M	O	YYYYMM- DDhhmmss
Restrictions	>0	≥0	=0	>0	≥0	
Train Weight						4N [tons]
MaxAxleWeight						2N [tons]
Loading Gauge						GA, GB, GB1, GC, G
Power Supply						Boolean : "0" no electric power sup- ply 3AN (Boolean : 1=required, 0=forbidden + 2N :Train Control System coding)
Train Control System						"0" no dangerous goods allowed, else in free text
Dangerous Goods Res- triction						see free text
Rerouting						required radio sys-
Train Radio System						



O=Optional M=Mandatory A= Generated Automati- cally in IRN DB	Create Event	Modifiy Event	Cancel Event	Report Event	Request Events	Format
						tem "1"=GSM-R, "2"=Analog
ImpactedTrainList	≥0	≥0	=0	≥0		
Train Ident	M	O	-	M	O	CEN Codification (includes Date)
ImpactedRU	>0	≥0	=0	=0	=0	
CompanyCode	M	O	-	-	-	CEN codification
ContactPoint -						
Contact Name	M	O	-	O	-	50AN Person or Or- ganisation
Contact Adress	O	O	-	O	-	200AN
Contact Email	M	O	-	M	-	30AN
Contact Phone	O	O	-	O	-	30AN
Contact Fax	O	O	-	O	-	30AN
Contact Free Text	O	O	-	O	-	255AN
RequestPeriod						
Period Start Date Time					O	YYYYMMDDhhmm
Period End Date Time					O	YYYYMMDDhhmm



5 Codifications

5.1 Train Control Systems

This list is not exhaustive (source leaflet 407-1)

Value	Text
01	FFB
02	FZB
03	LZB
04	I 60 R
05	PZ 80
06	I 54
11	ZUB
12	FSS
21	TVM
22	KVB
31	ATB
32	ATBNG
91	ETCS
...	...

5.2 Type of Events

EventTypeCode	Eventype
01	Maintenance work
02	technical fault in equipment
03	Accident/incident
04	strike
05	Construction/project work
07	bad weather
...	



6 Detailed Data Requirements

Elements

[ActualEndTime](#)
[Address](#)
[AdministrativeContactInformation](#)
[CountryCode](#)
[CreateDateTime](#)
[DangerousGoodsIndicator](#)
[eMail](#)
[EndDateTime](#)
[EndLocation](#)
[EstimatedEndTime](#)
[FaxNumber](#)
[FreeTextField](#)
[ImpactedRU](#)
[IRN_ContactPoint](#)
[IRN_Dataset](#)
[IRN_Event](#)
[IRN_EventCause](#)
[IRN_EventIdentification](#)
[IRN_RequestPeriod](#)
[IRN_Restriction](#)
[LastModifiedDate](#)
[LineSegment](#)
[LoadingGauge](#)
[MaxAxleWeight](#)
[Name](#)
[PhoneNumber](#)
[PostalCode](#)
[PowerSupply](#)
[RequestedPeriod](#)
[ResponsibleIM](#)
[RouteInformation](#)
[StartDate](#)
[StartLocation](#)
[TrainCC_SystemCode](#)
[TrainCC_SystemRestriction](#)
[TrainList](#)
[TrainRadioSystem](#)
[TrainWeight](#)

Complex types

[LocationIdent](#)
[TrainIdent](#)
[YesNoIndicator](#)

Simple types

[CommunicationRefID](#)
[CompanyCode](#)
[CountryIdent](#)
[DateTime](#)
[FreeText](#)
[IdentCode](#)
[Numeric1-5](#)
[Numeric4-4](#)
[PathIdent](#)
[String1-7](#)
[String5-6](#)
[TrainCC_Syst](#)
[WeightValueTonne](#)

element **ActualEndTime**

diagram

ActualEndTime

Identifies the actual date and time of arrival of the Wagon or Unit on the final destination of the customer siding.

type [DateTime](#)

used by element [IRN_Event](#)



annotation documentation Identifies the actual date and time of arrival of the Wagon or Unit on the final destination of the customer siding.

```
source <xs:element name="ActualEndDateTime" type="DateTime">
  <xs:annotation>
    <xs:documentation>Identifies the actual date and time of arrival of the Wagon or Unit on the final destination of the customer siding.</xs:documentation>
  </xs:annotation>
</xs:element>
```

element Address



type [FreeText](#)

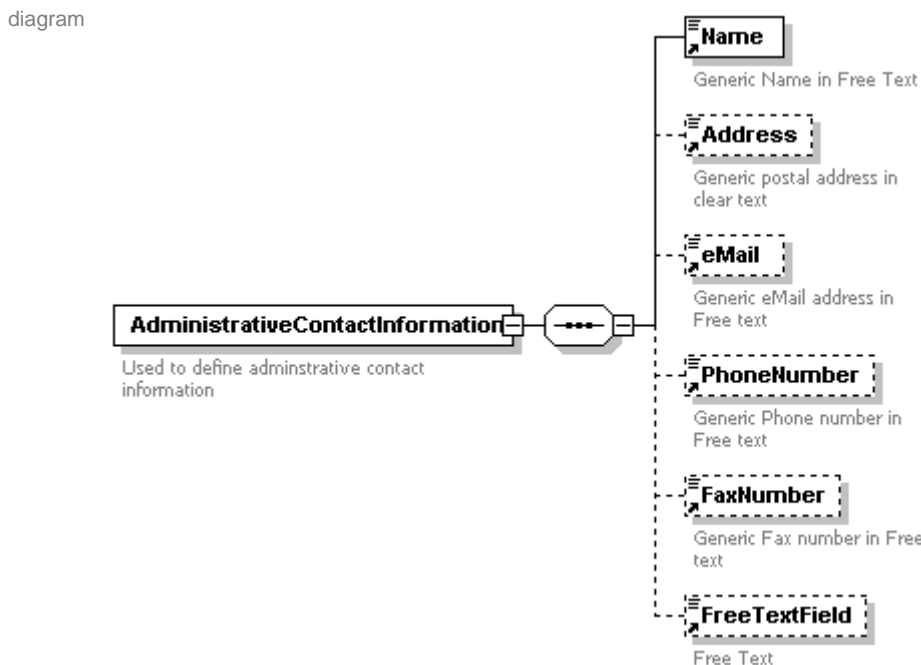
used by element [AdministrativeContactInformation](#)

facets length 255

annotation documentation Generic postal address in clear text

```
source <xs:element name="Address" type="FreeText">
  <xs:annotation>
    <xs:documentation>Generic postal address in clear text</xs:documentation>
  </xs:annotation>
</xs:element>
```

element AdministrativeContactInformation



children [Name](#) [Address](#) [eMail](#) [PhoneNumber](#) [FaxNumber](#) [FreeTextField](#)

used by elements [IRN](#) [ContactPoint](#) [IRN](#) [Dataset](#)

annotation documentation Used to define administrative contact information

```
source <xs:element name="AdministrativeContactInformation">
  <xs:annotation>
    <xs:documentation>Used to define administrative contact information</xs:documentation>
  </xs:annotation>
</xs:element>
```



```

</xs:annotation>
<xs:complexType>
  <xs:sequence>
    <xs:element ref="Name"/>
    <xs:element ref="Address" minOccurs="0"/>
    <xs:element ref="eMail" minOccurs="0"/>
    <xs:element ref="PhoneNumber" minOccurs="0"/>
    <xs:element ref="FaxNumber" minOccurs="0"/>
    <xs:element ref="FreeTextField" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
</xs:element>
    
```

