

Types and XML Schema Definition for Timetable API_V1

May 4, 2017

In this document all XML elements and their attributes are described.

The following codes are used to describe the format of date time specifiers:

Code	Description
YY	Year (00..99) interpreted between 2000 and 2099.
MM	Month of year (01..12).
Dd	Day of month (01..31).
HH	Hour of day (00..23).
Mm	Minute within hour (00..59).

1 Types

1.1 MultipleStationData

A wrapper that represents multiple StationData objects.

XSD:

```
<xs:complexType name="multipleStationData">
  <xs:complexContent>
    <xs:extension base="jaxbEntity">
      <xs:sequence>
        <xs:element ref="station" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Tabelle 1 - XSD of MultipleStationData

Attributes:

Name	Type	Description	Optional
-			

Tabelle 2 - Attributes of MultipleStationData

Elemente:

Name	Type	Description	Multiplicity
station	StationData	List of stations with additional data	0..*

Tabelle 3 - Elements of MultipleStationData

1.2 StationData

A transport object which keep data for a station.

XSD:

```
<xs:complexType name="stationData">
  <xs:complexContent>
    <xs:extension base="jaxbEntity">
      <xs:sequence/>
      <xs:attribute name="p" type="xs:string"/>
      <xs:attribute name="meta" type="xs:string"/>
      <xs:attribute name="name" type="xs:string" use="required"/>
      <xs:attribute name="eva" type="xs:string" use="required"/>
      <xs:attribute name="ds100" type="xs:string" use="required"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Tabelle 4 - XSD of StationData

Attributes:

Name	Type	Description	Optional
p	String	List of platforms. A sequence of platforms separated by the pipe symbols (" ").	Yes
meta	String	List of meta stations. A sequence of station	Yes

		names separated by the pipe symbols (" ").	
name	String	Station name.	No
eva	String	EVA station number.	No
ds100	String	DS100 station code.	No

Tabelle 5 - Attributes of StationData

Elemente:

Name	Type	Description	Multiplicity
-			

Tabelle 6 - Elements of StationData

1.3 MultipleTimetables

A wrapper that represents multiple Timetable objects.

XSD:

```
<xs:complexType name="multipleTimetables">
  <xs:complexContent>
    <xs:extension base="jaxbEntity">
      <xs:sequence>
        <xs:element ref="timetable" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Tabelle 7 - XSD of MultipleTimetables

Attributes:

Name	Type	Description	Optional
-			

Tabelle 8 - Attributes of MultipleTimetable

Elemente:

Name	Type	Description	Multiplicity
timetable	Timetable	List of timetables	0..*

Tabelle 9 - Elements of MultipleTimetable

1.4 Timetable

A timetable is made of a set of TimetableStops and a potential Disruption.

XSD:

```
<xs:complexType name="timetable">
  <xs:complexContent>
    <xs:extension base="jaxbEntity">
      <xs:sequence>
        <xs:element ref="s" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element ref="m" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

```

</xs:sequence>
<xs:attribute name="station" type="xs:string"/>
<xs:attribute name="eva" type="xs:string"/>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

Tabelle 10 - XSD of Timetable

Attributes:

Name	Type	Description	Optional
station	String	Station name.	Yes
eva	String	EVA station number.	Yes

Tabelle 11 - Attributes of Timetable

Elemente:

Name	Type	Description	Multiplicity
s	TimetableStop	List of TimetableStop	0..*
m	Message	List of Message	0..*

Tabelle 12 - Elements of Timetable

1.5 TimetableStop

A stop is a part of a Timetable.

This type extends the element Stop.

XSD:

```

<xs:complexType name="timetableStop">
  <xs:complexContent>
    <xs:extension base="stop">
      <xs:sequence>
        <xs:element ref="t1" minOccurs="0"/>
        <xs:element name="ref" type="tripReference" minOccurs="0"/>
      </xs:sequence>
      <xs:attribute name="id" type="xs:string" use="required"/>
      <xs:attribute name="eva" type="xs:string" use="required"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

Tabelle 13 - XSD of TimetableStop

Attributes:

Name	Type	Description	Optional
id	String	An id that uniquely identifies the stop. It consists of the following three elements separated by dashes: <ul style="list-style-type: none"> • a 'daily trip id' that uniquely identifies a trip within one day. This id is typically reused on subsequent days. This could be negative • a 6-digit date specifier (YYMMdd) that indicates the planned departure date of the trip from its start station. 	No

		<ul style="list-style-type: none"> an index that indicates the position of the stop within the trip (in rare cases, one trip may arrive multiple times at one station). Added trips get indices above 100. <p>Example: “-7874571842864554321-1403311221-11” would be used for a trip with daily trip id “-7874571842864554321” that starts on march the 31th 2014 and where the current station is the 11th stop.</p>	
eva	String	The eva code of the station of this stop. Example: “8000105” for Frankfurt(Main)Hbf	No

