

XSD2017d

VDV implementation rules 454 – Swiss public transport system

Based on VDV Guideline 454 version 2.2.1

Author(s) KIDS working group

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Version V 1.4.3

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Change history from V 1.1 to 1.2

Section	Change	Editor	Date
Sect. 1.4	Change of VDV version.	KIDS working group	20.12.16
Sect. 3.2.6	Subscription behaviour for REF-AUS in Swiss public transport CR0024 from WG meeting dated 15.09.2016	KIDS working group	04.10.16
Sect. 5.1.1, 5.2.1	Implementation of operator filter for data platforms and ITCS with two or more operators is mandatory. The use of operator filter by clients is recommended. CR0036 from WG meeting dated 15.09.2016	KIDS working group	04.10.16
Sect. 5.1.1, 5.2.1	Use of placeholders in Swiss public transport system CR0039 from WG meeting dated 08.06.2016	KIDS working group	17.08.16
Sect. 5.2.2	In the Swiss public transport system, the first message in the AUS service must always be a complete journey, in order to ensure an initial status in each case for the journey, which is independent of the service. CR0030 from WG meeting dated 08.06.2016	KIDS working group	17.08.16
Sect. 5.1.3.1, 5.2.2.1	Order of stops as per inspection. CR0032 from WG meeting dated 08.06.2016	KIDS working group	17.08.16

Change history from V 1.2 to 1.3

Section	Change	Editor	Date
1.4	Reference [6] added	C. Heimlicher	18.12.17
3.3	Sections ProduktID (product ID) VerkehrsmittelText (transport mode text) revised in accordance with harmonisation of transport. In particular, the transport category was replaced and the table inserted.	C. Heimlicher	18.12.17
5.1.3.1	Section now matches the VDV standard in version 2.5. Processing has not changed.	KIDS working group	17.07.17
5.2.2.1	Section now matches the VDV standard in version 2.5. Processing has not changed.	KIDS working group	17.07.17
5.2.2.8	New section from VDV Guideline 454 added.	KIDS working group	17.07.17
6.1.10	Withdrawal of PrognoseMoeglich (prediction possible) from true to false was given new processing in VDV Guideline 454. This is not compatible with previous versions.	KIDS working group	17.07.17
6.1.15	New section from VDV Guideline 454 added.	KIDS working group	17.07.17
6.1.6	The description of partial cancellations (route changes) was moved from section 6.1.12 to section 6.1.6. Implementation remains the same.	KIDS working group	04.10.17
6.1.12	For total cancellations, it was clarified that only the last valid stops (from the last complete journey) need to be transmitted again for a cancellation message. The fact that the FahrtStartEnde (journey start end) element is not permitted to be changed is already set out in the VDV Guideline.	KIDS working group	04.10.17
5.1.3 5.1.3.1	VerkehrsmittelText (transport mode text) and ProduktID (product ID) must be provided either in the line-timetable or in the target journey.	KIDS working group	06.12.17

5.2.2.1	VerkehrsmittelText (transport mode text) and ProduktID (product ID) must be provided in the actual journey.	KIDS working group	06.12.17
3.3	Text added for BetreiberID (operator ID): "An operator can deliver either rail or local transport data with a BetreiberID (operator ID). If an operator needs to deliver both rail and local transport data, this must be delivered with a different BetreiberID (operator ID) even if both use the same line."	KIDS working group	20.09.18
3.3	Text added for LinienID (line ID): "If an operator has multiple same lines (same line numbers), each of these lines must be delivered with a separate BetreiberID (operator ID)."	KIDS working group	20.09.18
5.2.1	In the Swiss public transport system, delivery of real time to the FOT and therefore in the CUS is mandatory for all transport companies.	KIDS working group	20.09.18
10.9	New values for the VerkehrsmittelText (transport mode text) and the conversion procedure added.	KIDS working group	20.09.18
10.10	New values for the ProduktID (product ID) and the conversion procedure added.	KIDS working group	20.09.18
10.11	New values for the ServiceAttribut (service attribute) and the conversion procedure added.	KIDS working group	20.09.18

Change history from V 1.3 to 1.4.2

Section	Change	Editor	Date
Various	Offer category and transport category link to document created.	KIDS working group	26.11.2019
1.1	Reference to VDV Guideline 454, V2.2. Instruction repeated: version XSD2017.c must always be used across the Swiss public transport system.	KIDS working group	31.08.2020
1.4	An additional document created to clarify the use of the prediction status. This document has been linked in this section.	KIDS working group	13.07.2020
1.4	Links to the original documents added.	KIDS working group	26.11.2019

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3.2.6 5.5.1	From XSD2017c, all subscriptions in the Swiss public transport system should be set with the element <code>MitBereitsAktivenFahrten=true</code> (with already active journeys = true) (default is "false"). The journeys must also be sent accordingly.	KIDS working group	13.07.2020
3.3	<ul style="list-style-type: none"> • ProduktID (product ID) and VerkehrsmittelText (transport mode text) are mandatory in AUS and REF-AUS. Lists have been moved to an external document. • Specifics on VerkehrsmittelNummer (transport number) • Note on LinienText (line text) • Track and sector information is now delivered in or obtained from two separate fields in the CUS data platform. • Format of tracks and sectors for rail transport added. • A maximum of two values per line can be supplied with one character. The values "H" and "R" are recommended. These values must match the target data. The special case of rail is not applicable. 	KIDS working group	06.07.2020
3.6	The time format is described in enough detail in the VDV Guideline and has therefore been deleted.	KIDS working group	26.11.2019
5.1.1	<code>MitBereitsAktivenFahrten=true</code> (with already active journeys = true) is now mandatory for subscriptions.	KIDS working group	31.08.2020
5.1.3	VerkehrsmittelText (transport mode text) and ProduktID (product ID) are now mandatory	KIDS working group	31.08.2020
5.1.3.1	<ul style="list-style-type: none"> • VerkehrsmittelText (transport mode text) and ProduktID (product ID) are now mandatory • Specifics on VerkehrsmittelNummer (transport number) 	KIDS working group	31.08.2020
5.1.4	Section from VDV Guideline 454 added.	KIDS working group	31.08.2020
5.2.1	All suppliers must be able to work with the <code>MitRealZeiten=true</code> (with real time = true) flag in the subscription (see section 1.2.3).	KIDS working group	27.11.2019
5.2.2	The text has been clarified and when changing <code>PrognoseMoeglich</code> (prediction possible) from "false" to "true" a complete journey must be sent with all stops.	KIDS working group	14.09.2020
5.2.2.1	<ul style="list-style-type: none"> • VerkehrsmittelText (transport mode text) and ProduktID (product ID) are now mandatory • Specifics on VerkehrsmittelNummer (transport number) 	KIDS working group	31.08.2020

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5.2.2.3	More detail provided on handling prediction status in an external document.	KIDS working group	31.08.2020
5.2.2.8	Implementation note on Fahrtbeziehung (journey relationship) added:	KIDS working group	14.09.2020
5.3	Implementation note on AnschlussPlan (connection plan) added:	KIDS working group	14.09.2020
6.1.6	Comments added on transmitting route interruptions in rail transport.	KIDS working group	13.07.2020
6.1.9	Implementation note on new value PrognoseUngenau=unbekannt (prediction inaccurate = unknown) added.	KIDS working group	14.09.2020
6.1.12	For an initial message (as a complete journey), all stops must always be included in the Swiss public transport system, even in the case of a cancellation.	KIDS working group	27.11.2019
10.5	New values FehlendeRollstuhlplaetze (missing wheelchair space) and FehlendeNiederflurwagen (missing low floor coach)	KIDS working group	27.11.2019
10.9	Information on ProduktID (product ID) deleted and reference to section 3.3 added	KIDS working group	27.11.2019
10.10	Information on VerkehrsmittelText (transport mode text) deleted and reference to section 3.3 added	KIDS working group	27.11.2019