element CountryCode

diagram



type [CountryIdent](#)

facets
 minLength 2
 maxLength 2

annotation documentation Identifies a County or State by code (ISO 3166-1)

```

source <xs:element name="CountryCode" type="CountryIdent">
  <xs:annotation>
    <xs:documentation>Identifies a County or State by code (ISO 3166-1)</xs:documentation>
  </xs:annotation>
</xs:element>
    
```

element CreateDateTime

diagram



type [DateTime](#)

used by element [IRN Event](#)

annotation documentation Date and Time of creation of data

```

source <xs:element name="CreateDateTime" type="DateTime">
  <xs:annotation>
    <xs:documentation>Date and Time of creation of data </xs:documentation>
  </xs:annotation>
</xs:element>
    
```

element DangerousGoodsIndicator

diagram



type [YesNoIndicator](#)

used by element [IRN Restriction](#)

attributes	Name	Type	Use	Default	Fixed	Annotation
	YesNo	IdentCode				



annotation documentation Indicates the presence of Dangerous Goods (Yes/No Indicator)

```
source <xs:element name="DangerousGoodsIndicator" type="YesNoIndicator">
  <xs:annotation>
    <xs:documentation>Indicates the presence of Dangerous Goods (Yes/No Indicator)</xs:documentation>
  </xs:annotation>
</xs:element>
```

element eMail



type [CommunicationRefID](#)

used by element [AdministrativeContactInformation](#)

facets length 70

annotation documentation Generic eMail address in Free text

```
source <xs:element name="eMail" type="CommunicationRefID">
  <xs:annotation>
    <xs:documentation>Generic eMail address in Free text</xs:documentation>
  </xs:annotation>
</xs:element>
```

element EndDateTime



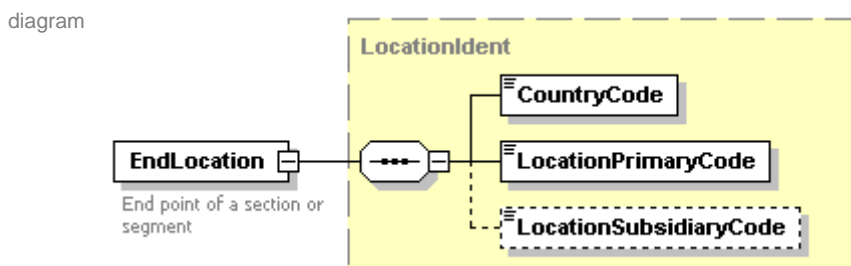
type [DateTime](#)

used by element [RequestedPeriod](#)

annotation documentation The end date/time in effect

```
source <xs:element name="EndDateTime" type="DateTime">
  <xs:annotation>
    <xs:documentation>The end date/time in effect</xs:documentation>
  </xs:annotation>
</xs:element>
```

element EndLocation



type [LocationIdent](#)

children [CountryCode](#) [LocationPrimaryCode](#) [LocationSubsidiaryCode](#)



used by element [LineSegment](#)
annotation documentation End point of a section or segment
source

```
<xs:element name="EndLocation" type="LocationIdent">  
<xs:annotation>  
  <xs:documentation>End point of a section or segment</xs:documentation>  
</xs:annotation>  
</xs:element>
```

element **EstimatedEndTime**



type [DateTime](#)
used by element [IRN_Event](#)
source

```
<xs:element name="EstimatedEndTime" type="DateTime"/>
```

element **FaxNumber**



type [CommunicationRefID](#)
used by element [AdministrativeContactInformation](#)
facets length 70
annotation documentation Generic Fax number in Free text
source

```
<xs:element name="FaxNumber" type="CommunicationRefID">  
<xs:annotation>  
  <xs:documentation>Generic Fax number in Free text</xs:documentation>  
</xs:annotation>  
</xs:element>
```

element **FreeTextField**



type [FreeText](#)
used by elements [AdministrativeContactInformation](#) [IRN_Restriction](#) [IRN_Restriction](#) [IRN_Restriction](#) [IRN_Restriction](#) [IRN_Restriction](#) [IRN_Restriction](#)
facets length 255
annotation documentation Free Text
source

```
<xs:element name="FreeTextField" type="FreeText">  
<xs:annotation>  
  <xs:documentation>Free Text</xs:documentation>  
</xs:annotation>  
</xs:element>
```



element ImpactedRU

diagram



type [CompanyCode](#)

used by element [IRN_Dataset](#)

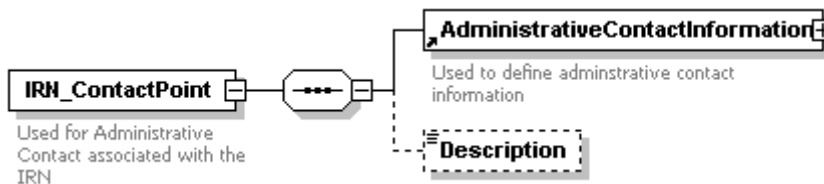
facets minInclusive 0001
 maxInclusive 9999

annotation documentation The RU impacted by a restriction

```
<xs:element name="ImpactedRU" type="CompanyCode">
  <xs:annotation>
    <xs:documentation>The RU impacted by a restriction</xs:documentation>
  </xs:annotation>
</xs:element>
```

element IRN_ContactPoint

diagram



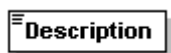
children [AdministrativeContactInformation](#) [Description](#)

annotation documentation Used for Administrative Contact associated with the IRN

```
<xs:element name="IRN_ContactPoint">
  <xs:annotation>
    <xs:documentation>Used for Administrative Contact associated with the IRN</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="AdministrativeContactInformation"/>
      <xs:element name="Description" type="FreeText" minOccurs="0"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

element IRN_ContactPoint/Description

diagram



type [FreeText](#)

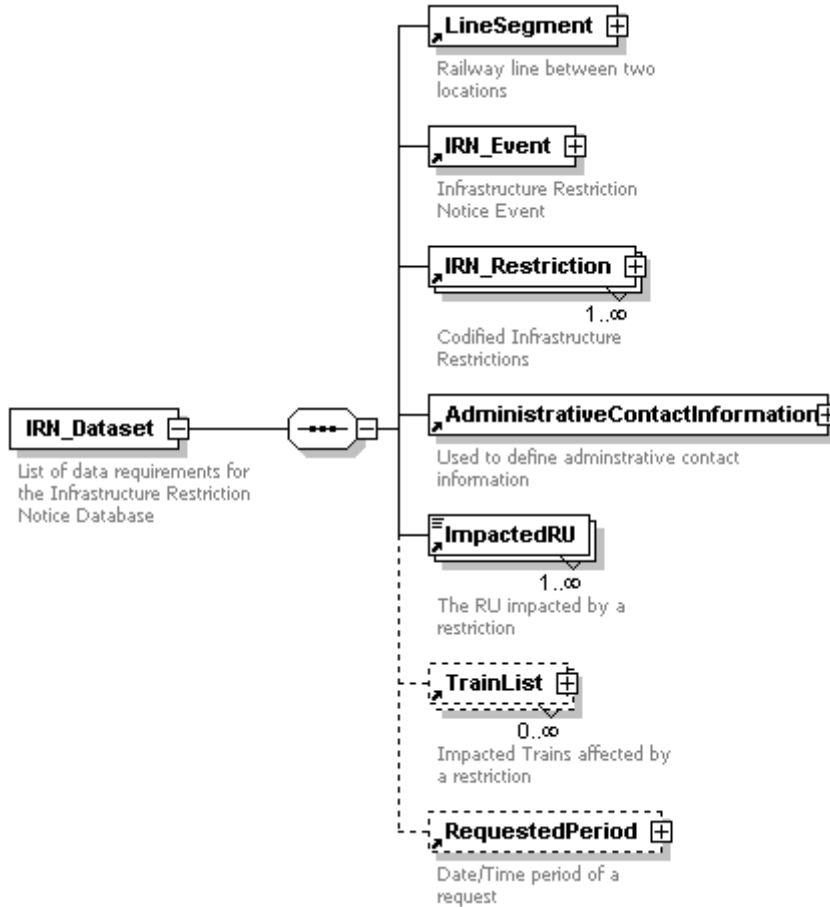
facets length 255