Tabelle 14 - Attributes of TimetableStop

Elemente:

Name	Type	Description	Multiplicity
tl	TripLabel	Trip label.	0..1
ref	TripReference	Reference to an referenced trip. The substitution or additional trip references the originally planned trip. Note: referenced trip != reference trip	0..1

Tabelle 15 - Elements of TimetableStop

1.6 Stop

XSD:

```

<xs:complexType name="stop" abstract="true">
  <xs:complexContent>
    <xs:extension base="jaxbEntity">
      <xs:sequence>
        <xs:element ref="conn" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element ref="m" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="ar" type="event" minOccurs="0"/>
        <xs:element name="dp" type="event" minOccurs="0"/>
        <xs:element name="hd" type="historicDelay" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="hpc" type="historicPlatformChange" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="rtr" type="referenceTripRelation" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

Tabelle 16 - XSD of Stop

Attributes:

Name	Type	Description	Optional
-			

Tabelle 17 - Attributes of Stop

Elemente:

Name	Type	Description	Multiplicity
ar	Event	Arrival element. This element does not have child elements. All information about the arrival	0..1

		is stored in attributes (see the next table).	
dp	Event	Departure element. This element does not have child elements. All information about the departure is stored in attributes (see the next table).	0..1
m	Message	Message element.	0..*
hd	HistoricDelay	Historic delay element.	0..*
hpc	HistoricPlatformChange	Historic platform change element.	0..*
conn	Connection	Connection element.	0..*
rtr	ReferenceTripRelation	Reference trip relation element.	0..*

Tabelle 18 - Elements of Stop

1.7 TripLabel

It's a compound data type that contains common data items that characterize a Trip. The contents is represented as a compact 6-tuple in XML.

XSD:

```
<xs:complexType name="tripLabel">
  <xs:complexContent>
    <xs:extension base="referenceTripLabel">
      <xs:sequence/>
      <xs:attribute name="f" type="xs:string"/>
      <xs:attribute name="t" type="tripType"/>
      <xs:attribute name="o" type="xs:string" use="required"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Tabelle 19 - XSD of TripLabel

Attributes:

Name	Type	Description	Optional
f	String	Filter flags.	Yes
t	TripType	Trip type.	Yes
o	String	Owner. A unique short-form and only intended to map a trip to specific evu.	No

Tabelle 20 - Attributes of TripLabel

Elemente:

Name	Type	Description	Multiplicity
-			

Tabelle 21 - Elements of TripLabel

1.8 Connection

It's information about a connected train at a particular stop. A Connection (German: Anschluss).

XSD:

```

<xs:complexType name="connection">
  <xs:complexContent>
    <xs:extension base="jaxbEntity">
      <xs:sequence>
        <xs:element name="ref" type="timetableStop" minOccurs="0"/>
        <xs:element ref="s"/>
      </xs:sequence>
      <xs:attribute name="id" type="xs:string" use="required"/>
      <xs:attribute name="ts" type="xs:string" use="required"/>
      <xs:attribute name="eva" type="xs:string"/>
      <xs:attribute name="cs" type="connectionStatus" use="required"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

Tabelle 22 - XSD of Connection

Attributes:

Name	Type	Description	Optional
id	String	Id	No
ts	String	Time stamp. The time, in ten digit "YYMMddHHmm" format, e.g. "1404011437" for 14:37 on April the 1 st of 2014.	no
eva	String	EVA station number.	Yes
cs	Connection-Status	Connection status.	No

Tabelle 23 - Attributes of Connection

Elemente:

Name	Type	Description	Multiplicity
ref	Timetable-Stop	Timetable stop of missed trip.	0..1
s	Timetable-Stop	Timetable stop.	1

Tabelle 24 - Elements of Connection

1.9 Message

A message that is associated with an event, a stop or a trip.

XSD:

```

<xs:complexType name="message">
  <xs:complexContent>
    <xs:extension base="jaxbEntity">
      <xs:sequence>
        <xs:element name="dm" type="distributorMessage" minOccurs="0"
maxOccurs="unbounded"/>
        <xs:element ref="t1" minOccurs="0"/>
      </xs:sequence>
      <xs:attribute name="id" type="xs:string" use="required"/>
      <xs:attribute name="t" type="messageType" use="required"/>
      <xs:attribute name="from" type="xs:string"/>
      <xs:attribute name="to" type="xs:string"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

```

<xs:attribute name="c" type="xs:int"/>
<xs:attribute name="int" type="xs:string"/>
<xs:attribute name="ext" type="xs:string"/>
<xs:attribute name="cat" type="xs:string"/>
<xs:attribute name="ec" type="xs:int"/>
<xs:attribute name="ts" type="xs:string" use="required"/>
<xs:attribute name="pr" type="priority"/>
<xs:attribute name="o" type="xs:string"/>
<xs:attribute name="elnk" type="xs:string"/>
<xs:attribute name="del" type="xs:int"/>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

Tabelle 25 - XSD of Message

Attributes:

Name	Type	Description	Optional
id	String	Message id	No
t	Message-Type	Message type	No
from	String	Valid from. The time, in ten digit "YYMMddHHmm" format, e.g. "1404011437" for 14:37 on April the 1 st of 2014.	Yes
to	String	Valid to. The time, in ten digit "YYMMddHHmm" format, e.g. "1404011437" for 14:37 on April the 1 st of 2014.	Yes
c	Integer	Code.	Yes
int	String	Internal text.	Yes
ext	String	External text.	Yes
cat	String	Category.	Yes
ec	Integer	External category.	Yes
ts	String	Timestamp. The time, in ten digit "YYMMddHHmm" format, e.g. "1404011437" for 14:37 on April the 1 st of 2014.	No
pr	Priority	Priority.	Yes
o	String	Owner.	Yes
elnk	String	External link associated with the message.	Yes
del	Integer	Deleted.	Yes

Tabelle 26 - Attributes of Message

Elemente:

Name	Type	Description	Multiplicity
dm	Distributor-Message		0..*
tl	TripLabel		0..*

Tabelle 27 - Elements of Message

1.10 DistributorMessage

An additional message to a given station-based disruption by a specific distributor.

XSD:

```
<xs:complexType name="distributorMessage">
  <xs:sequence/>
  <xs:attribute name="t" type="distributorType"/>
  <xs:attribute name="n" type="xs:string"/>
  <xs:attribute name="int" type="xs:string"/>
  <xs:attribute name="ts" type="xs:string"/>
</xs:complexType>
```

Tabelle 28 - XSD of DistributorMessage

Attributes:

Name	Type	Description	Optional
t	Distributor-Type	Distributor type.	Yes
n	String	Distributor name.	Yes
int	String	Internal text.	Yes
ts	String	Timestamp. The time, in ten digit "YYMMddHHmm" format, e.g. "1404011437" for 14:37 on April the 1 st of 2014.	Yes

Tabelle 29 - Attributes of DistributorMessage

Elemente:

Name	Type	Description	Multiplicity
-			

Tabelle 30 - Elements of DistributorMessage

1.11 Event

An event (arrival or departure) that is part of a stop.

XSD:

```
<xs:complexType name="event">
  <xs:complexContent>
    <xs:extension base="jaxbEntity">
      <xs:sequence>
        <xs:element ref="m" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
      <xs:attribute name="cpth" type="xs:string"/>
      <xs:attribute name="ppth" type="xs:string"/>
      <xs:attribute name="cp" type="xs:string"/>
      <xs:attribute name="pp" type="xs:string"/>
      <xs:attribute name="ct" type="xs:string"/>
      <xs:attribute name="pt" type="xs:string"/>
      <xs:attribute name="cs" type="eventStatus"/>
      <xs:attribute name="ps" type="eventStatus"/>
      <xs:attribute name="hi" type="xs:int"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

```

<xs:attribute name="clt" type="xs:string"/>
<xs:attribute name="wings" type="xs:string"/>
<xs:attribute name="tra" type="xs:string"/>
<xs:attribute name="pde" type="xs:string"/>
<xs:attribute name="cde" type="xs:string"/>
<xs:attribute name="dc" type="xs:int"/>
<xs:attribute name="l" type="xs:string"/>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

Tabelle 31 - XSD of Event

Attributes:

Name	Type	Description	Optional
ppth	String	Planned Path. A sequence of station names separated by the pipe symbols (" "). E.g.: "Mainz Hbf Rüsselsheim Frankfrt(M) Flughafen". For arrival, the path indicates the stations that come before the current station. The first element then is the trip's start station. For departure, the path indicates the stations that come after the current station. The last element in the path then is the trip's destination station. Note that the current station is never included in the path (neither for arrival nor for departure).	Yes
cpth	String	Changed path.	Yes
pp	String	Planned platform.	Yes
cp	String	Changed platform.	Yes
pt	String	Planned time. Planned departure or arrival time. The time, in ten digit "YYMMddHHmm" format, e.g. "1404011437" for 14:37 on April the 1 st of 2014.	Yes
ct	String	Changed time. New estimated or actual departure or arrival time. The time, in ten digit "YYMMddHHmm" format, e.g. "1404011437" for 14:37 on April the 1 st of 2014.	Yes
ps	EventStatus	Planned status.	Yes
cs	EventStatus	Changed status. The status of this event, a one-character indicator that is one of: <ul style="list-style-type: none"> • "a" = this event was added • "c" = this event was cancelled • "p" = this event was planned (also used when the cancellation of an event has been revoked) The status applies to the event, not to the trip as a whole. Insertion or removal of a single stop will usually affect two events at once: one arrival and one departure event. Note that these two events do not have to belong to the same stop. For example, removing the last stop of a trip will result in arrival cancellation for the last stop and of departure cancellation for the stop before the last. So asymmetric cancellations of just arrival	Yes

		or departure for a stop can occur.	
hi	Integer	Hidden. 1 if the event should not be shown on WBT because travellers are not supposed to enter or exit the train at this stop.	Yes
clt	String	Cancellation time. Time when the cancellation of this stop was created. The time, in ten digit "YYMMddHHmm" format, e.g. "1404011437" for 14:37 on April the 1 st of 2014.	Yes
wings	String	Wing. A sequence of trip id separated by the pipe symbols (" "). E.g.: "-906407760000782942-1403311431".	Yes
tra	String	Transition. Trip id of the next or previous train of a shared train. At the start stop this references the previous trip, at the last stop it references the next trip. E.g.: "2016448009055686515-1403311438-1"	Yes
pde	String	Planned distant endpoint.	Yes
cde	String	Changed distant endpoint.	Yes
dc	Integer	Distant change.	Yes
l	String	Line. The line indicator (e.g. "3" for an S-Bahn or "45S" for a bus).	Yes

Tabelle 32 - Attributes of Event

Elemente:

Name	Type	Description	Multiplicity
m	Message	List of messages	0..*

Tabelle 33 - Elements of Event

1.12 HistoricChange

XSD:

```
<xs:complexType name="historicChange">
  <xs:sequence/>
  <xs:attribute name="ts" type="xs:string"/>
</xs:complexType>
```

Tabelle 34 - XSD of HistoricChange

Attributes:

Name	Type	Description	Optional
ts	String	Timestamp. The time, in ten digit "YYMMddHHmm" format, e.g. "1404011437" for 14:37 on April the 1 st of 2014.	Yes

Tabelle 35 - Attributes of HistoricChange

Elemente:

Name	Type	Description	Multiplicity
-			

Tabelle 36 - Elements of HistoricChange

1.13 HistoricDelay

It's the history of all delay-messages for a stop.

This element extends HistoricChange.

XSD:

```
<xs:complexType name="historicDelay">
  <xs:complexContent>
    <xs:extension base="historicChange">
      <xs:sequence/>
      <xs:attribute name="ar" type="xs:string"/>
      <xs:attribute name="dp" type="xs:string"/>
      <xs:attribute name="src" type="delaySource"/>
      <xs:attribute name="cod" type="xs:string"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Tabelle 37 - XSD of HistoricDelay

Attributes:

Name	Type	Description	Optional
ar	String	The arrival event. The time, in ten digit "YYMMddHHmm" format, e.g. "1404011437" for 14:37 on April the 1 st of 2014.	Yes
dp	String	The departure event. The time, in ten digit "YYMMddHHmm" format, e.g. "1404011437" for 14:37 on April the 1 st of 2014.	Yes
src	Delay-Source	Source of the message	Yes
cod	String	Detailed description of delay cause	

Tabelle 38 - Attributes of HistoricDelay

Elemente:

Name	Type	Description	Multiplicity
-			

Tabelle 39 - Elements of HistoricDelay

1.14 HistoricPlatformChange

It's the history of all platform-changes for a stop.

This element extends HistoricChange.

XSD:

```
<xs:complexType name="historicPlatformChange">
```

```

<xs:complexContent>
  <xs:extension base="historicChange">
    <xs:sequence/>
    <xs:attribute name="ar" type="xs:string"/>
    <xs:attribute name="dp" type="xs:string"/>
    <xs:attribute name="cot" type="xs:string"/>
  </xs:extension>
</xs:complexContent>
</xs:complexType>

```

Tabelle 40 - XSD of HistoricPlatformChange

Attributes:

Name	Type	Description	Optional
ar	String	Arrival platform.	Yes
dp	String	Departure platform.	Yes
cot	String	Detailed cause of track change	Yes

Tabelle 41 - Attributes of HistoricPlatformChange

Elemente:

Name	Type	Description	Multiplicity
-			

Tabelle 42 - Elements of HistoricPlatformChange

1.15 StationDetails

Additional details for a station that go beyond what is present in StationData or in a Timetable. The details include all station based messages.