Change history from V 1.4.2 to 1.4.3

Section	Change	Editor	Date
page 1 1.1 1.4	XSD2017c replaced by XSD2017d.	KIDS working group	07.04.2021
1.4	VDV453 version 2.6 replaced by version 2.6.1.	KIDS working group	07.04.2021
page 1 1.1 1.4	VDV454 version 2.2 replaced by version 2.2.1.	KIDS working group	07.04.2021

Approval status:

Version	Date	Status
1.0	07.11.2014	Approved by IT committee (VöV)
1.1	21.10.2015	Approved by IT committee (VöV)
1.2	28.04.2017	Reviewed by IT committee and recommended for approval

KIDS working group

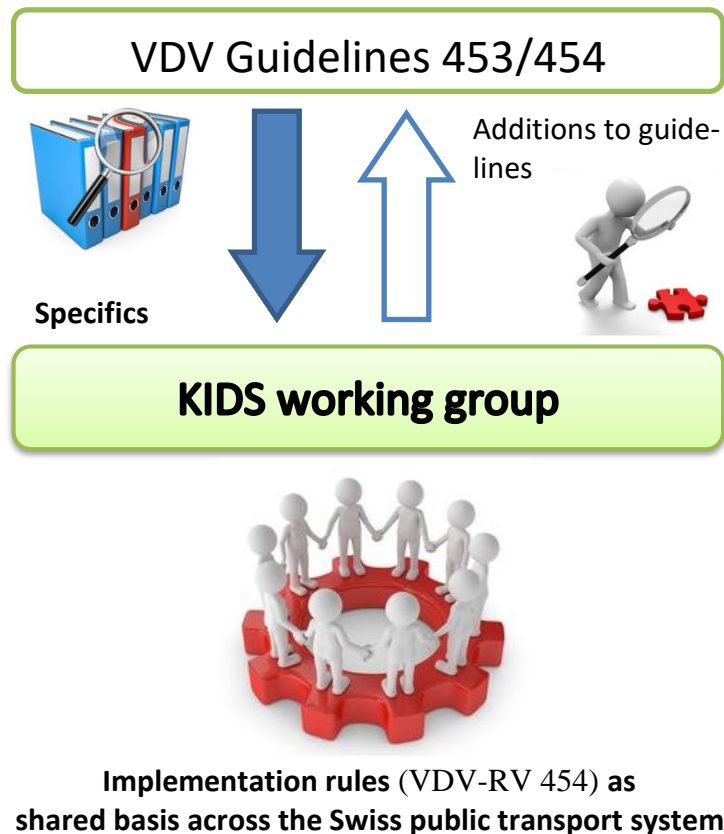
(Kundeninformationsdaten-Schnittstellen im öV-Schweiz) (customer information data interfaces in the Swiss public transport system)

1.2	02.11.2017	Approved by SKI Mgmt Board
1.3	01.10.2018	Reviewed by IT committee and recommended for approval
1.3	24.10.2018	Approved and declared binding by SKI Mgmt Board
1.4.2	11.11.2020	Approved and declared binding by SKI Mgmt Board
1.4.3	05.05.2021	Approved and declared binding by SKI Mgmt Board

1. Preliminary remarks

Based on the official VDV Guideline 454 [3] (published by the German Association of Transport Companies (VDV)), this document describes the implementation rules for public transport in Switzerland, hereinafter designated as “VDV-RV 454”.

It makes clear the specifics and deviations from the official guideline, with the aim of uniform application communication across the entire Swiss public transport system.



The implementation rules in this document have been agreed upon by the KIDS working group (“Kundeninformationsdaten-Schnittstellen” (customer information data interface in the Swiss public transport system) and are the result of a standardisation process that concerns the uniform application of VDV Guidelines across the Swiss public transport system.

The implementation rules are officially approved by the IT committee (KIT) of the Association of Public Transport (VöV).

The implementation rules essentially comprise:

- specifics on points that are knowingly left abstract and vague in the VDV Guideline.
- specifics on points that were previously not handled uniformly across the Swiss public transport system.
- conscious deviations from the official VDV Guideline within the Swiss public transport system.

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(Kundeninformationsdaten-Schnittstellen im öV-Schweiz) (customer information data interfaces in the Swiss public transport system)

1.1. Supported versions

The implementation rules are based on VDV Guideline 454 “Actual data interface – Timetable information” [3] **version 2.2.1**.

The XSD used to validate the XML messages is XSD **version** 2017.d (without Siri). This XSD (see [2]) contains the schemata for both VDV453 [1] and VDV454 [3].

1.2. Document structure and scope

1.2.1. Scope

These implementation rules for the Swiss public transport system (VDV-RV 454) are a supplement to the official VDV Guideline 454 [3] and describe only the deviations, changes and specifics to this guideline. This document therefore does **not** replace the official VDV Guideline 454 [3] and therefore does not contain the complete information needed to implement or understand the VDV454 interface.

In addition to these implementation rules, the respective partners require an agreement that is even more specific than described here and is tailored to the individual circumstances and needs of the individual partners. This VDV interface specification specifies points not described here and may also contain explicit deviations and additions to VDV-RV 454. These bilateral or multilateral specifications (hereinafter referred to as Partner2Partner specifications) should always refer to this VDV-RV 454 and be based as closely as possible on this.

The document is not to be interpreted as a contract. The contractual situation between two partners or their suppliers is not part of this document.

1.2.2. Uniform chapter structure

In order to simplify a direct comparison between the implementation rules and the official VDV Guideline, the section structure of the VDV Guideline 454 shall be adopted consistently in this document, **starting with 2**, [3].

In detail, this means that:

- The official VDV Guideline 454[3] generally applies. The statements and definitions set out there are not repeated in this document¹.
- A **blank section** in this document means that the original VDV Guideline applies without exceptions or additional stipulations.
- If specifics or deviation from the standard is necessary due to special circumstances within Swiss public transport, these will be described in detail in the section in question.

¹ An exception to this rule will be made if a brief description of the normal case defined in VDV Guideline 454 is required or practical in order to understand a following text or the general context.

- The official VDV Guideline 454 [3] purposefully does not make any stipulations on metadata for data exchange between VDV partners. Stipulations on individual metadata and its structure, which apply to the whole Swiss public transport system as a rule,² are described in the relevant sections.

The consistency of the section structure is guaranteed, with the following caveat:

If an explanation or addition is necessary and does not match the specified section structure, a separate section will be added at the end of the section level in question, which always has the extra text “**(addition for VDV-RV 454)**” in the title. This section (including any subsections) does not correspond to the official VDV Guideline 454 [3] and therefore by placing it at the end of the section level it does not affect other section numbers that follow it.

1.2.3. Mandatory, optional and non-supported fields

In the tables describing the XML structure of a data element, the last column specifies whether the element in question is mandatory or optional. If use deviates from the original VDV Guideline 454 [3], the value in this document is shown in red.

