

VDV implementation rules 453 – Swiss public transport system

Based on VDV Guideline 453 version 2.6

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Change history from V 1.0 to 1.1

Section	Change	Editor	Date
Sect. 1.1	The implementation rules V1.1 support the new VDV Guideline 453 V2.4 dated July 2015	KIDS working group	
Sect. 1.2.3	Mandatory fields: specifying mandatory fields without a value is not permitted in the Swiss public transport system Optional fields: resetting optional fields by omitting the value is allowed.	KIDS working group	
Sect. 5.1.4.2	Subscription data can be retransmitted in different data packets in succession. Include as much detail as possible.	KIDS working group	
Sect. 1.4	DIDOK stop list [4] was adopted as reference for stops and transport companies (business organisation numbers) in implementation rules.	KIDS working group	
Sect. 6.1.5	The <code>FahrtID</code> (journey ID) element was defined as mandatory (required for unique ID and referencing of journeys) Uniform format in Swiss public transport system for <code>FahrtBezeichner</code> (journey identifier) defined: [UIC country code]:[Business organisation number]:[Journey reference] <code>FahrtBezeichner</code> (journey IDs) for the same journey must match in VDV453 and VDV454 services.	KIDS working group	
Sect. 6.1.6.1	Uniform format in Swiss public transport system for <code>LinienID</code> (line ID) defined: [UIC country code]:[business organisation number]:[Technical line key] or [Transport number]	KIDS working group	
Sect. 6.2.4.1.1	Uniform delay of 30 seconds across all systems in Swiss public transport.	KIDS working group	

Change history from V 1.1 to 1.3

Section	Change	Editor	Date
	Reference [5] added	C. Heimlicher	
	Content deleted by link to section in text. <code>DatensatzAlle=true</code> (Dataset all = true) redefined in section 4.1.4.2.1.	J. Wichtermann	
	Text added: The data supplier can decide whether it wants to use the <code>WeitereDaten</code> (more data) mechanism or not.	D. Rubli	

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Section	Change	Editor	Date
	New section included from VDV Guideline 453.	J. Wichtermann	
	Section revised in order to harmonise transport. In particular, the transport category sources were replaced by transport categories and the table was added.	C. Heimlicher	
	Section expanded in order to harmonise transport and table added.	C. Heimlicher	
	New section included from VDV Guideline 453. The subsequent sections shift in numbering.	J. Wichtermann	
	New elements from VDV Guideline 453: <code>AnkunftssteigText</code> and <code>AnkunftsSektorenText</code>	J. Wichtermann	
	Transport category sources replaced by transport categories	C. Heimlicher	
	New elements from VDV Guideline 453: <code>VonRichtungsText</code> , <code>AnkunftszeitASBPlan</code> , <code>HaltID</code> , <code>HaltepositionsText</code> and <code>FahrtInfo</code> .	J. Wichtermann	
	Just updated added from VDV Guideline 453	J. Wichtermann	
	New elements from VDV Guideline 453: <code>FahrtBezeichnerText</code> , <code>AnkunftssteigText</code> , <code>AbfahrtssteigText</code> , <code>AnkunftsSektorenText</code> , <code>AbfahrtsSektorenText</code> , <code>Einsteigeverbot</code> , <code>Aussteigeverbot</code> and <code>Durchfahrt</code>	J. Wichtermann	
	New elements from VDV Guideline 453: <code>VonRichtungsText</code> , <code>AnkunftszeitAZBPlan</code> , <code>AbfahrtszeitAZBPlan</code> , <code>HaltID</code> , <code>HaltepositionsText</code> , <code>FahrtInfo</code> .	J. Wichtermann	
	Section from VDV Guideline 453 added.	J. Wichtermann	
	Section from VDV Guideline 453 added.	J. Wichtermann	
	Section from VDV Guideline 453 added.	J. Wichtermann	
	The structure for <code>FahrtInfo</code> (journey info) and the <code>ProduktID</code> (product ID) and <code>BetreiberID</code> (operator ID) elements are now mandatory.	J. Wichtermann	
	Preview time added.	J. Wichtermann	