```
<xs:element name="Description" type="FreeText" minOccurs="0"/>
```



element **IRN_Dataset**

diagram



children [LineSegment](#) [IRN_Event](#) [IRN_Restriction](#) [AdministrativeContactInformation](#) [ImpactedRU](#) [TrainList](#) [RequestedPeriod](#)

annotation documentation List of data requirements for the Infrastructure Restriction Notice Database

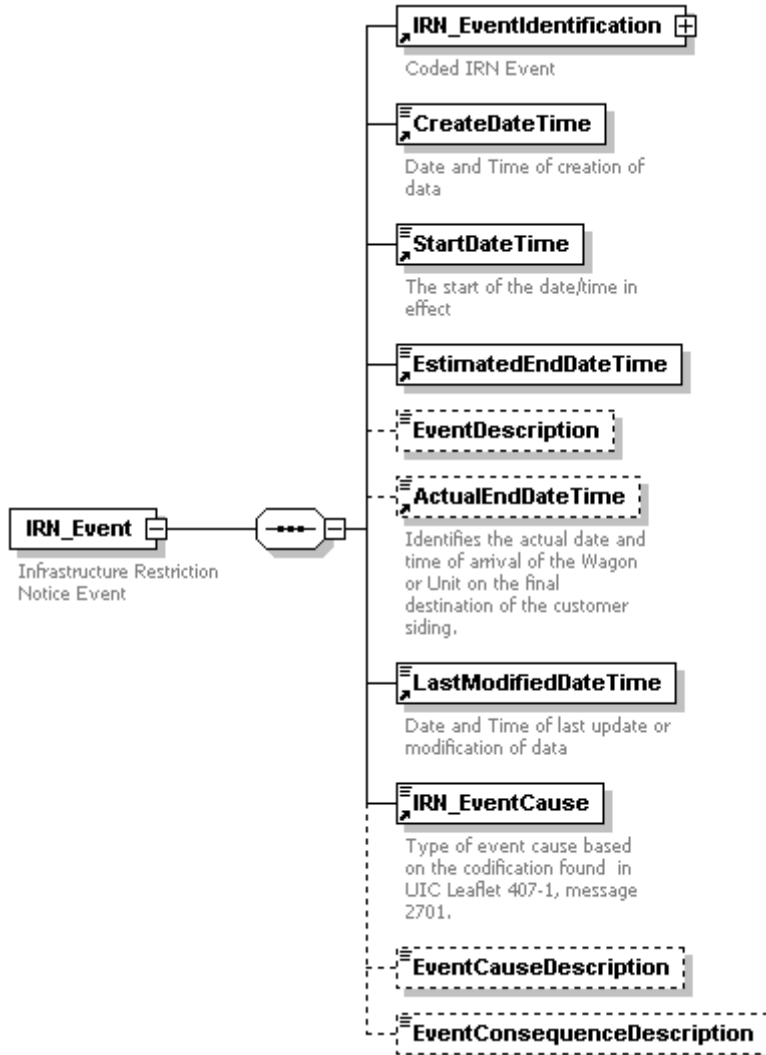
```

source <xs:element name="IRN_Dataset">
  <xs:annotation>
    <xs:documentation>List of data requirements for the Infrastructure Restriction Notice Database</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="LineSegment"/>
      <xs:element ref="IRN_Event"/>
      <xs:element ref="IRN_Restriction" maxOccurs="unbounded"/>
      <xs:element ref="AdministrativeContactInformation"/>
      <xs:element ref="ImpactedRU" maxOccurs="unbounded"/>
      <xs:element ref="TrainList" minOccurs="0" maxOccurs="unbounded"/>
      <xs:element ref="RequestedPeriod" minOccurs="0"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
    
```



element **IRN_Event**

diagram



children [IRN_EventIdentification](#) [CreateDateTime](#) [StartDateTime](#) [EstimatedEndDateTime](#) [EventDescription](#) [ActualEndDateTime](#) [LastModifiedDateTime](#) [IRN_EventCause](#) [EventCauseDescription](#) [EventConsequenceDescription](#)

used by element [IRN_Dataset](#)

annotation documentation Infrastructure Restriction Notice Event

```

source <xs:element name="IRN_Event">
  <xs:annotation>
    <xs:documentation>Infrastructure Restriction Notice Event </xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="IRN_EventIdentification"/>
      <xs:element ref="CreateDateTime"/>
      <xs:element ref="StartDateTime"/>
      <xs:element ref="EstimatedEndDateTime"/>
      <xs:element name="EventDescription" minOccurs="0">
        <xs:simpleType>
          <xs:restriction base="FreeText">
            <xs:length value="256"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
    
```



```
<xs:element ref="ActualEndTime" minOccurs="0"/>  
<xs:element ref="LastModifiedDateTime"/>  
<xs:element ref="IRN_EventCause"/>  
<xs:element name="EventCauseDescription" type="FreeText" minOccurs="0"/>  
<xs:element name="EventConsequenceDescription" type="FreeText" minOccurs="0"/>  
</xs:sequence>  
</xs:complexType>  
</xs:element>
```

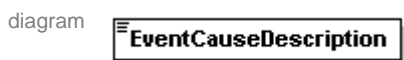
element IRN_Event/EventDescription



type restriction of [FreeText](#)
facets length 256
source

```
<xs:element name="EventDescription" minOccurs="0">  
<xs:simpleType>  
<xs:restriction base="FreeText">  
<xs:length value="256"/>  
</xs:restriction>  
</xs:simpleType>  
</xs:element>
```

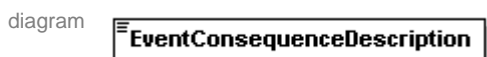
element IRN_Event/EventCauseDescription



type [FreeText](#)
facets length 255
source

```
<xs:element name="EventCauseDescription" type="FreeText" minOccurs="0"/>
```

element IRN_Event/EventConsequenceDescription



type [FreeText](#)
facets length 255
source

```
<xs:element name="EventConsequenceDescription" type="FreeText" minOccurs="0"/>
```

element IRN_EventCause



type restriction of [IdentCode](#)
used by element [IRN_Event](#)

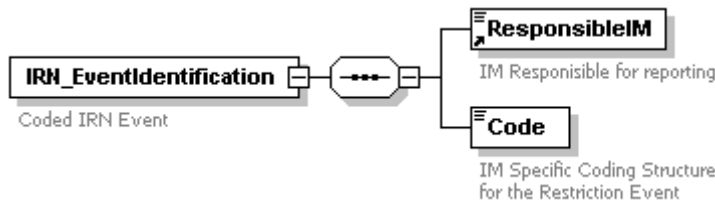


facets enumeration 01
 enumeration 02
 enumeration 03
 enumeration 04
 enumeration 05
 enumeration 07
 annotation documentation Type of event cause based on the codification found in UIC Leaflet 407-1, message 2701.