Mandatory	Element must be specified in the XML structure and contain a semantically meaningful value. Specifying a mandatory field without a value is not allowed.
Optional	<p>Element can be specified or can be omitted. If the element is specified, it should contain a semantically meaningful value.</p> <p>A previously delivered value can be reset by explicitly not specifying the value when the element is transferred again (if this is permitted by the XSD definition).</p> <p>If the optional element is omitted in the case of a change notification, the value from the last transfer applies.</p> <p>If the optional element is omitted in the case of a complete journey, the value is reset to the default (if defined) or otherwise left blank (null).</p>
n/a	<p>Element is not supported. If it is specified, the content will be ignored.</p> <p>All data elements that are not supported or are not known to the system-specific XSD are to be ignored by the system. A processing or validation error must not result from this.</p>

Table 1: Mandatory and optional fields

1.3. Binding nature

This document describes how VDV Guideline 454 [3] is applied and interpreted specifically within Switzerland. It forms the basis of agreements for VDV connection between the individual public transport partners for exchanging current data.

In addition to the stipulations in this document, the respective partners will need to agree upon metadata not defined here or in the official VDV specification.

² The rules are defined by the KIDS working group and apply as the standard for the Swiss public transport system..

1.4. Referenced documents

- [1] German Association of Transport Companies (VDV)
VDV Guideline 453 – Actual data interface – Timetable information, version 2.6.1, Cologne (Germany), 2021
<https://transportdatamanagement.ch/en/standards/>
- [2] German Association of Transport Companies (VDV)
XML schema for VDV453_incl_454_V2017.d.xsd (Version: “2017.d”), Cologne (Germany), 2021
<https://www.vdv.de/i-d-s-downloads.aspx>
- [3] German Association of Transport Companies (VDV)
VDV Guideline 454, Actual data interface – Timetable information, version 2.2.1, Cologne (Germany), 2021
<https://transportdatamanagement.ch/en/standards/>
- [4] Association of Public Transport (VöV)
VDV453 implementation rules for the Swiss public transport system, version 1.4.3, Bern (Switzerland), 2021
- [5] Swiss Federal Office of Transport (FOT)
Stops (DiDok list), Bern (Switzerland)
<https://opentransportdata.swiss/en/dataset/didok>
- [6] Alliance Swiss Pass
V580 – FIScommun / Produkt Nr. 06
<https://www.allianceswisspass.ch/de/asp/Downloadsindex.php?section=downloads&download=14462>
- [7] Using the Forecast Status in VDV454
<https://transportdatamanagement.ch/en/standards/>

2. Introduction

2.1. General objective

The VDV454 interface aims to transfer timetable data to one or more VDV partners. The data transferred via this interface is also required in order to provide real-time data in information systems.

This document, together with the official VDV Guideline 454 [3], defines the Swiss-wide standard for implementing the VDV interface, as well as individual data structures, based on the mutual exchange of real-time transport information between public transport companies using the ITCS (Intermodal Transport Control System) or “data hubs”.

Both documents when taken together describe in detail:

- what data may be exchanged between public transport partners
- what elements of the VDV Guideline are supported within the Swiss public transport system
- explicit deviations from the corresponding VDV Guideline
- the format of individual data elements
- the content and time-related data flows
- what agreements concerning metadata are necessary
- what must be ensured for operation of the interface
- how data is to be interpreted if this is not clear from VDV Guideline 454 [3] or if its use deviates from VDV Guideline 454 [3]

(See also the corresponding section in the VDV Guideline [3])

2.2. Requirements for data exchange

(see VDV Guideline 454 [3])

2.2.1. Transfer of updated planning and operating data

(see VDV Guideline 454 [3])

2.2.2. Referencing of actual data

(see VDV Guideline 454 [3])

2.2.3. Provision of target data

(see VDV Guideline 454 [3])

2.2.4. Definition of values to be used uniformly

(see VDV Guideline 454 [3])

3. Introduction and basic definitions

3.1. Structure of the interface

(see VDV Guideline 454 [3])

3.2. Timetable information data service AUS

(see VDV Guideline 454 [3])

3.2.1. Overview

(see VDV Guideline 454 [3])

3.2.2. Specialist services REF-AUS and AUS

(see VDV Guideline 454 [3])

3.2.3. Functional scope of REF-AUS

(see VDV Guideline 454 [3])

3.2.4. Functional scope of AUS

(see VDV Guideline 454 [3])

3.2.5. Scope of specialist service DFI

(see VDV Guideline 454 [3])

3.2.6. Data exchange with REF-AUS (addition for VDV-RV 454)

Before the operating day for the individual transport company starts, the recipient should obtain a complete day timetable via the REF-AUS service in accordance with VDV Guideline 454 (section 3.2.2 and 3.2.3). This creates a common basis for the subsequent subscription of AUS messages.

In processing the REF-AUS data in the recipient system, a time replacement from line-timetables is used (same BetreiberID (operator ID), same LinienID (line ID), same RichtungsID (direction ID)) – this means that all journeys already received for these line-timetables are replaced in the transmitted validity period (GueltigVon (valid from), GueltigBis (valid to)) by the newly transmitted journeys from the day timetable (also for the period timetable).

This principle also applies to REF-AUS processing in an information system – even if the data from the period timetable is used there as a basis. In this case all journeys from REF-AUS are individually matched to the appropriate journeys in the period timetable:

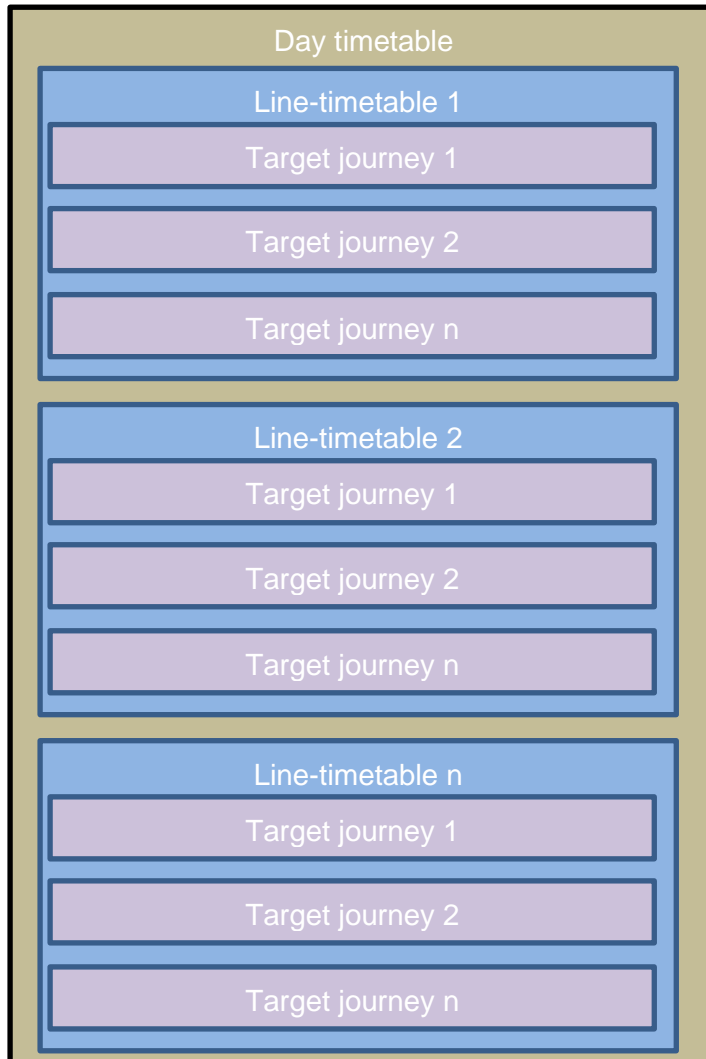
- matching journeys are displayed
- additional journeys from REF-AUS are displayed without the “additional journey” attribute, without using the “additional journey” note
- redundant journeys in the period timetable are removed, without the note “failed to use”.