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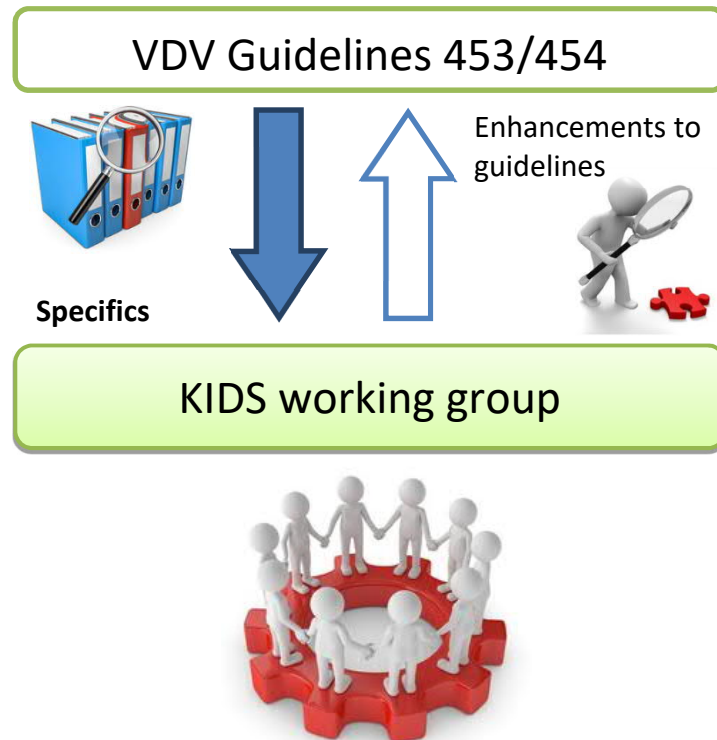
Version	Date	Status
		n/a
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		Translation from German



1. Preliminary remarks

Based on the official VDV Guideline 453 [1] (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 453”.

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



Implementation rules (VDV-RV 453) as shared basis across the Swiss public transport system

Figure 1: Interrelations between KIDS and VDV

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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1.1. Supported versions

The currently supported version of VDV Guideline 453 “Actual data interface – Ensuring connections – Dynamic passenger information – Visualisation – General messaging service” is **version 2.6**[1].

The XSD used to validate the XML messages is XSD **version 2017.c** (without Siri)[2].

1.2. Document structure and scope

1.2.1. Scope

These implementation rules for the Swiss public transport system (VDV-RV 453) are a supplement to the official VDV Guideline 453 and describe only the deviations, changes and specifics to this guideline. This document therefore does **not** replace the official VDV Guideline 453 and therefore does not contain the complete information needed to implement or understand the VDV453 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 does not specify described points and may also contain explicit deviations and enhancements to VDV-RV 453. These bilateral or multilateral specifications (hereinafter referred to as Partner2Partner specifications) should always refer to this VDV-RV 453 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 chapter structure of VDV Guideline 453 [1] shall be adopted consistently in this document, **starting with Section 2**.

In detail, this means that:

- The official VDV Guideline 453 generally applies. The statements and definitions set out in [1] are not repeated in this document¹.
- A **blank section** in this document means that the original VDV Guideline applies without exception or additional stipulations. The section is marked as follows: “(see VDV Guideline 453)”
- 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.
- The official VDV Guideline 453 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 entire Swiss public transport system as a rule², are described in the relevant sections.

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

If an explanation or addition is necessary and does not match the specified chapter structure, a separate section will be added at the end of the section level in question, which always has the

¹ An exception to this rule will be made if a brief description of the normal case defined in VDV Guideline 453 is required or practical in order to understand a following text or the general context.

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

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extra text “(addition for VDV-RV 453)” in the title. This section (including any subsections) does not correspond to the official VDV Guideline 453 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 453, the value in this document is shown in red.

Table 1: Mandatory and optional fields

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>

1.3. Binding nature

This document describes how VDV Guideline 453 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 not need to agree upon metadata defined either here or in the official VDV specification.



1.4. Referenced documents

- [1] German Association of Transport Companies (VDV)
VDV Guideline 453, Actual data interface – Timetable information, version 2.6, Cologne (Germany), 2018
- [2] German Association of Transport Companies (VDV)
XML schema VDV453_incl_454_V2017.c.xsd (version: “2017.c”), Cologne (Germany), 2018
- [3] German Association of Transport Companies (VDV)
VDV Guideline 454, Actual data interface – Timetable information, version 2.2, Cologne (Germany), 2018
- [4] Swiss Federal Office of Transport (FOT)
Stops (Didok list), Bern (Switzerland)
- [5] Direkter Verkehr Schweiz (Swiss Direct Transport – ch-direct)
Basic document for the harmonisation of transport, Bern (Switzerland), 2017



2. Introduction

2.1. General objective

This document, together with the official VDV Guideline 453 [1], 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 platforms”.