XSD:

```

<xs:complexType name="stationDetails">
  <xs:complexContent>
    <xs:extension base="jaxbEntity">
      <xs:sequence>
        <xs:element ref="m" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
      <xs:attribute name="eva" type="xs:string" use="required"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

Tabelle 43 - XSD of StationDetails

Attributes:

Name	Type	Description	Optional
eva	String	EVA station number	No

Tabelle 44 - Attributes of StationDetails

Elemente:

Name	Type	Description	Multiplicity
m	Message	List of station based messages	0..*

Tabelle 45 - Elements of StationDetails

1.16 MultipleTrips

A wrapper that represents multiple Timetable objects.

XSD:

```
<xs:complexType name="multipleTrips">
  <xs:complexContent>
    <xs:extension base="jaxbEntity">
      <xs:sequence>
        <xs:element ref="trip" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Tabelle 46 - XSD of MultipleTrips

1.17 Trip

A trip (i.e. a train/bus/tram etc.) moves from s start station to a destination station.

XSD:

```
<xs:complexType name="trip">
  <xs:complexContent>
    <xs:extension base="jaxbEntity">
      <xs:sequence>
        <xs:element ref="tl"/>
        <xs:element ref="s" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
      <xs:attribute name="id" type="xs:string" use="required"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Tabelle 47 - XSD of Trip

Attributes:

Name	Type	Description	Optional
id	String	Trip ID	No

Tabelle 48 - Attributes of Trip

Elemente:

Name	Type	Description	Multiplicity
tl	TripLabel		
s	TripStop		0..*

Tabelle 49 - Elements of Trip

1.18 TripStop

This element extends Stop.

XSD:

```
<xs:complexType name="tripStop">
  <xs:complexContent>
```

```

<xs:extension base="stop">
  <xs:sequence/>
  <xs:attribute name="i" type="xs:int" use="required"/>
  <xs:attribute name="eva" type="xs:string" use="required"/>
  <xs:attribute name="jt" type="junctionType"/>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

Tabelle 50 - XSD of TripStop

Attributes:

Name	Type	Description	Optional
i	Integer	Stop index.	No
eva	String	EVA number of the station	No
jt	Junction-Type	Junktion type.	Yes

Tabelle 51 - Attributes of TripStop

Elemente:

Name	Type	Description	Multiplicity
-			

Tabelle 52 - Elements of TripStop

1.19 StopDetails

XSD:

```

<xs:complexType name="stopDetails">
  <xs:complexContent>
    <xs:extension base="jaxbEntity">
      <xs:sequence>
        <xs:element ref="m" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element ref="conn" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
      <xs:attribute name="id" type="xs:string" use="required"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

Tabelle 53 - XSD of StopDetails

Attributes:

Name	Type	Description	Optional
id	String	Stop id.	No

Tabelle 54 - Attributes of StopDetails

Elemente:

Name	Type	Description	Multiplicity
m	Message		0..*
conn	Connection		0..*

1.20 ConnectionStatus

XSD:

```
<xs:simpleType name="connectionStatus">
  <xs:restriction base="xs:string">
    <xs:enumeration value="w"/>
    <xs:enumeration value="n"/>
    <xs:enumeration value="a"/>
  </xs:restriction>
</xs:simpleType>
```

Tabelle 56 - XSD of ConnectionStatus

Attributes:

Name	Type	Description	Optional
w	String	WAITING This (regular) connection is waiting.	Yes
n	String	TRANSITION This (regular) connection CANNOT wait.	Yes
a	String	ALTERNATIVE This is an alternative (unplanned) connection that has been introduced as a replacement for one regular connection that cannot wait. The connections "tl" (triplabel) attribute might in this case refer to the replaced connection (or more specifically the trip from that connection). Alternative connections are always waiting (they are removed otherwise).	Yes

Tabelle 57 - Attributes of ConnectionStatus

Elemente:

Name	Type	Description	Multiplicity
-			

Tabelle 58 - Elements of ConnectionStatus

1.21 MessageType

XSD:

```
<xs:simpleType name="messageType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="h"/>
    <xs:enumeration value="q"/>
    <xs:enumeration value="f"/>
    <xs:enumeration value="d"/>
    <xs:enumeration value="i"/>
    <xs:enumeration value="u"/>
    <xs:enumeration value="r"/>
    <xs:enumeration value="c"/>
  </xs:restriction>
</xs:simpleType>
```


Tabelle 59 - XSD of MessageType

Attributes:

Name	Type	Description	Optional
h	String	HIM A HIM message (generated through the Hafas Information Manager).	Yes
q	String	QUALITY CHANGE A message about a quality change.	Yes
f	String	FREE A free text message.	Yes
d	String	CAUSE OF DELAY A message about the cause of a delay.	Yes
i	String	IBIS An IBIS message (generated from IRIS-AP).	Yes
u	String	UNASSIGNED IBIS MESSAGE An IBIS message (generated from IRIS-AP) not yet assigned to a train.	Yes
r	String	DISRUPTION A major disruption.	Yes
c	String	CONNECTION A connection.	Yes

Tabelle 60 - Attributes of MessageType

Elemente:

Name	Type	Description	Multiplicity
-			

Tabelle 61 - Elements of MessageType

1.22 Priority**XSD:**