This ensures that the number of operated journeys is always determined by the control system. The information system can, however, display additional attributes contained in the period timetable (e.g. subject to surcharge).

The maximum available validity periods and when the target day timetables are available from the respective data producer shall be agreed upon across the entire supply chain (producer, data platform, recipient) (see section 3.2.6.3).

3.2.6.1. Day timetable

A day timetable consists of a number of line-timetables and a line-timetable from a number of target journeys.



Complete line-timetables across the defined validity period (GueltigVon (valid from), GueltigBis (valid to)) are transferred via VDV454 REF-AUS. Each line-timetable contains all target journeys that start before or within the validity period and have at least one stop within the validity period (VDV Guideline 454, section 5.1.1: *MitBereitsAktivenFahrten=true*).

The following rules must be observed in the process:

- A line-timetable must always be transferred in full in one message. Dividing it up across multiple packets (e.g. DatenAbrufenAntworten via WeitereDaten=true) is not permitted. A line-timetable always contains all journeys that are operated for the defined validity period. Target journeys that are not transferred in the line-timetable are

not operated; new target journeys are interpreted as additional journeys and the “additional journey” flag is applied by the recipient as per the transferred target journey.

- A blank line-timetable is also a complete line-timetable. A blank line-timetable therefore deletes all journeys for the defined validity period.
- If the recipient cannot interpret target journeys, it is a good idea to discard the complete line-timetable, or it at least needs to be considered whether it is better to discard the target journeys that cannot be interpreted (which are then no longer operated) or discard the entire line-timetable.
- If a line-timetable cannot be delivered in full for the agreed validity period as per the subscription, then it should not be transferred; otherwise all journeys that are not transferred will be deleted.
- If a line-timetable is not transferred, the recipient’s line-timetable continues from its most recent transfer status (REF-AUS or period timetable).
- Target journeys in the line-timetable can be marked as cancelled with the flag FaelltAus=true (cancelled = true). If target journeys are simply omitted, it is a good idea for the recipient to delete the journey and not set the FaelltAus flag.

3.2.6.2. Transmission sequence for REF-AUS and AUS

According to VDV Guideline 454 (section 3.2.2 and 3.2.3), the day timetables should first be synchronised (the recipient has the same target data as the sender) and then changes to the day timetable are subscribed via the AUS service.

Reason:

- AUS messages will otherwise be transferred without the recipient’s and supplier’s data pools being synchronised.
- Obsolete or incorrect data pools may be displayed.
 - Additional journeys from REF-AUS are not displayed in the AUS service or are only displayed when the first journey is transferred.
 - Cancelled journeys continue to be displayed.
 - Route changes from REF-AUS are not displayed in the AUS service or are only displayed when the first journey is transferred.
 - Formations are not displayed in the AUS service or are only displayed when the first journey is transferred.
 - Actual journeys from the AUS service must be compared against the period timetable. If a journey cannot be compared, journeys may not be deleted or may be duplicated.
 - Etc.

3.2.6.3. Organisational agreement in CUS for the transfer of REF-AUS data

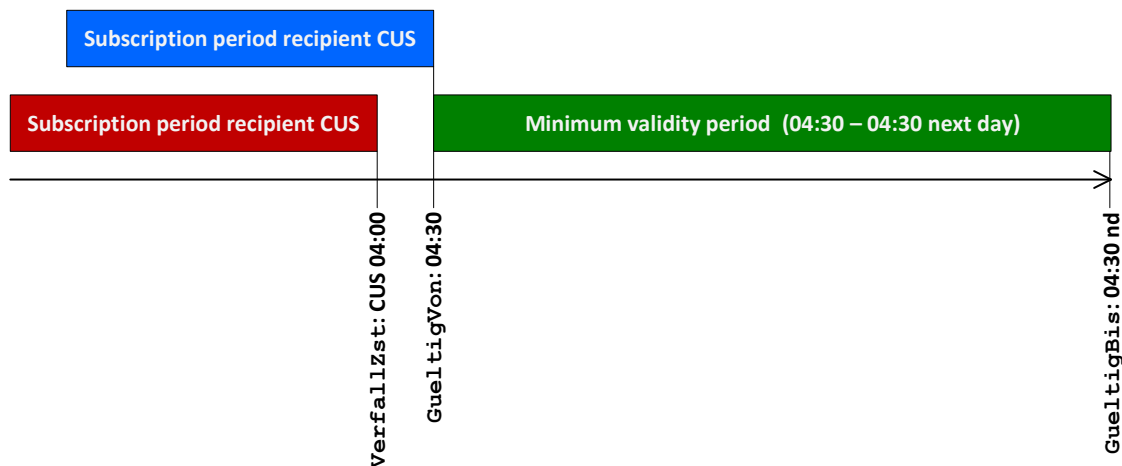
In order to issue subscriptions over the correct subscription period and with the right validity period, an organisational agreement is needed across the entire supply chain.

- Which subscription periods and validity periods for this day timetable can be defined is agreed upon organisationally across the entire supply chain (producer, data platforms, recipient).
- All CUS suppliers agree to deliver their line-timetables in CUS by 04:00 at the latest on the day of operation, with a validity period running from 04:30 to 04:30 of the following day at a minimum.
- CUS as the data platform can only check whether the received line-timetables comply with the recipient’s validity period once the line-timetables are received from the suppliers, which is why CUS confirms the recipient’s subscription without checking whether

it can deliver this data in each case. It is ensured, however, that only data that matches the subscription is delivered. If this is not the case, no line-timetables are delivered.

- The recipient always orders at least the minimum validity period from 04:30 to 04:30 of the following day.

The graphic shows how REF-AUS data can be transferred via a data platform (CUS in this case).



Sample table for organisational agreement:

Operator	Operator > CUS (inbound)				CUS > recipient (outbound)			
	Time range for sub query		Day timetable		Time range for sub query		Daily timetable	
	Sub query	Sub expiry	GueltigVon (ValidFrom)	For duration of	Sub query	Sub expiry	GueltigVon (ValidFrom)	For duration of
Partner 1	03:30	04:00	04:30	24:45 h	04:00	04:30	04:30	24:45h
Partner 2	03:30	04:00	04:30	30 h	04:00	04:30	04:30	30h
Partner 3	23:00 (previous day)	01:00	04:30	48 h	01:30	02:30	04:30	30h

This table is maintained by Fachbus CUS in accordance with the agreements.

3.3. Metadata, mapping of stops and lines

(see VDV Guideline 454 [3])

- **HaltID (stop ID)**

(see VDV Guideline 454 [3])

The <HaltID> (stop ID) element describes the stop, and optionally the stopping point to which a vehicle runs.

Format:

The KIDS committee aims to use unique Swiss-wide HaltID (stop IDs) in the Swiss public transport system. The HaltID (stop ID) should be specified in as much detail as possible, if available, and should be treated the same in the application of Guidelines VDV453 [1] and VDV454 [3]. It should be structured as described in the following:

- unique Swiss-wide two-digit UIC country code
- five-digit UIC code (without check digit) for specifying the stop in question (global stop range)
- (optional) two-digit code for identifying the stopping point within the stop.

If there are multiple stopping points within a stop, the code used to identify and differentiate the precise position can be used. If stops do not need to be broken down into more detail and the stopping position corresponds to the stop itself, the two-digit stopping point code does not have to be specified. The resulting code for the <HaltID> (stop ID) is therefore usually seven digits (HaltID (stop ID) corresponds to global stop), but can also be nine digits when more detail is provided (HaltID (stop ID) corresponds to a specific stopping point).