Both documents when taken together describe in detail:

- What data can 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 exchanged (formats, communication protocols and other considerations)
- How data is to be interpreted if this is not clear from VDV Guideline 453 or if its use deviates from VDV Guideline 453

2.1.1. Transport (addition for VDV-RV 453)

The term “*transport*” used at different points in this document refers to all means of transport relevant to customer information (e.g. train, bus, tram, boat, funicular, etc.) An individual trip on a means of transport is called a “*journey*”.

2.2. Objectives

(see VDV Guideline 453)

2.3. Overall concept

(see VDV Guideline 453)

3. Introduction and basic definitions

(see VDV Guideline 453)

4. Architecture

(see VDV Guideline 453)



5. “Basic infrastructure” interface description

5.1. Subscription procedures

5.1.1. Overview

(see VDV Guideline 453)

5.1.2. Setting up subscriptions

There are some events that lead to all of the subscriptions set by a client needing to be set up again.

Client subscriptions are set up again in the following cases:

- After the client has been restarted (e.g. after a system failure or after client maintenance work), all subscriptions that the client set on the server previously need to be deleted internally. All subscriptions must then be set up again by the client.
- After the server that the client uses to determine that the server start time has been updated in the status responses is restarted.
- At a time specified by the partner in question (e.g. early morning outside of normal office hours). The reason for this may be the daily initialisation of the system or a subscription refresh. It is a good idea to refresh subscriptions on a daily basis. To avoid problems caused by daylight saving time, a time after 3 a.m. is considered optimal for this process.

5.1.2.1. Subscription query (*AboAnfrage*)

(see VDV Guideline 453)

Client side

Before the subscriptions for a service are first set up, a *StatusAnfrage* (status query) is sent to the partner system. If a positive *StatusAntwort* (status response) is received, indicating that the partner is ready to send data, the subscriptions are set up on the server side.

If the server has data once the subscriptions are set up, this must be signalled via a *DatenBereitAnfrage* (data ready query, see [1], sect. 5.1.3.1) or via the *StatusAntwort* (*DatenBereit* = true) (status response, data ready = true). As a response to the positive *DatenBereit* (data ready) message, the client requests the new data by means of a *DatenAbrufenAnfrage* (data query).

Server side

Since multiple subscriptions can be set up within one *AboAnfrage* (subscription query) but just one general error message is provided for the entire *AboAnfrage* (subscription query) process, the following behaviour occurs in the event of an error:

- To receive a (potential) error message per subscription, a subscription must be set up individually, i.e. one *AboAnfrage* (subscription query) per subscription.
- If an error occurs when setting up or deleting a subscription, the subscription will not be set up or deleted. The partner receives a corresponding error message, which describes the problem in detail.
- If multiple subscriptions are set or deleted within one *AboAnfrage* (subscription query) and an error occurs, the query as a whole will be rejected, i.e. no subscription in this query will be

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created or deleted. In this case the partner will receive an error message that refers to the subscription for which the first error occurred.

5.1.2.2. Subscription confirmation (*AboAntwort*)
(see VDV Guideline 453)

5.1.3. Providing data
(see VDV Guideline 453)

5.1.4. Calling up data
(see VDV Guideline 453)

5.1.4.1. Requesting a data transfer (*DatenAbrufenAnfrage*)
(see VDV Guideline 453)

5.1.4.2. Transferring data (*DatenAbrufenAntwort*)
(see VDV Guideline 453)

Subscription data can be divided across multiple packets using the *WeitereDaten* (more data) mechanism. The data supplier can decide whether it wants to use the *WeitereDaten* (more data) mechanism or not.

5.1.4.2.1. Handling *Datensatzalle* (dataset all)
(see VDV Guideline 453)

The following elements represent the most granular units of data for the different services, which must be sent in full within a data packet:

Table 2: DatensatzAlle

Service	Granularity (smallest unit)
REF-ANS	ASBFahrplan
ANS	ASBFahrplanlage / ASBFahrtLoeschen / HaltepositionsAenderung / WartetBis / AbbringerFahrtLoeschen
REF-DFI	AZBFahrplan
DFI	AZBFahrplanlage / AZBFahrtLoeschen
REF-AUS	Linienfahrplan
AUS	IstFahrt

5.1.5. Deleting data subscriptions (AboLoeschen/Alle)
(see VDV Guideline 453)

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5.1.6. Resetting after interruption

(see VDV Guideline 453)

5.1.7. Resetting after crash

(see VDV Guideline 453)

5.1.8. Alive handling

(see VDV Guideline 453)

5.1.8.1. Query (`StatusAnfrage`)

(see VDV Guideline 453)

5.1.8.2. Response (`StatusAntwort`, `Status`)

(see VDV Guideline 453)

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).

