EDIGES

Electronic Data Interchange (for) Intermodal Global European Standard

Functional handbook

VERSION 4.1

Table of Contents

1 Objectives of EDIGES system

The target of EDIGES is to design a standard system for data exchange integrating actors in the intermodal logistic chain and information related to every single process.

EDIGES is managed and developed by a the EDIGES Consortium (info@ediges.org[1]) whose members are represented by intermodal operators Kombiverkehr, Hupac, Mercitalia Intermodal.

The fundamental importance of EDIGES is to guarantee standardized and verified information in real time for Tracking and Tracing for Logistics Service Providers and Terminal Operators of intermodal transports.

1.1 Functional handbook

This document regards every functional aspect of EDIGES.

It contains a list of all existing processes in intermodal transport sector and related EDIGES message representing processes in the specific business area

Three specific technical handbooks are available for the different relationships between the Intermodal Operator and the communications partner, documenting the relevant processes.

Technical Handbooks

Nr. 1) Logistic Service Provider (LSP) ↔ Intermodal Operator (IO)

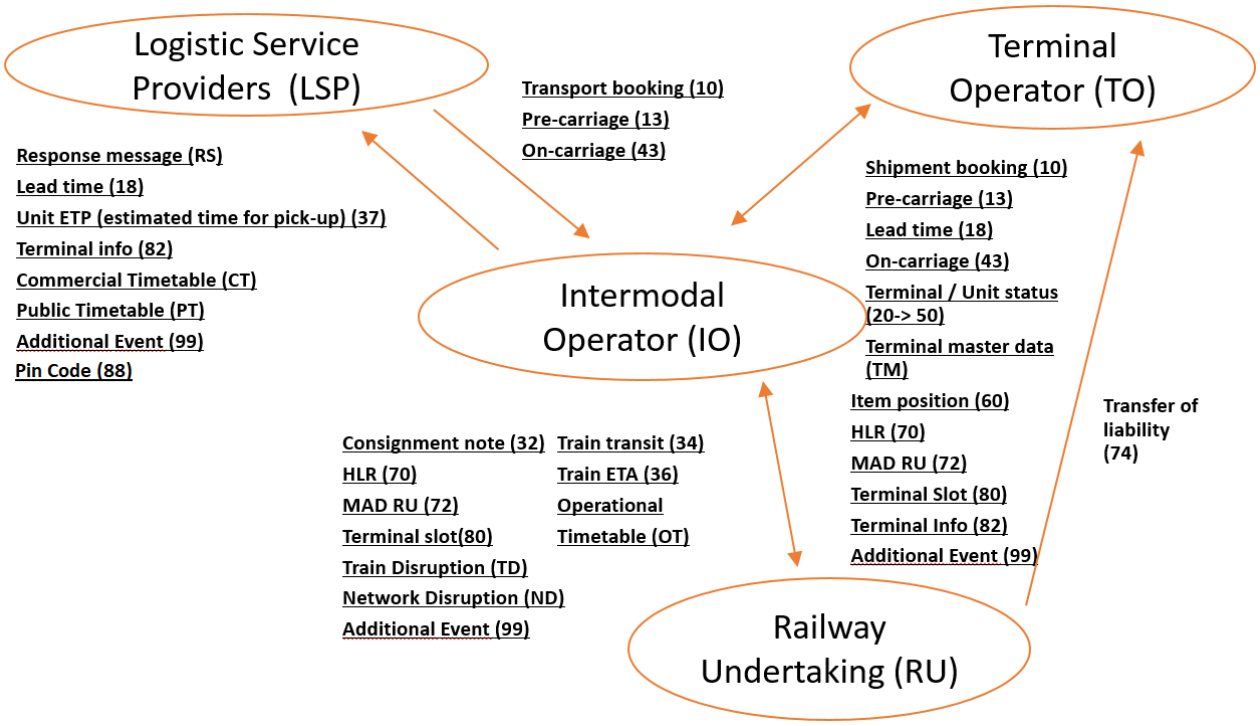
Nr. 2) Intermodal Operator (IO) ↔ Terminal Operator (TO)

Nr. 3) Intermodal Operator (IO) ↔ Railway Undertaking (RU)

In following pages a general overview of partners relationship is represented and for each one a list of supported EDI messages is represented

1 mailto:info@ediges.org

2 Interaction between actors and processes in intermodal transport and related messages



2.1 Logistic Service Provider (LSP) ↔ Intermodal Operator (IO)

2.1.1 Booking of the transport (Booking) (status 10/11)

These messages are used to transmit bookings (status 10) and cancellations (status 11) from Intermodal Operators (IO) to Terminal Operator (TO). The booking process and the related data depend from the Intermodal Operator (IO) and Terminal Operator (TO).