Composition of <HaltID>:

UIC country code + UIC code + (stopping point code)
--

Example for Zürich HB: 8503000, 850300002

The UIC country codes and UIC stop code for identifying the stop also apply to bus stops, tram stops, etc. They are based on the Swiss-wide operating point list (as per FOT DiDok list [5]).

- **LinienID (line ID):**

(see VDV Guideline 454 [3])

If an operator has multiple same lines (same line numbers) at different locations, each of these lines must be delivered with a separate BetreiberID (operator ID).

Note on REF-AUS:

If a line is operated by multiple transport companies and delivered to recipient systems via separated ITCS, these control systems and the data cancel each other out. These types of line must be divided into two separate lines (with separate line ID or separate operator ID) similar to the ITCS.

Format of LinienID (line ID) in local transport (target image):

[UIC country code]:[Business organisation number]:[Technical line key]
 Example: 85:849:2

Format of LinienID (line ID) in rail transport:

In the VDV454 services, the journey number (usually the train number) for the journey in question is transmitted in the <LinienID> (line ID) element.

Note: See also section 4.5 observing VDV-RV 453 [4], section 6.1.6 Line and direction references [4].

- **RichtungSID (direction ID):**
 (see VDV Guideline 454 [3])

Recommendation: When journeys are transmitted, the RichtungSID (direction ID) value, which is transmitted via VDV454 services, should match the value from the “ID for direction” field for the corresponding journey from the period timetable. A maximum of two values per line can be supplied with one character. The values “H” and “R” are recommended.

In the REF-AUS service especially this is important in order to compare the line-timetables with the line-timetables in the period timetable.

- **ProduktID (product ID):**
 (see VDV Guideline 454 [3])

The transport category is communicated as the <ProduktID> > (product ID) in the Swiss public transport system (e.g. “boat”, “bus”, “train” etc.). The data-producing transport company must ensure in the process that the transmitted transport categories [6] match the transport categories used in the timetable collection in the Swiss public transport system (INFO+).

Notes

- Specifying the ProduktID (product ID) is partly used for the assignment of pictograms in the information systems.
 - The current transport categories can be found on the home page of Alliance Swiss Pass [6]. These must be adhered to across the Swiss public transport system whenever possible.
 - Nonetheless the values for the transport category may change at short notice and sometimes even without any notice. Recipient systems should therefore be able to respond rapidly to such changes and must not discard data with unknown transport categories.
- **BetreiberID (operator ID):**
 (see VDV Guideline 454 [3])

Indicates which business organisation of a transport company (business organisation number as per DiDok list [5]) is running a journey.

The BetreiberID (operator ID) is a mandatory field in the Swiss public transport system and must be specified in the following format:

[UIC country code]:[Business organisation number]

Definitions:

Identifier	Meaning	Example
UIC country code	Country code of the transport company (as per UIC) operating the journey. Numeric value with max. 2 digits	85
Business organisation number	Number of the business organisation of a transport company operating the journey, as per the FOT DiDok list [5] or reference for the country in question. (Synonym: transport company code.) Number should not start with a leading zero. Max. six-character alphanumerical value (permissible characters are { A-Z, a-z, 0-9, _ }). The business organisation number must be identical in the FahrtBezeichner (journey identifier), BetreiberID (operator ID) and LinienID (line ID) elements. If the numbers are different, the journey may not be able to be processed (inconsistencies).	37

An operator can deliver either rail or local transport data with a BetreiberID (operator ID). If an operator needs to deliver both rail and local transport data, this must be delivered with a different BetreiberID (operator IDs) even if both use the same line (e.g. use of buses instead of rail in off-peak periods).

Note:

The product "Bahn" (rail) must be able to be subscribed even without local transport data (including filtering). Until all systems are able to deliver the ProduktID (product ID) and have consistently implemented a ProduktFilter (product filter), this interim solution involving a separate BetreiberID (operator ID) for rail and local transport must remain in place.

- **VerkehrsmittelText (transport mode text) (addition for VDV-RV 454):**

The offer category is communicated as the <VerkehrsmittelText> (transport mode text) in the Swiss public transport system (e.g. ICE, RE, R, S, B, T, FUN, LB, etc.). The data-producing transport company must ensure in the process that the transmitted VerkehrsmittelText (transport mode text) matches the offer categories [6] used in the timetable collection in the Swiss public transport system (INFO+).

Notes

- Specifying the ProduktID (product ID) is partly used for the assignment of pictograms in the information systems.
- The current offer categories can be found on the home page of Alliance SwissPass [6]. These must be adhered to across the Swiss public transport system whenever possible.
- Nonetheless the values for the offer categories may change at short notice and sometimes even without any notice. Recipient systems should therefore be able to respond rapidly to such changes and must not discard data with unknown offer categories.

- Deviating offer categories from foreign transport companies are accepted as delivered by the transport companies and transmitted in an unchanged format to relevant data recipients.
- **LinienText (line text): (addition for VDV-RV 454)**

The <LinienText> (line text) element is publication-relevant and must therefore be forwarded to the information system and displayed there in the format of consistent customer information as prepared by the data supplier.

The LinienText (line text) is a matching criterion for certain information systems and should therefore match the line number in INFO+.

LinienText (line text) in rail transport:

The publication-relevant line designation (PLB) is transmitted in the <LinienText> (line text) element in the VDV454 services.

In CUS this is composed of the following elements:

Offer category	Line number	LinienText (line text)
S		S
S	1	S1
IC		IC
ICE		ICE
R		R
S	L1	SL1

Delivered in CUS, however, the PLB in rail transport is divided into the VerkehrsmittelText (transport mode text) (offer category) and LinienText (line text) (line number):

- PLB = S1
 - CUS (VDV454 delivery)
 - VerkehrsmittelText (transport mode text) = S
 - LinienText (line text) = 1
 - INFO+ (delivery)
 - Category = S
 - Line = 1
 - Note: Delivery from CUS in LinienText (line text): S1 (as per table above).
- PLB = R
 - CUS (VDV454 delivery)
 - VerkehrsmittelText (transport mode text) = R
 - LinienText (line text) = "blank"
 - INFO+ (delivery)
 - Category = R
 - Line = blank
 - Note: Delivery from CUS in LinienText (line text): R (as per table above).
- **Bays (AnkunftssteigText, AbfahrtssteigText): (addition for VDV-RV 454)**

For rail travel, the "Steig" (bay) corresponds to the track identifier, without the sector. This is normally a number.

- **Sectors (AnkunftsSektorenText, AbfahrtsSektorenText): (addition for VDV-RV 454)**
The following format must be observed in rail travel:
Sectors are specified in the following format to save space:
 - A to Z letters, max. three characters without spaces (e.g. “ABC”)
 - For more than three letters, describe as a range with a hyphen (e.g. “A-D” corresponds to “ABCD”)

This is to be ensured by the source systems (INFO+, CUS, VDV supplier partners etc.).

Sectors only have to be transmitted if the stopping point deviates from the usual location (e.g. two trains at the same platform).

3.4. Estimation of data quantities

(see VDV Guideline 454 [3])

3.5. Estimation of data currentness

(see VDV Guideline 454 [3])

3.6. Time formatting

(see VDV Guideline 454 [3])

3.7. Operating day (addition for VDV-RV 454)

(see also VDV453 RV [4], section 6.1.1)

4. “Basic infrastructure” interface description

4.1. Preliminary remarks

(see VDV Guideline 454 [3])

4.2. Subscription procedures

(see VDV Guideline 454 [3])

4.3. Protocols

(see VDV Guideline 454 [3])

4.4. Service ID / Query ID

(see VDV Guideline 454 [3])

Since changes within a partner’s system environment, which also acts as a server, can also affect application addressing, it is a good idea to design the addressing of VDV queries to be configurable on the client side.