```
source <xs:element name="IRN_EventCause">
  <xs:annotation>
    <xs:documentation>Type of event cause based on the codification found in UIC Leaflet 407-1, message 2701.</xs:documentation>
  </xs:annotation>
  <xs:simpleType>
    <xs:restriction base="IdentCode">
      <xs:enumeration value="01"/>
      <xs:enumeration value="02"/>
      <xs:enumeration value="03"/>
      <xs:enumeration value="04"/>
      <xs:enumeration value="05"/>
      <xs:enumeration value="07"/>
    </xs:restriction>
  </xs:simpleType>
</xs:element>
```

element IRN_EventIdentification

diagram



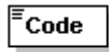
children [ResponsibleIM Code](#)
 used by element [IRN_Event](#)
 annotation documentation Coded IRN Event

```
source <xs:element name="IRN_EventIdentification">
  <xs:annotation>
    <xs:documentation>Coded IRN Event</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="ResponsibleIM"/>
      <xs:element name="Code">
        <xs:annotation>
          <xs:documentation>IM Specific Coding Structure for the Restriction Event</xs:documentation>
        </xs:annotation>
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:minLength value="1"/>
            <xs:maxLength value="15"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```



element **IRN_EventIdentification/Code**

diagram



IM Specific Coding Structure
for the Restriction Event

type restriction of **xs:string**

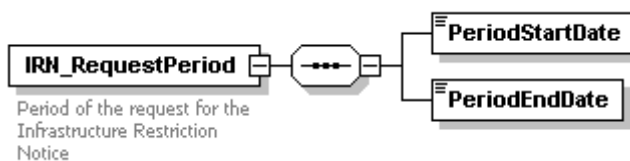
facets
minLength 1
maxLength 15

annotation documentation IM Specific Coding Structure for the Restriction Event

```
source <xs:element name="Code">
  <xs:annotation>
    <xs:documentation>IM Specific Coding Structure for the Restriction Event</xs:documentation>
  </xs:annotation>
  <xs:simpleType>
    <xs:restriction base="xs:string">
      <xs:minLength value="1"/>
      <xs:maxLength value="15"/>
    </xs:restriction>
  </xs:simpleType>
</xs:element>
```

element **IRN_RequestPeriod**

diagram



Period of the request for the
Infrastructure Restriction
Notice

children [PeriodStartDate](#) [PeriodEndDate](#)

annotation documentation Period of the request for the Infrastructure Restriction Notice

```
source <xs:element name="IRN_RequestPeriod">
  <xs:annotation>
    <xs:documentation>Period of the request for the Infrastructure Restriction Notice</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:sequence>
      <xs:element name="PeriodStartDate" type="DateTime"/>
      <xs:element name="PeriodEndDate" type="DateTime"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

element **IRN_RequestPeriod/PeriodStartDate**

diagram



type [DateTime](#)

```
source <xs:element name="PeriodStartDate" type="DateTime"/>
```



element **IRN_RequestPeriod/PeriodEndDate**

diagram



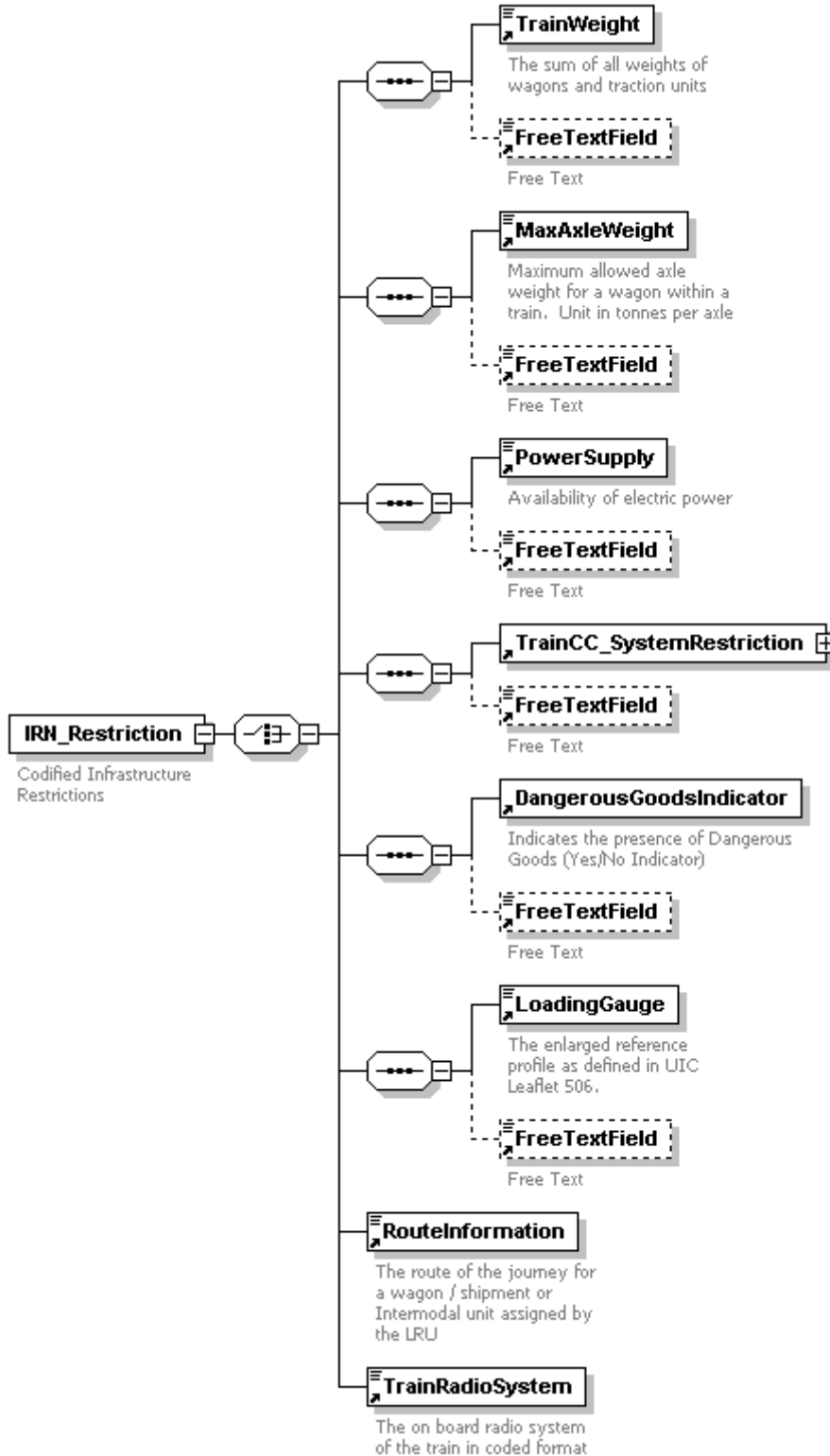
type [DateTime](#)

source `<xs:element name="PeriodEndDate" type="DateTime"/>`



element **IRN_Restriction**

diagram



children [TrainWeight](#) [FreeTextField](#) [MaxAxleWeight](#) [PowerSupply](#) [TrainCC_SystemRestriction](#) [DangerousGoodsIndicator](#) [LoadingGauge](#) [RouteInformation](#) [TrainRadioSystem](#)

used by element [IRN_Dataset](#)



annotation documentation Codified Infrastructure Restrictions