5.1.8.3. `ClientStatusAnfrage`

(see VDV Guideline 453)

5.2. HTTP binding

5.2.1. Procedure

XML namespace: An explicit namespace (e.g. “`vdv453ger`”) is not used, pursuant to the official VDV Guidelines 453.

XML header: The XML header must be completed as per HTTP specification RFC 2616.

5.2.2. Character set

(see VDV Guideline 453)

5.2.3. Service IDs

(see VDV Guideline 453)

5.2.4. Query URL

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.

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Server side

The following messages are responded to or sent by a server:

Table 3: Server messages

Query ID	Responded to by server	Sent by server
status.xml	✓ StatusAntwort	✗
Clientstatus.xml	✗	✓ ClientStatusAnfrage
aboverwalten.xml	✓ AboAntwort	✗
datenbereit.xml	✗	✓ DatenBereitAnfrage
datenabrufen.xml	✓ DatenAbrufenAntwort	✗

Client side

The following messages are responded to or sent by the client:

Table 4: Client messages

Query ID	Responded to by client	Sent by client
status.xml	✗	✓ StatusAnfrage
Clientstatus.xml	✓ ClientStatusAntwort	✗
aboverwalten.xml	✗	✓ AboAnfrage
datenbereit.xml	✓ DatenBereitAntwort	✗
datenabrufen.xml	✗	✓ DatenAbrufenAnfrage

5.2.5. Error handling

(see VDV Guideline 453)

5.3. Security

Both sides are responsible for implementing protective measures (e.g. DMZ, firewall, etc.) Appropriate security components must be used here. The demilitarised zones (DMZs) of the public transport partners form the infrastructure for the setup of a VPN and the routing of HTTP requests. The level of security desired or required for the respective connection must be agreed upon bilaterally by the partners.



6. “Specialist services” interface description

6.1. General stipulations

The following sections describe the metadata required for data exchange and provide more detail for VDV Guideline 453 [1].

Metadata that is neither defined in this document nor in the official VDV Guideline must be agreed upon and defined by the relevant partners.

6.1.1. Operating days

The operating day for a journey defines its relationship to a specific date:

- The operating days **must** match the days on the period timetable (number of travel days).
- The operating day usually matches the date of departure for the journey at the start operating point according to the timetable.
- For journeys that start after midnight, the operating day may be the previous day.
- The timetable planner can assign a journey to one or the other day based on operational needs. There are no fixed rules in this case.
- A journey always retains its assigned operating day regardless of the duration of the journey.

6.1.2. Date and time format

(see VDV Guideline 453)

The following must also be observed in particular:

- The time format must match the UTC definition. Expressions such as 25:30 as a synonym for 01:30 (as some planning systems allow) are **not** permitted.
- Transitions between days must be identified by changing the date in UTC format (e.g. 2014-07-09T23:55:00 => 2014-07-10T00:15:00)

6.1.3. Control point ID

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 the 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.

<System ID>_<Platform ID>

It is a good idea to specify the control point ID in lowercase letters.

The system ID can be freely selected. The *underscore* sign “_” must not be used within the system ID, however. 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.

Table 5: The following platform IDs are defined as standard

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Platform	Platform ID
Development	entw
Test	test
Integration	int
Production	prod

If the platform IDs defined here are not sufficient, 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.

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

6.1.4. Location references

Location identifiers

The location identifiers for the ANS and DFI services are based on the respective connection areas (ANS) and display areas (DFI) for which a subscription is set up.

Table 6: Location references in the specialist services

Service	Location identifier	Key name
Ensuring connections	Connection area	ASBID
Dynamic passenger information	Display area	AZBID

For technical reasons, different prefix codes are given to the subscription queries for individual services:

- a leading “**Z**” for the AZBID of the DFI service
- a leading “**S**” for the ASBID of the ANS service

In both cases, what follows is the two-digit UIC country code and the five-digit UIC code (without check digit) for specifying the stop in question. If there are multiple connection/display areas within a stop, an additional two-digit code can optionally be used in order to identify the precise connection/display area within the stop. If stops do not need to be broken down into more detail, the two-digit area code is not specified. The resulting code for the location reference is therefore usually eight digits, but can also be ten digits when more detail is provided.