Changes to the URL of a service on the server side must be approved by the recipients.

4.4.1. Control point ID (addition for VDV-RV 454)

The control point ID is included in both the access URL and in the message itself in the form of the `sender` XML attribute.

In addition to the **sender of a message** (system ID) it also identifies the respective **platform** from which a message is sent (platform ID). Both components are connected with a “_” (underscore sign) between them.

<Systemkennung>_<Plattformkennung>

It is recommended to specify the control point identifier in lowercase letters.

The system ID can be freely selected. The underscore sign “_” however must not be used within the system ID. It is a good idea to specify in the system ID the respective abbreviations for the partner and, if necessary, the abbreviation for the system designation (e.g. “sbb”, “aags”, “riv”, “zvv”, “zvb”, “svb-lio”, “svb-dss” etc.).

The platform from which data is exchanged is specified in the platform ID.

The following IDs are defined as standard:

Platform	Platform ID
Development	entw
Testing	test
Integration	int
Production	prod

Table 2: Platform IDs

If the platform IDs defined here are not enough, more IDs can be added with the agreement of both sides. Partners that operate fewer than the platforms listed here are limited to the ones they have available.

Valid control point IDs include, for example: “zvv_test”, “zvv_prod”, “riv_prod”, “sbb_int”, “sbb_prod”, “svb-dds_test”, “svb-dds_prod”.

4.5. Reused data types

(see VDV Guideline 454 [3])

In relation to the VDV454 services, please explicitly follow the specifics from VDV-RV 453 [4] regarding the following reused data types:

Element	Note	Specifics in VDV-RV 453 [4]
DatenAbrufenAntwort	The separation of data for a subscription. Include as much detail as possible	Section 5.1.4.2
FahrtID	Specifics concerning mandatory field and formatting of <FahrtID> (journey ID) and use and consistency with <FahrtBezeichner> (journey identifier) (VDV453/454)	Section 6.1.5
LinienID	Specifics concerning formatting and use and consistency with <LinienID> (VDV453/454)	Section 6.1.6

4.5.1. StatusAnfrage (status query) and StatusAntwort (status reply) (addition for VDV-RV 454)

Client side

If a client receives a “notok” back in the <StatusAntwort> (status reply) to a sent <StatusAnfrage> (status query), it must be assumed that the entire service is not available. From this point, the client is not allowed to send any more queries to the partner system except for the <StatusAnfragen> (status queries) that continue on a cyclical basis. As soon as the first “ok” is received in a <StatusAntwort> (status reply), the service in question is considered “available again” and regular data exchange can be resumed. The behaviour is no different

from when absolutely no reply is received to a <StatusAnfrage> (status query) (see also VDV Guideline 453 [1], section 5.1.8 [1]).

4.6. Use of optional fields

VDV-RV 454 follows the stipulations of VDV Guideline 454 [3] in this case in principle. For data recipients this means that they always have to compare newly received data against data that was received prior, in order to have all information for a journey. Data in optional elements that were specified in a previous message retain their validity even if they are no longer explicitly specified in a subsequent change message (except when transmitting complete journeys).

5. Specialist services

5.1. Target data service REF-AUS

(see VDV Guideline 454 [3])

5.1.1. Timetable data query (*AboAUSRef*)

(see VDV Guideline 454 [3])

Element	Notes	Field
BetreiberFilter	<p>(subelement, mandatory/optional, multiple) Filter for the transport company for which day timetables are to be sent. The element contains the BetreiberID (operator ID) for which the subscriber is requesting data (see VDV Guideline 454 [3], section 5.1.1.3).</p> <p>No data: All of the target data known to the ITCS must be transmitted (subject to other filters or limitations).</p> <p>For all data platforms delivered in CUS and ITCS with two operators or more, the operator filter (outbound) must be implemented; for all others implementation is optional. Data suppliers that have not yet implemented the BetreiberFilter (operator filter) must respond to an Abo-Anfrage (subscription query) with a BetreiberFilter (operator filter) with “notok” and an error number 3xx.</p> <p>Using the operator filter is recommended for all data recipients, as otherwise all new operators will automatically be taken from the server.</p>	Optional / mandatory (see notes)
MitBereitsAktiven Fahrten	<p>See VDV Guideline 454 [3]</p> <p>This element should always be transmitted with the value “true” in the Swiss public transport system. From version 3.0 the element is omitted and the value “true” is instead always accepted.</p> <p>All journeys that start before the validity period and have at least one stop within the validity period are also transmitted with this parameter.</p>	Mandatory

Use of placeholders for filtering in the Swiss public transport system:

Two partners can agree to use placeholders in the filter criteria. The following characters are allowed:

- the asterisk * stands for any number of characters (letters or numbers), or for no character at all
- the question mark ? stands for exactly one character (letter or number)
- the hash # stands for exactly one single digit number

Note: the use of placeholders in the Swiss public transport system is voluntary and must be explicitly agreed upon between two partners.

5.1.2. Transmitting data (AUSNachricht)

(see VDV Guideline 454 [3])

5.1.3. Line-oriented timetable data transmission (Linienfahrplan) (line-timetable)

In contrast to VDV Guideline 454 [3] (cf. [1], section 5.1.3), the BetreiberID (operator ID) is mandatory:

Element	Notes	Field
BetreiberID	<p>See section 3.3, BetreiberID [.....]</p> <p>Indicates which business organisation of a transport company (business organisation number as per DiDok list [5]) is running the target journeys for the line-timetable in question.</p> <p>A line-timetable can only be run by one business organisation.</p> <p>If the journeys are being run by a third party on behalf of the operating business organisation, the BetreiberID (operator ID) for the business organisation operating the journey must be specified (not the third party running it).</p> <p>Also indicates the business organisation for which the period timetable is to be replaced by the day timetable.</p>	Mandatory

Specifics for VDV Guideline 454 (cf. [3], section 5.1.3) concerning ProduktID (product ID):

Element	Notes	Field
ProduktID	<p>See VDV Guideline 454 [3]</p> <p>The ProduktID (product ID) must be specified in the line-timetable, in all target journeys or in both structures.</p>	Mandatory / optional (see notes)

Specifics for VDV Guideline 454 (cf. [3], section 5.1.3) concerning VerkehrsmittelText (transport mode text):

Element	Notes	Field
VerkehrsmittelText	(mandatory / optional) [.....] Identifier for the offer category of the target journeys in a line-timetable. (See also section 3.3 VerkehrsmittelText) The VerkehrsmittelText (transport mode text) element can be overridden for each target journey. (cf. VDV Guideline 454 [3], section 5.1.3.1) The VerkehrsmittelText (transport mode text) must be specified in the line-timetable, in all target journeys or in both structures.	Mandatory / optional (see notes)

5.1.3.1. Individual journey data (SollFahrt)

(see VDV Guideline 454 [3])

Element	Notes	Field
VerkehrsmittelNummer	See VDV Guideline 454 [3] The Zugnummer (train number) is transmitted in this element in the Swiss public transport system.	Optional
ProduktID	See VDV Guideline 454 [3] The ProduktID (product ID) must either be specified in the line-timetable or in all target journeys.	Mandatory / optional (see notes)
VerkehrsmittelText	See VDV Guideline 454 [3] The VerkehrsmittelText (transport mode text) must either be specified in the line-timetable or in all target journeys.	Mandatory / optional (see notes)
Zugname	The <i>Zugname</i> (train name) element contains the marketing name (see [6])	Optional
ServiceAttribut	The ServiceAttribute (service attributes) are predefined in the Swiss public transport system, see section 10.11.	Optional

5.1.3.2. Information on journey service (ServiceAttribut) (service attribute)

(see VDV Guideline 454 [3])

5.1.3.3. Information on the stop (SollHalt) (target stop)

(see VDV Guideline 454 [3])

The formats are defined in section 0.