```
source <xs:element name="IRN_Restriction">
  <xs:annotation>
    <xs:documentation>Codified Infrastructure Restrictions</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:choice>
      <xs:sequence>
        <xs:element ref="TrainWeight"/>
        <xs:element ref="FreeTextField" minOccurs="0"/>
      </xs:sequence>
      <xs:sequence>
        <xs:element ref="MaxAxleWeight"/>
        <xs:element ref="FreeTextField" minOccurs="0"/>
      </xs:sequence>
      <xs:sequence>
        <xs:element ref="PowerSupply"/>
        <xs:element ref="FreeTextField" minOccurs="0"/>
      </xs:sequence>
      <xs:sequence>
        <xs:element ref="TrainCC_SystemRestriction"/>
        <xs:element ref="FreeTextField" minOccurs="0"/>
      </xs:sequence>
      <xs:sequence>
        <xs:element ref="DangerousGoodsIndicator"/>
        <xs:element ref="FreeTextField" minOccurs="0"/>
      </xs:sequence>
      <xs:sequence>
        <xs:element ref="LoadingGauge"/>
        <xs:element ref="FreeTextField" minOccurs="0"/>
      </xs:sequence>
      <xs:element ref="RouteInformation"/>
      <xs:element ref="TrainRadioSystem"/>
    </xs:choice>
  </xs:complexType>
</xs:element>
```

element LastModifiedDateTime

diagram



Date and Time of last update or modification of data

type [DateTime](#)

used by element [IRN_Event](#)

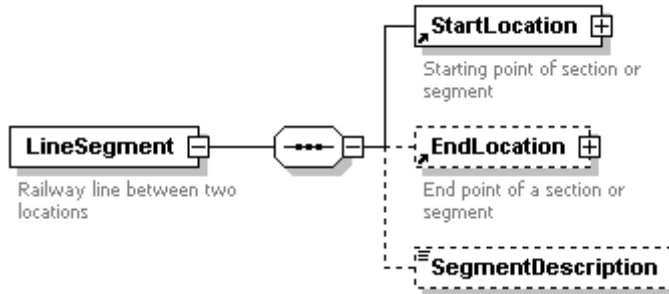
annotation documentation Date and Time of last update or modification of data

```
source <xs:element name="LastModifiedDateTime" type="DateTime">
  <xs:annotation>
    <xs:documentation>Date and Time of last update or modification of data</xs:documentation>
  </xs:annotation>
</xs:element>
```



element **LineSegment**

diagram



children [StartLocation](#) [EndLocation](#) [SegmentDescription](#)

used by element [IRN Dataset](#)

annotation documentation Railway line between two locations

```
source <xs:element name="LineSegment">
  <xs:annotation>
    <xs:documentation>Railway line between two locations</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="StartLocation"/>
      <xs:element ref="EndLocation" minOccurs="0"/>
      <xs:element name="SegmentDescription" minOccurs="0">
        <xs:simpleType>
          <xs:restriction base="FreeText">
            <xs:length value="255"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

element **LineSegment/SegmentDescription**

diagram



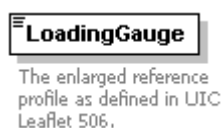
type restriction of [FreeText](#)

facets length 255

```
source <xs:element name="SegmentDescription" minOccurs="0">
  <xs:simpleType>
    <xs:restriction base="FreeText">
      <xs:length value="255"/>
    </xs:restriction>
  </xs:simpleType>
</xs:element>
```

element **LoadingGauge**

diagram





type restriction of [IdentCode](#)

used by element [IRN Restriction](#)

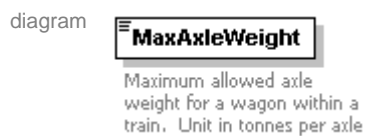
facets enumeration GA
 enumeration GB
 enumeration GB1
 enumeration GC
 enumeration G

annotation documentation The enlarged reference profile as defined in UIC Leaflet 506.

source

```
<xs:element name="LoadingGauge">
  <xs:annotation>
    <xs:documentation>The enlarged reference profile as defined in UIC Leaflet 506.</xs:documentation>
  </xs:annotation>
  <xs:simpleType>
    <xs:restriction base="IdentCode">
      <xs:enumeration value="GA"/>
      <xs:enumeration value="GB"/>
      <xs:enumeration value="GB1"/>
      <xs:enumeration value="GC"/>
      <xs:enumeration value="G"/>
    </xs:restriction>
  </xs:simpleType>
</xs:element>
```

element MaxAxleWeight



type restriction of [xs:int](#)

used by element [IRN Restriction](#)

facets minInclusive 01
 maxInclusive 99

annotation documentation Maximum allowed axle weight for a wagon within a train. Unit in tonnes per axle

source

```
<xs:element name="MaxAxleWeight">
  <xs:annotation>
    <xs:documentation>Maximum allowed axle weight for a wagon within a train. Unit in tonnes per axle</xs:documentation>
  </xs:annotation>
  <xs:simpleType>
    <xs:restriction base="xs:int">
      <xs:minInclusive value="01"/>
      <xs:maxInclusive value="99"/>
    </xs:restriction>
  </xs:simpleType>
</xs:element>
```

element Name



type [FreeText](#)

used by element [AdministrativeContactInformation](#)

facets length 255

annotation documentation Generic Name in Free Text



```
source <xs:element name="Name" type="FreeText">
  <xs:annotation>
    <xs:documentation>Generic Name in Free Text</xs:documentation>
  </xs:annotation>
</xs:element>
```

element **PhoneNumber**

diagram 

type [CommunicationRefID](#)

used by element [AdministrativeContactInformation](#)

facets length 70

annotation documentation Generic Phone number in Free text

```
source <xs:element name="PhoneNumber" type="CommunicationRefID">
  <xs:annotation>
    <xs:documentation>Generic Phone number in Free text</xs:documentation>
  </xs:annotation>
</xs:element>
```

element **PostalCode**

diagram 

type restriction of **xs:string**

facets minLength 1
maxLength 10

annotation documentation The postal code for the postal address

```
source <xs:element name="PostalCode">
  <xs:annotation>
    <xs:documentation>The postal code for the postal address</xs:documentation>
  </xs:annotation>
  <xs:simpleType>
    <xs:restriction base="xs:string">
      <xs:minLength value="1"/>
      <xs:maxLength value="10"/>
    </xs:restriction>
  </xs:simpleType>
</xs:element>
```

element **PowerSupply**

diagram 

type **xs:boolean**

used by element [IRN Restriction](#)

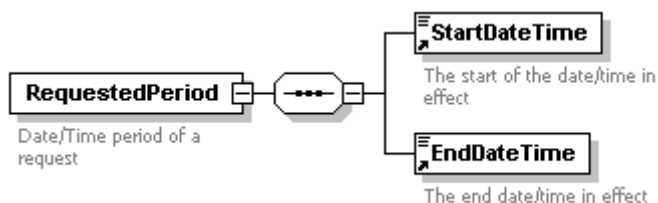
annotation documentation Availability of electric power



```
source <xs:element name="PowerSupply" type="xs:boolean">
  <xs:annotation>
    <xs:documentation>Availability of electric power</xs:documentation>
  </xs:annotation>
</xs:element>
```

element RequestedPeriod

diagram



children [StartDateTime](#) [EndDateTime](#)

used by element [IRN_Dataset](#)

annotation documentation Date/Time period of a request

```
source <xs:element name="RequestedPeriod">
  <xs:annotation>
    <xs:documentation>Date/Time period of a request</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="StartDateTime"/>
      <xs:element ref="EndDateTime"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

element ResponsibleIM

diagram



type [CompanyCode](#)

used by element [IRN_EventIdentification](#)

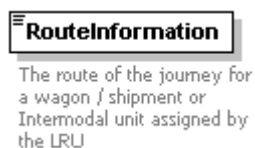
facets minInclusive 0001
 maxInclusive 9999

annotation documentation IM Responsible for reporting