The UIC country codes and UIC stop codes for location references also apply to bus stops, tram stops, etc. They are based on the Swiss-wide operating point list (master data in DiDok list [4]).

If one display/connection area has stopping points for multiple stops (different UIC stopping point codes), then the partners in question will agree on one UIC stopping point code. In this case it is a good idea to use the smaller UIC stopping point code each time.

AZBID composition:

Z + UIC country code + UIC code + (display area code)

Example for Zurich main station: Z8503000, Z85030001

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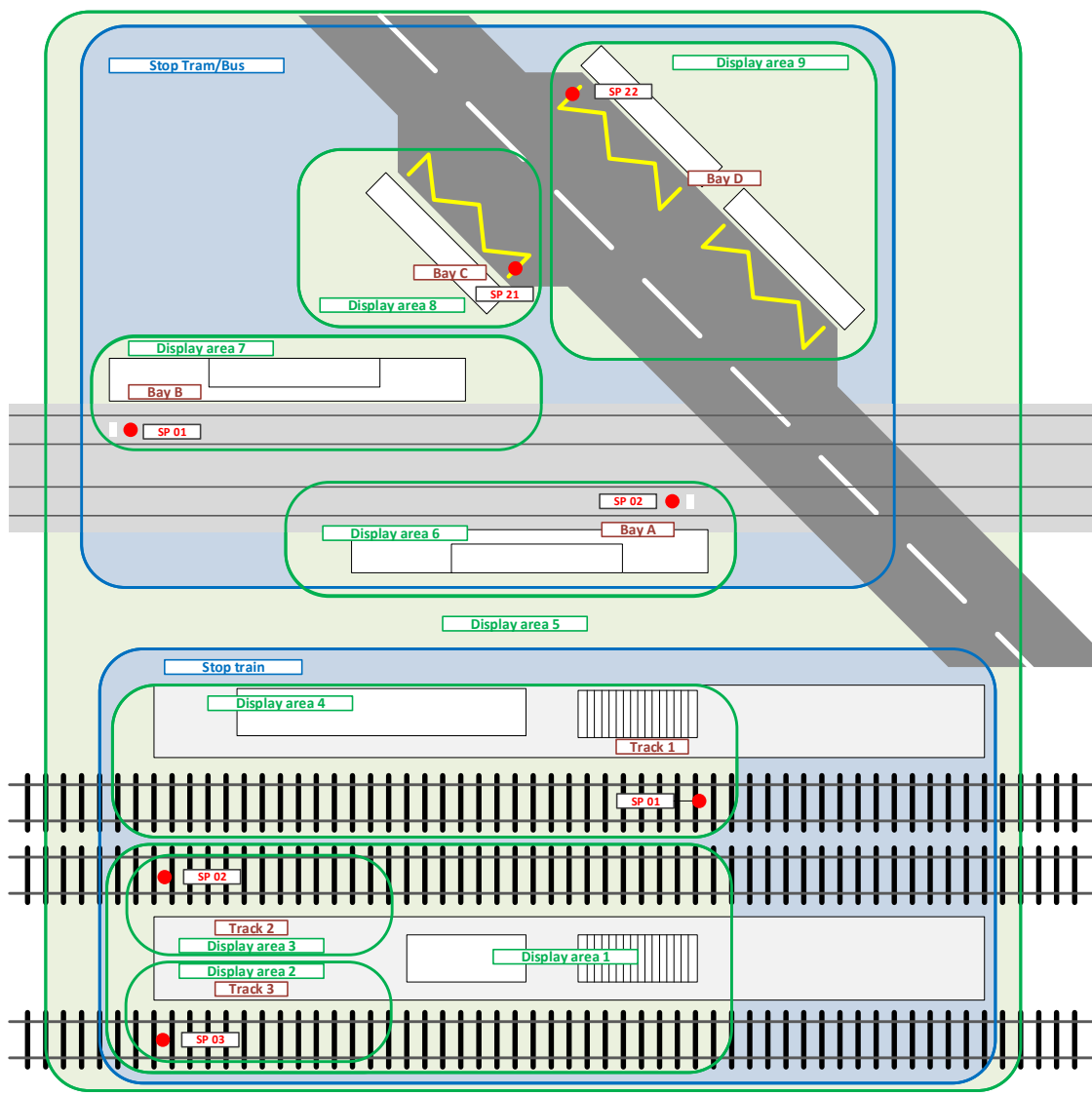