```

<xs:simpleType name="priority">
  <xs:restriction base="xs:string">
    <xs:enumeration value="1"/>
    <xs:enumeration value="2"/>
    <xs:enumeration value="3"/>
    <xs:enumeration value="4"/>
  </xs:restriction>
</xs:simpleType>

```

Tabelle 62 - XSD of Priority

Attributes:

Name	Type	Description	Optional
1	String	HIGH	Yes
2	String	MEDIUM	Yes

3	String	LOW	Yes
4	String	DONE	Yes

Tabelle 63 - Attributes of Priority

Elemente:

Name	Type	Description	Multiplicity
-			

Tabelle 64 - Elements of Priority

1.23 DistributorType

XSD:

```
<xs:simpleType name="distributorType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="s"/>
    <xs:enumeration value="r"/>
    <xs:enumeration value="f"/>
    <xs:enumeration value="x"/>
  </xs:restriction>
</xs:simpleType>
```

Tabelle 65 - XSD of DistributorType

Attributes:

Name	Type	Description	Optional
s	String	CITY	Yes
r	String	REGION	Yes
f	String	LONG DISTANCE	Yes
x	String	OTHER	Yes

Tabelle 66 - Attributes of DistributorType

Elemente:

Name	Type	Description	Multiplicity
-			

Tabelle 67 - Elements of DistributorType

1.24 EventStatus

XSD:

```
<xs:simpleType name="eventStatus">
  <xs:restriction base="xs:string">
    <xs:enumeration value="p"/>
    <xs:enumeration value="a"/>
    <xs:enumeration value="c"/>
  </xs:restriction>
</xs:simpleType>
```

Tabelle 68 - XSD of EventStatus

Attributes:

Name	Type	Description	Optional
p	String	PLANNED The event was planned. This status is also used when the cancellation of an event has been revoked.	Yes
a	String	ADDED The event was added to the planned data (new stop)	Yes
c	String	CANCELLED The event was canceled (as changedstatus, can apply to planned and added stops)	Yes

Tabelle 69 - Attributes of EventStatus

Elemente:

Name	Type	Description	Multiplicity
-			

Tabelle 70 - Elements of EventStatus

1.25 DelaySource

XSD:

```
<xs:simpleType name="delaySource">
  <xs:restriction base="xs:string">
    <xs:enumeration value="L"/>
    <xs:enumeration value="NA"/>
    <xs:enumeration value="NM"/>
    <xs:enumeration value="V"/>
    <xs:enumeration value="IA"/>
    <xs:enumeration value="IM"/>
    <xs:enumeration value="A"/>
  </xs:restriction>
</xs:simpleType>
```

Tabelle 71 - XSD of DelaySource

Attributes:

Name	Type	Description	Optional
L	String	LEIBIT LeiBit/LeiDis	Yes
NA	String	RISNE AUT IRIS-NE (automatisch)	Yes
NM	String	RISNE MAN IRIS-NE (manuell)	Yes
V	String	VDV Prognosen durch dritte EVU über VDVin	Yes
IA	String	ISTP AUT ISTP automatisch	Yes

IM	String	ISTP MAN ISTP manuell	Yes
A	String	AUTOMATIC PROGNOSIS Automatische Prognose durch Prognoseautomat	Yes

Tabelle 72 - Attributes of DelaySource

Elemente:

Name	Type	Description	Multiplicity
-			

Tabelle 73 - Elements of DelaySource

1.26 FilterFlag

XSD:

```
<xs:simpleType name="filterFlag">
  <xs:restriction base="xs:string">
    <xs:enumeration value="D"/>
    <xs:enumeration value="F"/>
    <xs:enumeration value="N"/>
    <xs:enumeration value="S"/>
  </xs:restriction>
</xs:simpleType>
```

Tabelle 74 - XSD of FilterFlags

Attributes:

Name	Type	Description	Optional
D	String	EXTERNAL	Yes
F	String	LONG_DISTANCE	Yes
N	String	REGIONAL	Yes
S	String	SBAHN	Yes

Tabelle 75 - Attributes of FilterFlags

Elemente:

Name	Type	Description	Multiplicity
-			

Tabelle 76 - Elements of FilterFlags

1.27 JunctionType

The enumeration describes the junction type of a stop.

Regular trains don't have any special junctions so all their stops have JunctionType.NONE. However, wing trains have SPLITS and JOINS at certain locations within their paths. And "Durchbindung" trains have TRANSITIONS, i.e. locations where the train changes its train number and/or category.

Example for a wing train:

Train ICE 123 starts at Munich towards Frankfurt. Train ICE 456 starts at Stuttgart towards Frankfurt. Both trains arrive at the same platform in Frankfurt and are joined (coupled together). The joined train departs from Frankfurt and proceeds to Hannover. In Hannover the trains get split up again into its two

constituent parts: ICE 123 and ICE 456. Train ICE 123 departs from Hannover towards its destination Hamburg. Train ICE 456 departs from Hannover towards its destination Berlin. In this case, the stop at Frankfurt would have JunctionType.JOIN and Hannover would have JunctionType.SPLIT.

Example for a "Durchbindung" train:

Train "RE 98765" departs from Mannheim towards Frankfurt. The train arrives as "RE 98765" in Frankfurt but departs under the new name "RB 77665" towards Fulda. In this case, the stop at Frankfurt would have JunctionType.TRANSITION.

XSD:

```
<xs:simpleType name="junctionType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="t"/>
    <xs:enumeration value="s"/>
    <xs:enumeration value="j"/>
  </xs:restriction>
</xs:simpleType>
```

Tabelle 77 - XSD of JunctionType

Attributes:

Name	Type	Description	Optional
t	String	TRANSITION This stop is a transition station of a 'Durchbindung' train, i.e. the same physical train arrives under one train number/category and departs from this stop under a different train number/category. A transition is represented graphically by a horizontal line with a dot in the middle.	Yes
s	String	SLPIT The wing train is split at this stop, i.e. two (or more) trains arrive coupled together as a single train, are split at this stop and depart as separate independent trains on different routes. Those independent trains might or might not be joined again later. A split is represented graphically by one line that is split into two (when viewed from left to right).	Yes
j	String	JOIN The wing train is joined at this stop, i.e. two (or more) trains arrive independently on different routes, get coupled together and depart from this stop as a single train. That joined train might or might not be split again later. A join is represented graphically by two lines that are joined into one (when viewed from left to right).	Yes

Tabelle 78 - Attributes of JunctionType

Elemente:

Name	Type	Description	Multiplicity
-			

Tabelle 79 - Elements of JunctionType

1.28 ReferenceTripRelation

A reference trip relation holds how a reference trip is related to a stop, for instance the reference trip starts after the stop.

Stop contains a collection of that type, only if reference trips are available.

XSD:

```
<xs:complexType name="referenceTripRelation">
  <xs:complexContent>
    <xs:extension base="jaxbEntity">
      <xs:sequence>
        <xs:element name="rt" type="referenceTrip"/>
        <xs:element name="rts" type="referenceTripRelationToStop"/>
      </xs:sequence>
    </xs:complexContent>
  </xs:complexType>
```

Tabelle 80 - XSD of ReferenceTripRelation

Attributes:

Name	Type	Description	Optional
-			

Tabelle 81 - Attributes of ReferenceTripRelation

Elemente:

Name	Type	Description	Multiplicity
rt	ReferenceTrip	Reference trip element.	1
rts	ReferenceTripRelationToStop	Relation to stop element.	1

Tabelle 82 - Elements of ReferenceTripRelation

1.29 ReferenceTrip

A reference trip is another real trip, but it doesn't have its own stops and events. It refers only to its referenced regular trip. The reference trip collects mainly all different attributes of the referenced regular trip.

XSD:

```
<xs:complexType name="referenceTrip">
  <xs:complexContent>
    <xs:extension base="jaxbEntity">
      <xs:sequence>
        <xs:element name="rtl" type="referenceTripLabel"/>
        <xs:element name="sd" type="referenceTripStopLabel"/>
        <xs:element name="ea" type="referenceTripStopLabel"/>
      </xs:sequence>
      <xs:attribute name="id" type="xs:string" use="required"/>
      <xs:attribute name="c" type="xs:boolean" use="required"/>
    </xs:complexContent>
  </xs:complexType>
```

Tabelle 83 - XSD of ReferenceTrip

Attributes:

Name	Type	Description	Optional
------	------	-------------	----------

id	String	An id that uniquely identifies the reference trip. It consists of the following two elements separated by dashes: <ul style="list-style-type: none"> • A 'daily trip id' that uniquely identifies a reference trip within one day. This id is typically reused on subsequent days. This could be negative. • A 10-digit date specifier (YYMMddHHmm) that indicates the planned departure date of the referenced regular trip from its start station. Example: "-7874571842864554321-1403311221" would be used for a trip with daily trip id "-7874571842864554321" that starts on march the 31 th 2014.	No
c	Boolean	The cancellation flag. True means, the reference trip is cancelled.	No

Tabelle 84 - Attributes of ReferenceTrip

Elemente:

Name	Type	Description	Multiplicity
rtl	ReferenceTripLabel	Reference trip label.	1
sd	ReferenceTripStopLabel	Reference trip stop label of the start departure event.	1
ea	ReferenceTripStopLabel	Reference trip stop label of the end arrival event.	1

Tabelle 85 - Elements of ReferenceTrip

1.30 ReferenceTripLabel

It's a compound data type that contains common data items that characterize a reference trip. The contents is represented as a compact 3-tuple in XML.

XSD:

```
<xs:complexType name="referenceTripLabel">
  <xs:complexContent>
    <xs:extension base="jaxbEntity">
      <xs:sequence/>
      <xs:attribute name="n" type="xs:string" use="required"/>
      <xs:attribute name="c" type="xs:string" use="required"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Tabelle 86 - XSD of ReferenceTripLabel

Attributes:

Name	Type	Description	Optional
n	String	Trip/train number, e.g. "4523".	No
c	String	Category. Trip category, e.g. "ICE" or "RE".	No

Tabelle 87 - Attributes of ReferenceTripLabel

Elemente:

Name	Type	Description	Multiplicity
-			

Tabelle 88 - Elements of ReferenceTripLabel

1.31 ReferenceTripStopLabel

It's a compound data type that contains common data items that characterize a reference trip stop. The contents is represented as a compact 4-tuple in XML.

XSD:

```
<xs:complexType name="referenceTripStopLabel">
  <xs:complexContent>
    <xs:extension base="jaxbEntity">
      <xs:sequence/>
      <xs:attribute name="i" type="xs:int" use="required"/>
      <xs:attribute name="pt" type="xs:string" use="required"/>
      <xs:attribute name="eva" type="xs:string" use="required"/>
      <xs:attribute name="n" type="xs:string" use="required"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Tabelle 89 - XSD of ReferenceTripStopLabel

Attributes:

Name	Type	Description	Optional
i	Integer	The index of the correspondent stop of the regular trip.	No
pt	String	The planned time of the correspondent stop of the regular trip.	No
eva	String	The eva number of the correspondent stop of the regular trip.	No
n	String	The (long) name of the correspondent stop of the regular trip.	No

Tabelle 90 - Attributes of ReferenceTripStopLabel

Elemente:

Name	Type	Description	Multiplicity
-			

Tabelle 91 - Elements of ReferenceTripStopLabel

1.32 ReferenceTripRelationToStop

The reference trips relation to the stop, which contains it.

XSD:

```
<xs:simpleType name="referenceTripRelationToStop">
  <xs:restriction base="xs:string">
    <xs:enumeration value="b"/>
    <xs:enumeration value="e"/>
  </xs:restriction>
</xs:simpleType>
```



```

<xs:enumeration value="c"/>
<xs:enumeration value="s"/>
<xs:enumeration value="a"/>
</xs:restriction>
</xs:simpleType>

```

Tabelle 92 - XSD of ReferenceTripRelationToStop

Attributes:

Name	Type	Description	Optional
b	String	BEFORE The reference trip ends before that stop.	No
e	String	END The reference trips ends at that stop.	No
c	String	BETWEEN The stop is between reference trips start and end, in other words, the stop is contained within its travel path.	No
s	String	START The reference trip starts at that stop.	No
a	String	AFTER The reference trip starts after that stop.	No

Tabelle 93 - Attributes of ReferenceTripRelationToStop

Elemente:

Name	Type	Description	Multiplicity
-			

Tabelle 94 - Elements of ReferenceTripRelationToStop

1.33 TripReference

It's a reference to another trip, which holds its label and reference trips, if available.

XSD:

```

<xs:complexType name="tripReference">
  <xs:complexContent>
    <xs:extension base="jaxbEntity">
      <xs:sequence>
        <xs:element ref="tl" type="tripLabel" minOccurs="1" maxOccurs="1"/>/>
        <xs:element name="rt" type="referenceTrip" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

Tabelle 95 - XSD of TripReference

Attributes:

Name	Type	Description	Optional
-			

Tabelle 96 - Attributes of TripReference

Elemente:

Name	Type	Description	Multiplicity
tl	TripLabel	The referred trips label.	1
rt	ReferenceTrip	The referred trips reference trip elements.	0..*

Tabelle 97 - Elements of TripReference