2.1.2 Response message (status RS)

Response message could be provided by EDI or by mail. The response message may contain process or technical information.

2.1.3 Pre-carriage (status 13)

Messages status 13 manage information about the arrival of the truck at departure terminal.

2.1.4 Lead time (status 18)

Messages status 18 manage information about (average) waiting time at the terminal.

2.1.5 On-carriage (status 43)

Messages status 43 manage information about the arrival of the truck at destination terminal.

2.1.6 Loading Unit ETP, Estimated Time of Pick-up at arrival terminal (status 37)

Message status 37 identifies a new Estimated Time of Pick-up of every unit at destination terminal. Update of loading unit ETP is based on update information of a train arrival (ETA).

2.1.7 Terminal info (status 82)

Messages status 82 manage information about the arrival of the truck at destination terminal.

2.1.8 Commercial timetable (status CT)

This message contains information related to commercial timetable sent to LSP from IO.

2.1.9 Additional event (status 99)

This message contains information related to additional event.

2.1.10 Pin code (status 88)

This message contains information related to unit pin code.

2.1.11 Disruption message (status DM)

This message is used to transmit information about irregularities (delays, interruptions) that have occurred during the intermodal transport. The status “DM” is sent in the event of an acute problem along the intermodal supply chain by one of the parties involved.

2.2 Terminal Operator (TO) ↔ Intermodal Operator (IO)

2.2.1 Transport (Booking) (status 10/11)

These messages are used to transmit bookings (status 10) and cancellations (status 11) from Intermodal Operators (IO) to Container Terminals (CT). The booking process and the related data depend from the Intermodal Operator (IO) and Terminal Operator (TO).

2.2.2 Pre-carriage (status 13)

Messages status 13 manage information about the arrival of the truck at departure terminal.

2.2.3 Lead time (status 18)

Messages status 18 manage information about (average) waiting time at the terminal.

2.2.4 Delivery of the loading unit at the departure terminal (Gate-in) (status 20/21)

At the entrance of the loading unit at the terminal, on the base of an existing booking, and eventually after the check-in of the loading unit, booking data were modified and completed with the effective data as results from the documents of the driver who consigns the loading unit at the terminal. The cancellation message of the delivery of the loading unit is indicated as status 21. The processing of status 20/21 messages depends on the Intermodal Operator (IO).
Nota bene: in case of exit of a unit after being entered in terminal, status 50 has to be used.

2.2.5 Wagon in train composition (status 23/24)

Status 23 indicates which wagon is part of the wagon composition. Status 24 indicates that one specific wagon is no longer part of the wagon composition.

2.2.6 Loading and Unloading of unit on wagon (status 25/26)

Status 25 messages indicate the loading of a loading unit on a wagon. Status 26 indicates the unloading of a loading unit from a wagon.

2.2.7 Consignment note generation (status 27)

Consignment note generation. There is no cancellation message: new consignment note will replace the last one.

2.2.8 Train closure at departure terminal (status 30/31)

At train departure from terminal, status 30 indicates train contents in terms of wagons, loading units, goods, other information and departure timing. The status 30 is valid either for train and for loading unit. The cancellation message of train/loading units departure is indicated as status 31.

2.2.9 Transport information update (status 35)

Status 35 is used in case of modification of transport information after train is departed from terminal.

2.2.10 Provision of the train at destination terminal (status 38/39)

Status 38 indicates that the train has arrived under crane, the documents have been handed over, the wagons and loading units have been compared and the train is therefore ready for unloading. Status 39 is used for the cancellation of a status 38 message.

2.2.11 Loading unit ready for pick-up by road or for re-expedition (status 40/41)

Status 40 indicates for each loading unit of the incoming train that the loading unit is ready for pick-up by road or ready for re-expedition with another mode of transport or ready to be loaded on the next train in the gateway-chain. Status 41 indicates the cancellation of a status 40 message.