```
source <xs:element name="ResponsibleIM" type="CompanyCode">
  <xs:annotation>
    <xs:documentation>IM Responsible for reporting</xs:documentation>
  </xs:annotation>
</xs:element>
```

element RouteInformation

diagram





type [FreeText](#)
 used by element [IRN Restriction](#)
 facets length 255
 annotation documentation The route of the journey for a wagon / shipment or Intermodal unit assigned by the LRU
 source

```
<xs:element name="RouteInformation" type="FreeText">
  <xs:annotation>
    <xs:documentation>The route of the journey for a wagon / shipment or Intermodal unit assigned by the LRU</xs:documentation>
  </xs:annotation>
</xs:element>
```

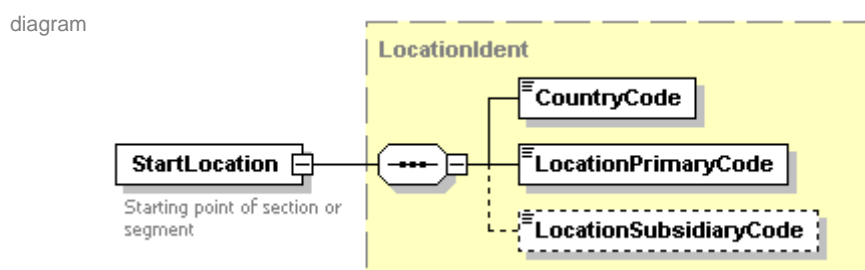
element **StartDateTime**



type [DateTime](#)
 used by elements [IRN Event RequestedPeriod](#)
 annotation documentation The start of the date/time in effect
 source

```
<xs:element name="StartDateTime" type="DateTime">
  <xs:annotation>
    <xs:documentation>The start of the date/time in effect</xs:documentation>
  </xs:annotation>
</xs:element>
```

element **StartLocation**



type [LocationIdent](#)
 children [CountryCode](#) [LocationPrimaryCode](#) [LocationSubsidiaryCode](#)
 used by element [LineSegment](#)
 annotation documentation Starting point of section or segment
 source

```
<xs:element name="StartLocation" type="LocationIdent">
  <xs:annotation>
    <xs:documentation>Starting point of section or segment</xs:documentation>
  </xs:annotation>
</xs:element>
```

element **TrainCC_SystemCode**





type restriction of [IdentCode](#)

used by element [TrainCC_SystemRestriction](#)

facets

- enumeration 01
- enumeration 02
- enumeration 03
- enumeration 04
- enumeration 05
- enumeration 06
- enumeration 11
- enumeration 12
- enumeration 21
- enumeration 22
- enumeration 31
- enumeration 32
- enumeration 91
- enumeration

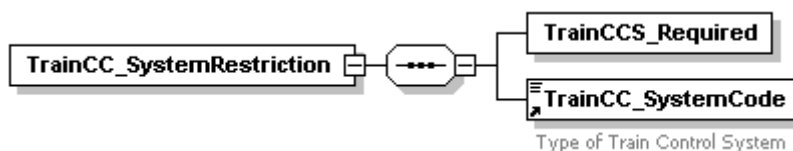
annotation documentation Type of Train Control System

source

```
<xs:element name="TrainCC_SystemCode">
  <xs:annotation>
    <xs:documentation>Type of Train Control System</xs:documentation>
  </xs:annotation>
  <xs:simpleType>
    <xs:restriction base="IdentCode">
      <xs:enumeration value="01"/>
      <xs:enumeration value="02"/>
      <xs:enumeration value="03"/>
      <xs:enumeration value="04"/>
      <xs:enumeration value="05"/>
      <xs:enumeration value="06"/>
      <xs:enumeration value="11"/>
      <xs:enumeration value="12"/>
      <xs:enumeration value="21"/>
      <xs:enumeration value="22"/>
      <xs:enumeration value="31"/>
      <xs:enumeration value="32"/>
      <xs:enumeration value="91"/>
      <xs:enumeration value=""/>
    </xs:restriction>
  </xs:simpleType>
</xs:element>
```

element [TrainCC_SystemRestriction](#)

diagram



children [TrainCCS_Required](#) [TrainCC_SystemCode](#)

used by element [IRN_Restriction](#)

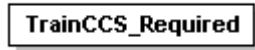
source

```
<xs:element name="TrainCC_SystemRestriction">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="TrainCCS_Required" type="YesNoIndicator"/>
      <xs:element ref="TrainCC_SystemCode"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```




element **TrainCC_SystemRestriction/TrainCCS_Required**

diagram



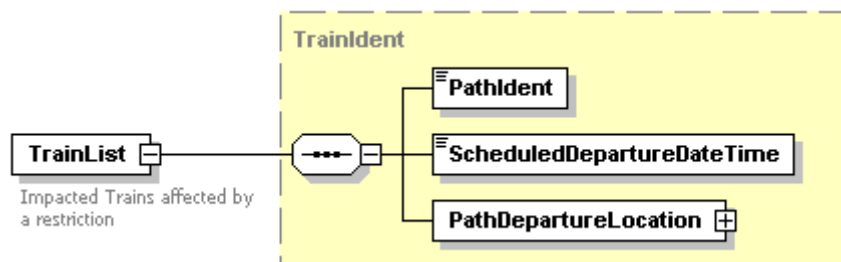
type [YesNoIndicator](#)

attributes	Name	Type	Use	Default	Fixed	Annotation
	YesNo	IdentCode				

source `<xs:element name="TrainCCS_Required" type="YesNoIndicator"/>`

element **TrainList**

diagram



type [TrainIdent](#)

children [PathIdent](#) [ScheduledDepartureDateTime](#) [PathDepartureLocation](#)

used by element [IRN_Dataset](#)

annotation documentation Impacted Trains affected by a restriction

source `<xs:element name="TrainList" type="TrainIdent">
 <xs:annotation>
 <xs:documentation>Impacted Trains affected by a restriction</xs:documentation>
 </xs:annotation>
 </xs:element>`

element **TrainRadioSystem**

diagram



type restriction of [IdentCode](#)

used by element [IRN_Restriction](#)

facets enumeration 1
 enumeration 2
 annotation documentation The on board radio system of the train in coded format

source `<xs:element name="TrainRadioSystem">
 <xs:annotation>
 <xs:documentation>The on board radio system of the train in coded format</xs:documentation>
 </xs:annotation>
 <xs:simpleType>
 <xs:restriction base="IdentCode">
 <xs:enumeration value="1"/>
 <xs:enumeration value="2"/>
 </xs:restriction>
 </xs:simpleType>
 </xs:element>`



element TrainWeight

diagram



type [WeightValueTonne](#)

used by element [IRN Restriction](#)