5.1.3.4. Information on SollFahrt (target journey) formation (SollFormation) (target formation)

(see VDV Guideline 454 [3])

5.1.3.5. Planned connections (SollAnschluss) (target connection)
(see VDV Guideline 454 [3])

5.1.4. Circuit-related timetable data transfer

(see VDV Guideline 454 [3])

5.2. Actual data service AUS

5.2.1. Actual data query (AboAUS)

(see VDV Guideline 454 [3], incl. subsections)

In contrast to VDV Guideline 454 (cf.[3], section 5.21), the BetreiberFilter (operator filter) may be mandatory:

Element	Notes	Field
BetreiberFilter	<p>(see VDV Guideline 454 [3])</p> <p>For all data platforms delivered in CUS and ITCS with two operators or more, the operator filter (outbound) must be implemented; for all others implementation is optional. Data suppliers that have not yet implemented the BetreiberFilter (operator filter) must respond to an AboAnfrage (subscription query) with a BetreiberFilter (operator filter) with “notok” and an error number 3xx.</p> <p>Using the operator filter is recommended for all data recipients, as otherwise all new operators will automatically be taken from the server.</p>	Optional / mandatory (see notes)
MitRealZeiten	<p>(see VDV Guideline 454)</p> <p>The delivery of real time to the FOT and therefore into CUS is mandatory for all transport companies. CUS therefore sets all subscriptions exclusively with the MitRealZeiten=true (with real time = true) parameter. Every supplier must be able to work with this (see section 1.2.3).</p>	Mandatory

Use of placeholders for filtering in the Swiss public transport system:

Two partners can agree to use placeholders in the filter criteria. The following characters are allowed:

- the asterisk * stands for any number of characters (letters or numbers), or for no character at all
- the question mark ? stands for exactly one character (letter or number)
- the hash # stands for exactly one single digit number

Note: the use of placeholders in the Swiss public transport system is voluntary and must be explicitly agreed upon between two partners.

5.2.2. Transmitting actual data

(see VDV Guideline 454 [3])

For all suppliers that deliver in CUS, the first message in the AUS service must always be a complete journey, in order to ensure an initial status in each case for the journey, which is independent of the service. The also applies for any change from “false” to “true” in PrognoseMoeglich (prediction possible).

If the <DatensatzAlle> (dataset all) element <DatenAbrufenAnfrage> (data query) is set to true, all of the journeys that are active and relevant at the time are transmitted as complete journeys. The respective partners must decide among themselves whether existing journeys are relevant.

5.2.2.1. Actual data for a journey (IstFahrt) (actual journey)
(see VDV Guideline 454 [3])

In contrast to VDV Guideline 454 (cf.[3], section 5.1.3) there are additional mandatory elements and specifications:

Element	Notes	Field
BetreiberID	[.....] See section 0, BetreiberID The transport company (business organisation number as per the DiDok list [5]) that is commissioned (by FOT, the canton, etc.) to run this journey and holds the concession for it is always specified in the BetreiberID (operator ID). It does not matter whether they actually run this journey themselves or commission another transport company (third party) to do it.	Mandatory
VerkehrsmittelNummer	See VDV Guideline 454 [3] The Zugnummer (train number) is transmitted in this element in the Swiss public transport system.	Optional
ProduktID	See VDV Guideline 454 [3] and section 0.	Mandatory
VerkehrsmittelText	See VDV Guideline 454 [3] and section 0.	Mandatory
Zugname	The <i>Zugname</i> (train name) element contains the marketing name (see [6]).	Optional
ServiceAttribut	The ServiceAttribute (service attributes) are predefined in the Swiss public transport system, see section 10.11.	Optional

5.2.2.2. Referencing of journey data (FahrtRef)
(see VDV Guideline 454 [3])

In contrast to VDV Guideline 454 (cf.[3], section 5.2.2.2), the FahrtID (journey ID) is mandatory:

Element	Notes	Field
FahrtID	[.....] The FahrtID (journey ID) must always be specified, as it is needed in the Swiss public transport system to reference the IstFahrten (actual journeys) (AUS) and for mapping to target journeys (REF-AUS). Concerning the format of <FahrtBezeichner> (journey identifier), see VDV-RV 453 [4], section 6.1.5	Mandatory

5.2.2.2.1. Alternative referencing information (FahrtStartEnde) (journey start end)
(see VDV Guideline 454 [3])

5.2.2.3. Information on the stop (IstHalt) (actual stop)
(see VDV Guideline 454 [3])

The formats are defined in section 0.

In addition, more detail is provided on the process for transmitting a forecast status in the document “Using the Forecast Status in VDV454” [7]. This document applies for all versions of the VDV454 implementation rules in the Swiss public transport system.

5.2.2.4. Formation of the IstFahrt (actual journey) (IstFormation) (actual formation)
(see VDV Guideline 454 [3])

5.2.2.5. Element structures used multiple times within the IstFormation (actual formation)
(see VDV Guideline 454 [3])

5.2.2.6. Additional information (StoerungsInfo) (disruption info)
(see VDV Guideline 454 [3])

5.2.2.7. Prediction quality (IstAnkunftPrognoseQualitaet (actual arrival prediction quality) and IstAbfahrtsprognoseQualitaet (actual departure prediction quality): (ZeitQualitaet) (time quality)
(see VDV Guideline 454 [3])

5.2.2.8. Reference to the originally planned journey (FahrtBeziehung) (journey relationship)
(see VDV Guideline 454 [3])

Implementation note:

All data platforms must receive and forward the new FahrtBeziehung (journey relationship) element. The following applies for all other systems: the FahrtBeziehung (journey relationship) does not have to be sent or evaluated in the Swiss public transport system. However, if a FahrtBeziehung (journey relationship) is received, an XSD validation error must not be triggered.

5.2.3. Circuit-related actual data transmission (IstUmlauf)

(see VDV Guideline 454 [3])

5.3. Secured connection relationships

(see VDV Guideline 454 [3])

Implementation note:

All data platforms must receive and forward the modified AnschlussPlan (connection plan). The following applies for all other systems: the AnschlussPlan (connection plan) does not have to be sent or evaluated in the Swiss public transport system. However, if an AnschlussPlan (connection plan) is received, an XSD validation error must not be triggered.

5.4. Transmission of formation information

(see VDV Guideline 454 [3])

5.5. Transmission of combined journeys (connection of transport journeys)

(see VDV Guideline 454 [3])

6. Handling of actual data service AUS

6.1. Implementation notes and rules

(see VDV Guideline 454 [3])

6.1.1. Prediction competency of the ITCS

(see VDV Guideline 454 [3])

6.1.2. Additional rule on delay profile

(see VDV Guideline 454 [3])

6.1.3. Aggregation of messages for one journey

(see VDV Guideline 454 [3])

6.1.4. Example “Travelling through a stop” (attribute change)

(see VDV Guideline 454 [3])

6.1.5. Example “Operating a required transport stop”

(see VDV Guideline 454 [3])

6.1.6. Example “Route change”

(see VDV Guideline 454 [3])

In the case of a **partial cancellation**, a `<IstFahrt>` (actual journey) with the following characteristics is sent:

- the `<FaelltAus>` (cancelled) element is not included or has the value `false`.
- the `<Komplettfahrt>` (complete journey) element contains the value `true`.
- all currently valid elements of the `<IstHalt>` (actual stop) type are specified.
- the cancelled elements of the `<IstHalt>` (actual stop) type are not given.