2.2.12 On-carriage (status 43)

Messages status 43 manage information about the arrival of the truck at destination terminal.

2.2.13 Delivered at gateway (status 45)

Messages status 45 manage information about the delivery of the loading unit at gateway.

2.2.14 Pick-up of the Loading unit (status 50/51)

Status 50 indicates the pick-up of a loading unit by road or by another mode of transport at the destination terminal. It depends on the terminal's processes if status 50 can be sent at the production of the pick-up documents or at the exit from terminal (gate-out message). Status 51 indicates the cancellation of a status 50 message.

2.2.15 Item position (status 60)

Status 60 indicates the position of a wagon or loading unit inside the terminal (geo-coordinates).

2.2.16 HLR - (status 70/ 71)

Heure limite de remise. When the train at departure is handed over from the Terminal Operator to the RU. The cancellation message is indicated as status 71.

2.2.17 MAD RU - (status 72/73)

Heure de mise à disposition. When the train at arrival is handed over from the RU to the Terminal Operator. The cancellation message is indicated as status 72.

2.2.18 Terminal slot - (status 80)

Messages status 80 manage information about slot available for train arrival/departure.

2.2.19 Time info - (status 82)

Messages status 82 manage information about the terminal status and disruptions in the terminal.

2.2.20 Terminal master data - (status TM)

Messages status TM manage information about terminal master data.

2.2.21 Additional event (status 99)

This message contains information related to additional event.

2.2.22 Disruption message (status DM)

This message is used to transmit information about irregularities (delays, interruptions) that have occurred during the intermodal transport. The status “DM” is sent in the event of an acute problem along the intermodal supply chain by one of the parties involved.

2.3 Intermodal Operator (IO) ↔ Railway Undertaking (RU)

2.3.1 Consignment note status exchanged at train closure (status 32/33)

After train closure in departure terminal, status 32 reports consignment note information including the train list (related wagons and loading units). Cancellation message is indicated as status 33.

2.3.2 Train transit control - (status 34)

Messages status 34 manage information about transit control related to a train. It includes information about the transit of a train at a certain station / geo-referenced point. Transit time regards a whole train.

2.3.3 Train ETA (status 36)

Messages status 36 manage information about train ETA at final terminal. Generally is sent from RU to Intermodal Operator or directly to destination terminal when there is a train delay.

2.3.4 HLR - (status 70/71)

Heure limite de remise. When the train at departure is handed over from the Terminal Operator to the RU. Cancellation message is indicated as status 71.

2.3.5 MAD RU - (status 72/73)

Heure de mise à disposition. When the train at arrival is handed over from the RU to the Terminal Operator. Cancellation message is indicated as status 73.

2.3.6 Time slot - (status 80)

Messages status 80 manage information about slot available for train arrival/departure.

2.3.7 Train Disruption - (status TD)

The RU sends messages documenting train disruptions to the IO.

2.3.8 Operational timetable (status OT)

This message contains information related to operational timetable sent to IO from RU.

2.3.9 Network Disruption - (status ND)

The RU sends messages documenting network disruptions to the IO.

2.3.10 Additional event (status 99)

This message contains information related to additional event.

2.3.11 Disruption message (status DM)

This message is used to transmit information about irregularities (delays, interruptions) that have occurred during the intermodal transport. The status “DM” is sent in the event of an acute problem along the intermodal supply chain by one of the parties involved.

2.4 Railway Undertaking (RU) ↔ Terminal Operator (TO)

2.4.1 Transfer of liability (status 74/75)

The status 74 represents the transfer of liability from RU to TO. Cancellation message is indicated as status 75.

2.4.2 Additional event (status 99)

This message contains information related to additional event.

2.4.3 Disruption message (status DM)

This message is used to transmit information about irregularities (delays, interruptions) that have occurred during the intermodal transport. The status “DM” is sent in the event of an acute problem along the intermodal supply chain by one of the parties involved.

3 Message Format and Standard Codification

3.1 File encoding

Files are encoded in UTF-8.

3.2 Data types

EDIGES uses the base xml schema data types by default.