Figure 2: Overview of display areas

Table 7: Key of Figure 2

SP	Stopping point (stop point/bay/mast). Smallest unit in local public transport data model
ST	Stop: Corresponds to one or more (multiple operations use the same stop) operating points from the (DiDok) stop list.
SP22	Double bus stop, where two buses can stop one behind the other at the same time (modelled as just one stop)
Track/Bay	Customer-relevant designation of the boarding area (track = number; stop point = letter)

Table 8: Explanations on Figure 2 of display areas

Display area 1	Z850123401 (contains rail SP 02 and SP 03): Shows trains for tracks 2 and 3, including information on which track the train is travelling on.
Display area 2	Z850123402 (contains rail SP 03): Shows trains for the corresponding track.

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Display area 3	Z850123403 (contains rail SP 02): Shows trains for the corresponding track.
Display area 4	Z850123404 (contains rail SP 01): Shows trains for the corresponding track.
Display area 5	Z850123405 (contains rails HP 01, HP 02 and HP 03 as well as tram HP 01 and HP 02 and bus HP 21 and HP 22): Shows all trains, trams and buses for the two "Bahn" (rail) and "Tram/Bus" stops, including track number or stop letter.
Display area 6	Z850567806 (contains tram HP 02): Shows tram for stop A.
Display area 7	Z850567807 (contains tram HP 01): Shows tram for stop B.
Display area 8	Z850567808 (contains bus HP 21): Shows buses for stop C.
Display area 9	Z850567809 (contains bus HP 22): Shows buses for stop D.
Display area stop train	Z8501234 (contains all rail HPs): Shows trains for tracks 1, 2 and 3
Display stop Tram/Bus	Z8505678 (contains all tram and bus HPs): Shows trams and buses for stops A–D

ASBID composition:

S + UIC country code + UIC code + (connection area code)