In rail transport, the journey cannot always be divided into two separate journeys in the event of a route interruption. Instead, as a temporary solution, the last stop before the route interruption is transmitted with `HinweisText`=“Teilausfall Abfahrt” (note text = “partial cancellation departure”) and the first stop after the route interruption is transmitted with `HinweisText`=“Teilausfall Ankunft” (note text = “partial cancellation arrival”). All stops between these two stops are cancelled.

6.1.7. Initial message and preview time

(see VDV Guideline 454 [3])

6.1.8. Time-related message behaviour – delays

(see VDV Guideline 454 [3])

For application in the Swiss public transport system, a standard value of 30 seconds has been defined for the delay for all systems. If a subscription contains a different value, the server is nevertheless entitled to process the subscription with a delay of 30 seconds.

6.1.9. PrognoseUngenau (prediction inaccurate) element

(see VDV Guideline 454 [3])

Implementation note:

The new value “unbekannt” (unknown) in PrognoseUngenau (prediction inaccurate) must be received, evaluated and forwarded.

6.1.10. Withdrawal of predictions/resetting of journey

(see VDV Guideline 454 [3])

Note:

The behaviour regarding withdrawing predictions by setting PrognoseMoeglich=false (prediction possible = false) was changed in VDV Guideline 454, version 2.1. Now only prediction times are reset to the target times; other changes such as route changes, track changes, formation changes, etc. remain. If the entire journey needs to be reset to target, the new FahrtZuruecksetzen (reset journey) flag must be set to value “true”. PrognoseMoeglich=false (prediction possible = false) in combination with FahrtZuruecksetzen=true (reset journey = true) produces the old behaviour.

(See also section 5.2.2)

6.1.11. Actual arrival and departure times

(see VDV Guideline 454 [3])

Note: Specifying Ankunftstatus and Abfahrtstatus =Real (arrival and departure status = real) does not provide any information as to whether a vehicle has effectively stopped at a stop or just travelled through. The Durchfahrt (travel through) element is only for planning purposes and not used to retroactively report that a train has travelled through a stop.

6.1.12. Journey cancellations

(see VDV Guideline 454 [3])

In the case of **actual journeys that have been cancelled** (AUS service), at least one <IstFahrt> (actual journey) must be sent with the following properties:

- the <FaelltAus> (cancelled) element has value true
- the <Komplettfahrt> (complete journey) contains the value true

All stops for the last complete journey before the cancellation message must be specified (see table below).

In the event of a cancellation, all stops from the “Cancellation message” column must be delivered:

Initial message	Complete journey	Complete journey	Cancellation message (as complete journey)
Stop A	Stop A	Stop A	Stop A
Stop B	Stop B	Stop B	Stop B
Stop C	Stop C	Stop C	Stop C

Initial message	Complete journey	Complete journey	Cancellation message (as complete journey)
Stop D	Stop D	Stop D	Stop D
Stop E	Stop E		
Stop F			

This should provide the data recipients with as much information on the cancelled journey as possible. This is especially practical for matching (if no REF-AUS data is available) and for data recipients that do not have a period timetable or other target data basis.

The same key that was specified to identify the journey must be used. In the Swiss public transport system, the FahrtID (journey ID) is what must be specified to identify the journey in this case. Optionally the passenger-relevant start and end stops can also be specified within the <FahrtStartEnde> (journey start end) element.

Note:

- The cancellation of a journey that has already started never results in a total cancellation/journey cancellation; instead it only results in a partial cancellation or a route change.
- In the Swiss public transport system, all stops must always be included in an initial message (as a complete journey), even in the case of a cancellation.

Partial cancellations are route changes and are therefore described in section 6.1.6.

6.1.13. Additional journeys

In the case of additional actual journeys (AUS service) (e.g. special event trains), the <Zusatzfahrt> (additional journey) element from ITCS is set to true. Additional journeys are always communicated in the initial message as a complete run (<Komplettfahrt> = true) (complete journey = true).

The FahrtID (journey ID) for the additional journey must always be unique within the operating day.

6.1.14. Implementation for rail applications

(see VDV Guideline 454 [3])

6.1.15. Assurance of plausible predictions

(see VDV Guideline 454 [3])

6.2. Connection information

(see VDV Guideline 454 [3])

7. Glossary

(see VDV Guideline 454 [3])

8. English alias designation

(see VDV Guideline 454 [3])

9. Annex: Transmitting prediction quality

(see VDV Guideline 454 [3])

10. Annex: Value lists (ENUM)

(see VDV Guideline 454 [3] with the exception of the following sections).

10.1. FoFahrzeugTyp

(see VDV Guideline 454 [3])

10.2. FoFahrzeugAusstattungsCode

(see VDV Guideline 454 [3])

10.3. FoSprachCode

(see VDV Guideline 454 [3])

10.4. FoTechnischesAttributCode

(see VDV Guideline 454 [3])

10.5. FoAenderunsCode & FoAenderungsCodeAmHalt

(see VDV Guideline 454 [3])

Implementation note:

Data platforms must receive and forward the new values FehlendeRollstuhlplaetze (missing wheelchair space) and FehlendeNiederflurwagen (missing low floor coach). The following applies for all other systems: the new values FehlendeRollstuhlplaetze (missing wheelchair space) and FehlendeNiederflurwagen (missing low floor coach) must only be sent, received and evaluated in connection with the formations. If the new values are received, an XSD validation error must not be triggered.

10.6. FoZustandsCode

(see VDV Guideline 454 [3])

10.7. FoOrientierung

(see VDV Guideline 454 [3])

10.8. FoFahrtrichtung

(see VDV Guideline 454 [3])

KIDS working group

(Kundeninformationsdaten-Schnittstellen im öV-Schweiz) (customer information data interfaces in the Swiss public transport system)

10.9. ProduktID

See section 0.

10.10. VerkehrsmittelText

See section 0.

10.11. ServiceAttribute (addition for VDV-RV 454)

Attributes and notes (see [6], section 9) are transmitted via ServiceAttribute (service attributes). The following values are defined in the Swiss public transport system:

Name of the ServiceAttribute (service attribute)	Meaning of value	Note
NF	Low floor	Phase 1, for date see list of implementation deadlines
PH	No low floor	Phase 1, for date see list of implementation deadlines
(... to be defined by INFO+)	Autonomous and spontaneous access for manual and electric wheelchairs	Phase 2, for date see list of implementation deadlines
(... to be defined by INFO+)	Access for manual and electric wheelchairs with advance notice	Phase 2, for date see list of implementation deadlines
(... to be defined by INFO+)	Limited access for manual and electric wheelchairs	Phase 2, for date see list of implementation deadlines
(... to be defined by INFO+)	No access for manual and electric wheelchairs	Phase 2, for date see list of implementation deadlines
Z	With surcharge	Phase 2, for date see list of implementation deadlines
TX	Taxi	Phase 2, for date see list of implementation deadlines
TT	Tilting technology	Phase 2, for date see list of implementation deadlines

Clarification: ServiceAttribute (service attributes) NF and PH are to be considered independent, so that NF = no does not automatically mean a high floor.

ServiceAttribute value	Meaning	Note
NF = true	Low floor	
NF = false	No low floor	Does not mean high floor
NF missing	No information concerning low floor	Does not mean high floor
PH = true	High floor	
PH = false	No high floor	Does not mean low floor

PH missing	No information concerning high floor	Does not mean low floor
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11. Annex: XML examples

(see VDV Guideline 454 [3])