Type	Schema type	Example	Comment
boolean	xs:boolean[2]	`<element>true</element>`	
date	xs:date[3]	`<date>2019-01-05</date>`	
time	xs:time[4]	`<time>13:21:42.328+01:00</time>`	Timezone must be always defined
dateTime	xs:dateTime[5]	`<dateTime>2020-11-20T13:21:42.328+01:00</dateTime>`	Timezone must be always defined
string	xs:string[6]	`<text>This is a text</text>`	
integer	xs:integer[7]	`<number>123</number>`	

According to RFC 3339[8]. section 5.6. the returned dateTime element has to be `2020-11-20T13:21:42.328+01:00` (the minute and hour in the time-zone offset should be divided with a colon). It is mandatory to add the timezone to time elements for clarity.

Strings are restricted in length only when external guidelines or regulations define a maximum length of the given field. Examples are: Terminal UIRR code, ILU Code, UN-Number. In all other cases the field length is not restricted. Examples: driver name, terminal name, harbour name.

3.3 Unit Values

If the value of an element has an implied unit of measurement (kg, cm, °C), then the unit must be documented in the <xs:documentation> of the element. By default, the following units of measurement are used:

2 https://www.w3.org/TR/xmlschema/#boolean
3 https://www.w3.org/TR/xmlschema/#date
4 https://www.w3.org/TR/xmlschema/#time
5 https://www.w3.org/TR/xmlschema/#time
6 https://www.w3.org/TR/xmlschema/#string
7 https://www.w3.org/TR/xmlschema/#integer
8 https://tools.ietf.org/html/rfc3339#section-5.6

- Weight: kg
- Length: cm
- Temperature: °C

3.4 Codification

For the following elements standard codification is used:

- Country: ISO 3166[9] country codes. EDIGES uses 2 letter country codes
- Terminals: The UIRR table defines for each intermodal terminal in Europe an own numerical code of 3 digits.
- Sender/Receiver code: code UIRR (5 digits)
  The UIRR table defines for each client and company involved in the intermodal traffic in Europe an own numerical code of 5 digits. This is supplied by Hupac for the relevant UIRR codes.
- Damage Code: UIRR codes (2X3 digits)
  The codification refers to tables defined by the most part of the UIRR Companies.
  Damage codification is formed by 3 information (2 digits each):
  - What occurred (“What” code)
  - Where occurred (“Where” code)
  - How occurred (“How” code)
- Code Interunit: the Interunit codification is here used to define the type and length of the loading unit. The code is of 2 digits.

3.5 Naming standard

Elements and types are named according to the following rules:

- Elements and types start with in lower-case and continue in camel case. Examples are
  - `ituDetails`
  - `loadingWagonType`
- Simple and Complex types end with the suffix - `type` . Examples are
  - `shipmentGenericType`
  - `goodsInformationBaseType`
- If a Status-specific restriction or extension is required for a type, the base type ends with the suffix - `BaseType` and the Status-specific types end in - `[Status]` . Examples are
  - `positionItuCodeDetailsBaseType`
  - `positionItuCodeDetailsStatus32`

EDIGES incorporates elements and types from the TAF/TSI schema. To retain compatibility and naming style, the following rules apply for TAF/TSI elements and types:

- Types imported from TAF/TSI retain the original name and are prefixed with `TAFTSI` -. Examples are
  - `TAFTSICharacteristicDescriptionCode`
  - `TAFTSIFreeText`
- Elements within imported TAF/TSI types retain the original name.
- EDIGES elements which use TAF/TSI types are named according to TAF/TSI standard: first letter in upper-case, and continuing in camel-case. Examples are
  - `OperatorTrainID`
  - `RelatedPlannedTransportIdentifiers`

9 https://en.wikipedia.org/wiki/List_of_ISO_3166_country_codes

3.6 Inclusion of TAF/TSI

EDIGES includes types from the TAF/TSI schema. Please note that the schema itself is not included, but that the elements have been copied over into EDIGES. Please refer to http://taf-jsg.info/?page_id=172 for the original schema files and for further information.
Certain elements are not relevant to EDIGES processes, but had to be included to retain compatibility to TAF/TSI. Where applicable, it will be noted in the documentation which elements can be omitted or set to default values.
The version incorporated into EDIGES is 2.2.3.