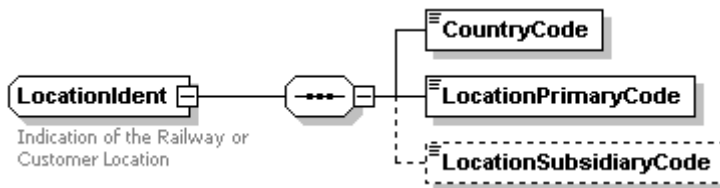
facets minInclusive 1
 maxInclusive 9999

annotation documentation The sum of all weights of wagons and traction units

```
<xs:element name="TrainWeight" type="WeightValueTonne">
  <xs:annotation>
    <xs:documentation>The sum of all weights of wagons and traction units</xs:documentation>
  </xs:annotation>
</xs:element>
```

complexType LocationIdent

diagram



children [CountryCode](#) [LocationPrimaryCode](#) [LocationSubsidiaryCode](#)

used by elements [EndLocation](#) [TrainIdent/PathDepartureLocation](#) [StartLocation](#)

annotation documentation Indication of the Railway or Customer Location

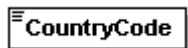
```
<xs:complexType name="LocationIdent">
  <xs:annotation>
    <xs:documentation>Indication of the Railway or Customer Location</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="CountryCode" type="CountryIdent"/>
    <xs:element name="LocationPrimaryCode" type="Numeric1-5"/>
    <xs:element name="LocationSubsidiaryCode" minOccurs="0">
      <xs:complexType>
        <xs:simpleContent>
          <xs:extension base="String1-7">
            <xs:attribute name="LocationSubsidiaryTypeCode" use="required">
              <xs:simpleType>
                <xs:restriction base="IdentCode">
                  <xs:enumeration value="00"/>
                  <xs:enumeration value="01"/>
                  <xs:enumeration value="02"/>
                  <xs:enumeration value="03"/>
                  <xs:enumeration value="04"/>
                  <xs:enumeration value="05"/>
                  <xs:enumeration value="06"/>
                  <xs:enumeration value="07"/>
                  <xs:enumeration value="08"/>
                  <xs:enumeration value="09"/>
                  <xs:enumeration value=""/>
                </xs:restriction>
              </xs:simpleType>
            </xs:attribute>
          </xs:extension>
        </xs:simpleContent>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
```



```
</xs:element>
</xs:sequence>
</xs:complexType>
```

element LocationIdent/CountryCode

diagram



type [CountryIdent](#)
 facets minLength 2
 maxLength 2
 source `<xs:element name="CountryCode" type="CountryIdent"/>`

element LocationIdent/LocationPrimaryCode

diagram



type [Numeric1-5](#)
 facets minInclusive 1
 maxInclusive 99999
 source `<xs:element name="LocationPrimaryCode" type="Numeric1-5"/>`

element LocationIdent/LocationSubsidiaryCode

diagram



type extension of [String1-7](#)
 facets minLength 1
 maxLength 7
 attributes

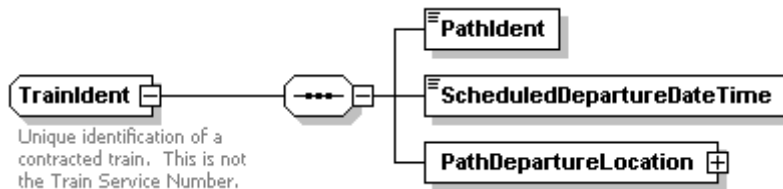
Name	Type	Use	Default	Fixed	Annotation
LocationSubsidiaryTypeCode	IdentCode	required			

source `<xs:element name="LocationSubsidiaryCode" minOccurs="0">
 <xs:complexType>
 <xs:simpleContent>
 <xs:extension base="String1-7">
 <xs:attribute name="LocationSubsidiaryTypeCode" use="required">
 <xs:simpleType>
 <xs:restriction base="IdentCode">
 <xs:enumeration value="00"/>
 <xs:enumeration value="01"/>
 <xs:enumeration value="02"/>
 <xs:enumeration value="03"/>
 <xs:enumeration value="04"/>
 <xs:enumeration value="05"/>
 <xs:enumeration value="06"/>
 <xs:enumeration value="07"/>
 <xs:enumeration value="08"/>
 <xs:enumeration value="09"/>
 <xs:enumeration value=""/>
 </xs:restriction>
 </xs:simpleType>
 </xs:attribute>
 </xs:extension>
 </xs:simpleContent>
 </xs:complexType>
 </xs:element>`



complexType TrainIdent

diagram



children [PathIdent](#) [ScheduledDepartureDateTime](#) [PathDepartureLocation](#)

used by element [TrainList](#)

annotation documentation Unique identification of a contracted train. This is not the Train Service Number.

source

```
<xs:complexType name="TrainIdent">
  <xs:annotation>
    <xs:documentation>Unique identification of a contracted train. This is not the Train Service Num-
  ber.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="PathIdent">
      <xs:simpleType>
        <xs:restriction base="PathIdent"/>
      </xs:simpleType>
    </xs:element>
    <xs:element name="ScheduledDepartureDateTime" type="DateTime"/>
    <xs:element name="PathDepartureLocation" type="LocationIdent"/>
  </xs:sequence>
</xs:complexType>
```

element TrainIdent/PathIdent

diagram



type restriction of [PathIdent](#)

facets minLength 5
maxLength 6

source

```
<xs:element name="PathIdent">
  <xs:simpleType>
    <xs:restriction base="PathIdent"/>
  </xs:simpleType>
</xs:element>
```

element TrainIdent/ScheduledDepartureDateTime

diagram



type [DateTime](#)

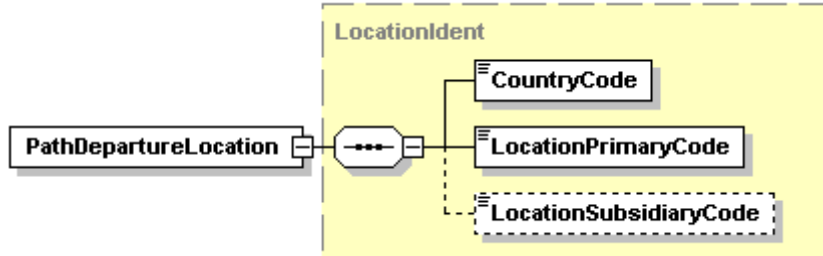
source

```
<xs:element name="ScheduledDepartureDateTime" type="DateTime"/>
```



element **TrainIdent/PathDepartureLocation**

diagram



type [LocationIdent](#)

children [CountryCode](#) [LocationPrimaryCode](#) [LocationSubsidiaryCode](#)

source `<xs:element name="PathDepartureLocation" type="LocationIdent"/>`

complexType **YesNoIndicator**

diagram



used by elements [DangerousGoodsIndicator](#) [TrainCC](#) [SystemRestriction/TrainCCS](#) [Required](#)

attributes	Name	Type	Use	Default	Fixed	Annotation
	YesNo	IdentCode				
annotation	documentation	Yes or No				

source `<xs:complexType name="YesNoIndicator">
 <xs:annotation>
 <xs:documentation>Yes or No</xs:documentation>
 </xs:annotation>
 <xs:attribute name="YesNo">
 <xs:simpleType>
 <xs:restriction base="IdentCode">
 <xs:enumeration value="Yes"/>
 <xs:enumeration value="No"/>
 <xs:enumeration value="Unknown"/>
 </xs:restriction>
 </xs:simpleType>
 </xs:attribute>
 </xs:complexType>`

simpleType **CommunicationRefID**

type restriction of **xs:string**

used by elements [eMail](#) [FaxNumber](#) [PhoneNumber](#)

facets length 70

annotation documentation Identifier for communications contact reference (i.e. fax number, phone number, e-mail, URL)