Example for Zurich main station: S8503000, S850300003

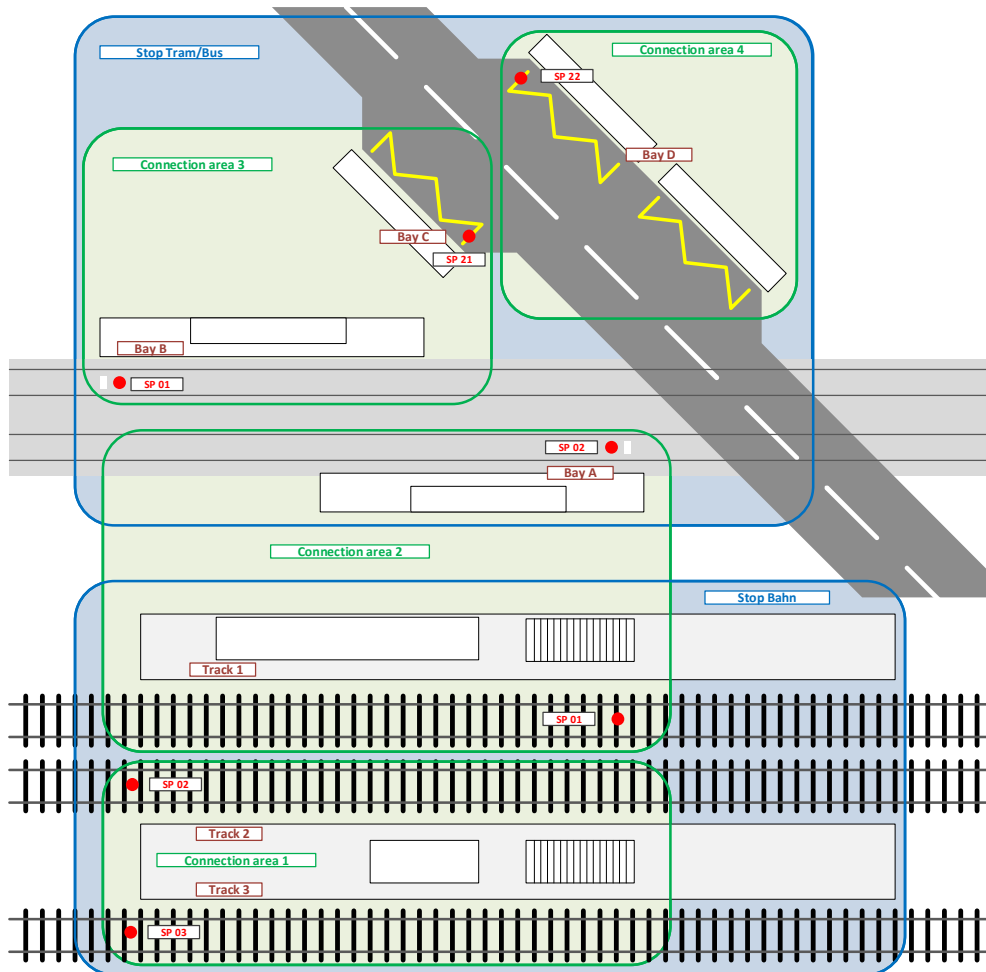


Figure 3: Overview of connection areas

Table 9: Key of Figure 3

SP	Stopping point (stop point/bay/mast). Smallest unit in local public transport data model
ST	Stop: Corresponds to one or more (multiple operations use the same stop) operating points from the (DiDok) stop list.
SP22	Double bus stop, where two buses can stop one behind the other at the same time (modelled as just one stop)
Track/Bay	Customer-relevant designation of the boarding area (track = number; stop point = letter)

Note:

Connection area = is provided in some systems for the definition of footpath times.

Table 10: Explanations on Figure 3 of connection areas

Connection area 1	S850123401 (contains rail SP 02 and SP 03)
Connection area 2	S850123402 (contains rail SP 01 and tram SP 02)
Connection area 3	S850567803 (contains tram SP 01 and bus SP 21)

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Connection area 4	S850567804 (contains bus SP 22)
Connection area stop train	S8501234 (contains all rail SPs)
Connection area Tram/Bus	S8505678 (contains all tram/bus SPs)

6.1.5. Journey reference (*FahrtID*)

The *FahrtID* (journey ID) must be specified (applies to all VDV453 and VDV454 services) and is used to uniquely identify a transmitted journey and compare it to existing data on this journey.

The *FahrtID* (journey ID) element consists of the two subelements *FahrtBezeichner* (journey identifier) and *Betriebstag* (operating day):

Table 11: Structure of *FahrtID*

Element	Comments	Field
- <i>FahrtBezeichner</i>	Unique journey identifier (see below)	Mandatory
- <i>Betriebstag</i>	(see section 6.1.1)	Mandatory

The *FahrtBezeichner* (journey identifier) is mandatory and must be expressed in the format described below. It must always be unique within an operating day:

<i>FahrtBezeichner</i> = [UIC country code]:[Business organisation number]:[journey reference]

Table 12: Components of *FahrtID*

Identifier	Meaning	Example
UIC country code	Country code of the transport company (as per UIC) running the journey. Max. two-digit numerical value	85
Business organisation number	Number of the business organisation of a transport company running the journey, as per the FOT DiDok list [4] or reference for the country in question. (Synonym: transport company code) Number should not start with a leading zero. Max. six-digit alphanumerical value (permissible characters are { A-Z, a-z, 0-9, _ }). The business organisation number must be identical in the <i>FahrtBezeichner</i> (journey identifier) and <i>LinienID</i> (line ID) elements. If the numbers are different, the journey may not be able to be processed (inconsistencies).	37



Identifier	Meaning	Example
Journey reference	<p>Open key that can be defined by the data producer or planning transport company itself in order to ensure that a journey is unique.</p> <p>The journey reference must be unique within the business organisation of a transport company (business organisation number) and must refer to one journey per <i>Betriebstag</i> (operating day).</p> <p>Max. 50-digit alphanumerical value permitted. Permissible characters are { A-Z, a-z, 0-9, _ , - }.</p> <p><i>Note:</i> The colon: is a special separator and is therefore explicitly <u>not</u> permitted in this field (except for rail transport).</p>	6624325-234-001_A
	<p><u>Composition of <i>FahrtReferenz</i> (journey reference) for rail transport</u></p> <p>For compatibility reasons the following format is used in rail transport for the “journey reference” field:</p> <p><i>FahrtReferenz</i> = [Transport journey number]:[Extended reference]</p> <p>Permissible characters are { A-Z, a-z, 0-9, _ , - }.</p> <p><i>Note:</i> The colon : is a special separator and is therefore explicitly <u>only</u> permitted in this field at the point defined above (exclusively for rail transport).</p>	63003:001
	<p>Transport journey number</p> <p>Must be unique within the business organisation of a transport company (business organisation number) for one operating day. Multiple journeys within one day must be identified by different transport journey numbers.</p> <p>Max. five-digit numerical value permitted.</p>	63003
	<p>Extended reference</p> <p>Alphanumerical technical key that can be defined by the planning transport company itself in order to ensure that a journey is unique. This value is also used for identification if the journey cannot be unique using the key elements described above alone.</p> <p>If this key is not used for differentiation, the placeholder “000” must be used.</p> <p>Permissible characters are { A-Z, a-z, 0-9, _ , - }.</p>	001