3.7 File naming Schema

If EDIGES files are generated, the file names must adhere to the following format:

> *SEN.REC.DDDDDD.NNNNNN.APP*

Whereby

Field	Name	Example
SEN	Initials of the Sender	HUP
REC	Initials of the Receiver	KOM
DDDDDD	Current Date in Format YYMMDD	190413
NNNNNN	Incrementing number	000123
APP	The EDIGES Status, see Status definitions (see page 17)	S23

Example of file naming :

A booking message (status 10) sent by sender AAA to receiver BBB on 12th January 2019:
AAA.BBB.190112.123456.S10.xml

3.8 Namespace

The namespace for EDIGES documents is “ `http://ediges.net/ediges/{version}` “
With the current version 4.0, the root element `ediges` must be defined as

```
<e:ediges xmlns:e="http://ediges.net/ediges/4.0">
```

The namespace prefix in this example is `e` , but can be set to any prefix you choose. The inner elements do not need to have a namespace prefix.

```
<e:ediges xmlns:e="http://ediges.net/ediges/4.0">
  <header>
    <msgDate>2019-04-01</msgDate>
    <msgTime>09:09:09</msgTime>
...
```

4 EDI message flow exchanged between EDI partner and intermodal operator

Please contact every single operator for additional details and exchanging protocols supported.

Each XML EDI message can be exchanged by several methods:

1. by ftp/ftps/sftp: It's possible to send XML files to a specific directory of the Intermodal Operator system.
2. by https using REST service calls. Note that the specification of the REST APIs used in this case are out of scope.

Each XML EDI message sent to the Intermodal Operator system is analyzed in the following way:

- verification of the XML structure, compatibility with the structure defined among the partners and related XSD;
- verification of the data contained based on the EDIGES codification (UIRR codes, etc.);
- in case the points before have not given any error, the message is integrated into Intermodal Operator system;
- in case of errors in the first two points an e-mail, containing the significant data, is sent to the e-mail address indicated in the tag "replyRequest – rejected" and the message is not integrated into Intermodal Operator system. This is valid only for Booking message (status10).

5 Status definitions

In EDIGES, the status of the loading unit transitions through several statuses.

Status		Name	Top Element
10	Booking	Booking	booking
11		Booking Cancel	booking
20	Gate-In	Gate-In Loading unit	deliveryGateIn
21		Gate-In Loading unit Cancel	deliveryGateIn
23	Wagon composition	Wagon in train composition	trainLoading
24		Wagon out	trainLoading
25	Train loading	Train loading	trainLoading
26		Train unloading	trainLoading
27		Printing consignment note	trainLoading
30	Train departure	Train departure	trainDeparture
31		Train departure cancel	trainDeparture
32	Train en route	EDI Consignment note	trainComposition
34		Train transit control	TimeCollection
35		Transport information update	TimeCollection
36		Train ETA	TimeCollection
37		Loading Unit ETP	unitEtp
38	Train arrival	Train arrival	trainArrival
39		Train arrival cancel	trainArrival

Status		Name	Top Element
40	Ready for Pickup	Loading unit ready for pickup	readyForPickup
41		Loading unit ready for pickup cancel	readyForPickup
45	Delivered at gateway	Delivered at gateway	deliveredAtGateway
46		Delivered at gateway cancel	deliveredAtGateway
50	Gate-Out	Gate-out Loading unit	pickupGateOut
51		Gate-out Loading unit Cancel	pickupGateout
13	Shipment	Pre-carriage	preCarriage
18		Lead time	leadTime
43		On-carriage	onCarriage
88		Pin code	unitPinCode
70	Train	HLR	hlr
71		HLR Cancel	hlr
72		MAD RU	madRu
73		MAD RU Cancel	madRu
74		Transfer of liability	transferLiability
75		Transfer of liability Cancel	transferLiability
60	Terminal	Item position	itemPosition
80		Terminal slot	terminalSlot

Status		Name	Top Element
82		Terminal info	terminalInfo
99		Additional event	additionalEvent
RS		Response message	statusResponse
CT		Commercial Timetable	commercialTimetable
OT		Operational Timetable	operationalTimetable
PT		Public Timetable	publicTimetable
TM		Terminal Master Data	terminalMasterData
TD		Train Disruption	trainDisruption
ND		Network Disruption	networkDisruption
DM		Disruption Message	disruptionMessage