source `<xs:simpleType name="CommunicationRefID">
 <xs:annotation>
 <xs:documentation>Identifier for communications contact reference (i.e. fax number, phone number, e-mail, URL)</xs:documentation>
 </xs:annotation>
 <xs:restriction base="xs:string">
 <xs:length value="70"/>
 </xs:restriction>
 </xs:simpleType>`



simpleType **CompanyCode**

type restriction of [Numeric4-4](#)

used by elements [ImpactedRU](#) [ResponsibleIM](#)

facets minInclusive 0001
maxInclusive 9999

annotation documentation Identifies the RU, IM or other company involved in the Rail Transport Chain

source

```
<xs:simpleType name="CompanyCode">
  <xs:annotation>
    <xs:documentation>Identifies the RU, IM or other company involved in the Rail Transport Chain</xs:documentation>
  </xs:annotation>
  <xs:restriction base="Numeric4-4">
    <xs:minInclusive value="0001"/>
    <xs:maxInclusive value="9999"/>
  </xs:restriction>
</xs:simpleType>
```

simpleType **CountryIdent**

type restriction of **xs:string**

used by elements [CountryCode](#) [LocationIdent/CountryCode](#)

facets minLength 2
maxLength 2

annotation documentation ISO 3166-1 alpha code (2 positions)

source

```
<xs:simpleType name="CountryIdent">
  <xs:annotation>
    <xs:documentation>ISO 3166-1 alpha code (2 positions)</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:string">
    <xs:minLength value="2"/>
    <xs:maxLength value="2"/>
  </xs:restriction>
</xs:simpleType>
```

simpleType **DateTime**

type **xs:dateTime**

used by elements [ActualEndDateTime](#) [CreateDateTime](#) [EndDateTime](#) [EstimatedEndDateTime](#) [LastModifiedDateTime](#) [IRN_RequestPeriod/PeriodEndDate](#) [IRN_RequestPeriod/PeriodStartDate](#) [TrainIdent/ScheduledDepartureDateTime](#) [StartDateTime](#)

annotation documentation All dates/times are in UTC, time differences according to the time zones must be handled in the individual systems

source

```
<xs:simpleType name="DateTime">
  <xs:annotation>
    <xs:documentation>All dates/times are in UTC, time differences according to the time zones must be handled in the individual systems</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:dateTime"/>
</xs:simpleType>
```

simpleType **FreeText**

type restriction of **xs:string**

used by elements [Address IRN](#) [ContactPoint/Description IRN](#) [Event/EventCauseDescription IRN](#) [Event/EventConsequenceDescription IRN](#) [Event/EventDescription IRN](#) [FreeTextField Name](#) [RouteInformation](#) [LineSegment/SegmentDescription](#)

facets length 255

annotation documentation Clear Text in ISO Unicode character set



```

source <xs:simpleType name="FreeText">
  <xs:annotation>
    <xs:documentation>Clear Text in ISO Unicode character set</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:string">
    <xs:length value="255"/>
  </xs:restriction>
</xs:simpleType>
    
```

simpleType IdentCode

```

type xs:string
used by elements IRN\_EventCause LoadingGauge LocationIdent/LocationSubsidiaryCode TrainCC\_SystemCode
              TrainRadioSystem
              complexType YesNoIndicator
              simpleType TrainCC\_Syst
annotation documentation Enumerated value

source <xs:simpleType name="IdentCode">
  <xs:annotation>
    <xs:documentation>Enumerated value</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:string"/>
</xs:simpleType>
    
```

simpleType Numeric1-5

```

type restriction of xs:positiveInteger
used by element LocationIdent/LocationPrimaryCode

facets minInclusive 1
       maxInclusive 99999

source <xs:simpleType name="Numeric1-5">
  <xs:restriction base="xs:positiveInteger">
    <xs:minInclusive value="1"/>
    <xs:maxInclusive value="99999"/>
  </xs:restriction>
</xs:simpleType>
    
```

simpleType Numeric4-4

```

type restriction of xs:integer
used by simpleType CompanyCode

facets minInclusive 0001
       maxInclusive 9999

source <xs:simpleType name="Numeric4-4">
  <xs:restriction base="xs:integer">
    <xs:minInclusive value="0001"/>
    <xs:maxInclusive value="9999"/>
  </xs:restriction>
</xs:simpleType>
    
```

simpleType PathIdent

```

type restriction of String5-6
used by element TrainIdent/PathIdent

facets minLength 5
       maxLength 6
annotation documentation For interoperable trains, this is the five character Train Number as defined in UIC Leaflet 419-2

source <xs:simpleType name="PathIdent">
  <xs:annotation>
    <xs:documentation>For interoperable trains, this is the five character Train Number as defined in UIC Leaflet 419-2
    </xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:string">
    <xs:minLength value="5"/>
    <xs:maxLength value="6"/>
  </xs:restriction>
</xs:simpleType>
    
```



```

        <xs:documentation>For interoperable trains, this is the five character Train Number as defined in UIC Leaflet 419-
    2</xs:documentation>
    </xs:annotation>
    <xs:restriction base="String5-6">
        <xs:maxLength value="6"/>
    </xs:restriction>
</xs:simpleType>
    
```

simpleType **String1-7**

```

    type restriction of xs:string
    used by element LocationIdent/LocationSubsidiaryCode
    facets
        minLength 1
        maxLength 7
    source <xs:simpleType name="String1-7">
        <xs:restriction base="xs:string">
            <xs:minLength value="1"/>
            <xs:maxLength value="7"/>
        </xs:restriction>
    </xs:simpleType>
    
```

simpleType **String5-6**

```

    type restriction of xs:string
    used by simpleType PathIdent
    facets
        minLength 5
        maxLength 6
    source <xs:simpleType name="String5-6">
        <xs:restriction base="xs:string">
            <xs:minLength value="5"/>
            <xs:maxLength value="6"/>
        </xs:restriction>
    </xs:simpleType>
    
```

simpleType **TrainCC_Syst**

```

    type restriction of IdentCode
    facets
        enumeration 01
        enumeration 02
        enumeration 03
        enumeration 04
        enumeration 05
        enumeration 06
        enumeration 11
        enumeration 12
        enumeration 21
        enumeration 22
        enumeration 23
        enumeration 31
    annotation
        documentation Identifies the command control system of the train in coded values
    source <xs:simpleType name="TrainCC_Syst">
        <xs:annotation>
            <xs:documentation>Identifies the command control system of the train in coded values</xs:documentation>
        </xs:annotation>
        <xs:restriction base="IdentCode">
            <xs:enumeration value="01"/>
            <xs:enumeration value="02"/>
            <xs:enumeration value="03"/>
            <xs:enumeration value="04"/>
            <xs:enumeration value="05"/>
            <xs:enumeration value="06"/>
            <xs:enumeration value="11"/>
            <xs:enumeration value="12"/>
            <xs:enumeration value="21"/>
        </xs:restriction>
    </xs:simpleType>
    
```




```
<xs:enumeration value="22"/>  
<xs:enumeration value="23"/>  
<xs:enumeration value="31"/>  
</xs:restriction>  
</xs:simpleType>
```

simpleType **WeightValueTonne**

type	restriction of xs:int
used by	element TrainWeight
facets	minInclusive 1 maxInclusive 9999
annotation	documentation In Tonnes 4
source	<pre><xs:simpleType name="WeightValueTonne"> <xs:annotation> <xs:documentation>In Tonnes 4</xs:documentation> </xs:annotation> <xs:restriction base="xs:int"> <xs:minInclusive value="1"/> <xs:maxInclusive value="9999"/> </xs:restriction> </xs:simpleType></pre>