The *FahrtBezeichner* (journey identifier) must match in the VDV453/454 services.

Examples of a correctly formatted *FahrtBezeichner* (journey identifier):

SBB: "85:11:21814:001"
 NAV: "85:846:241291-00319-1"
 International: "80:678:439244-DR24-434-223_01"

Example of FahrtID (journey ID):

```
<FahrtID>
    <FahrtBezeichner>85:11:21814:001</FahrtBezeichner>
    <Betriebstag>2012-05-14+02:00</Betriebstag>
</FahrtID>
```

6.1.6. Line and direction references

6.1.6.1. Line reference (addition for VDV-RV 453)

LinienID (line ID):

The LinienID (line ID) is a purely technical key not used on the customer display.

Formatting in the Swiss public transport system (except rail transport):

In the Swiss public transport system (except rail transport), the LinienID (line ID) must be provided in the following format for all VDV453 and VDV454 services:

[UIC country code]:[Business organisation number]:[Technical line key]

Identifier	Meaning	Example
UIC country code	Country code of the transport company (as per UIC) running the journey. Max. two-digit numerical value	85
Business organisation number	Number of the business organisation of a transport company running the journey, as per the FOT DiDok list [4] or reference for the country in question. (Synonym: transport company code) Number should not start with a leading zero. Max. six-digit alphanumerical value (permissible characters are { A-Z, a-z, 0-9, _ }). The business organisation number must be identical in the FahrtBezeichner (journey identifier) and LinienID (line ID) elements. If the numbers are different, the journey may not be able to be processed (inconsistencies).	37
Technical line key	Technical key for the line. The line key must be unique within the business organisation number. Alphanumerical value (permissible characters are {A-Z, a-z, 0-9, _ }).	1250_2

Table 13: LinienID

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Note:

With the formatting described above, the `LinienID` (line ID) itself is uniquely defined in the Swiss public transport system across countries and business organisations.

Recommendation:

The KIDS working group recommends using a unique `LinienID` (line ID) based on the above format when transmitting the period timetable (e.g. HRDF), the day target timetables (REF-AUS) and also when transmitting changes during a day (AUS).

The aim is to be able to avoid `LinienID` (line ID) mappings in the information systems in future. In the Hafas raw data format (HRDF), HaCon explicitly stipulates the use of the `LinienID` (line ID) in the line key for this purpose from format version 5.40.0.

Table 14: Example for specifying the `LinienID` (line ID) in VDV454 and HRDF (from 5.40.0)

VDV454	HRDF (from version 5.40.0)
<code>LinienID= "85:827:2"</code>	<code>Line key = "1234567K85:827:2"</code>

Comment on migration path:

During transition the `LinienID` (line ID) may still be operated in accordance with existing metadata agreements in terms of BDB453 services. The format of the `LinienID` (line ID) should be converted in the VDV453 service by the transport company within a reasonable amount of time. When the VDV454 services are used at the latest, the `LinienID` (line ID) must be transmitted identically in the format defined above for all services used.

Formatting of `LinienID` (line ID) in rail transport:

In rail transport, the `LinienID` (line ID) is handled differently for the VDV453 and VDV454 services until further notice. In the VDV453 services the metadata agreed upon between the partners is transferred. In the VDV454 services the transport journey number for the journey in question is transmitted in the `LinienID` (line ID) element.

`LinienText` (line text):

The `LinienText` (line text) element is customer-relevant and must therefore be forwarded to the respective display systems.

6.1.6.2. Direction reference (addition for VDV-RV 453)

The `RichtungsID` (direction ID) defines the direction of a journey. This can change from operating point to operating point during the journey³. The `RichtungsID` (direction ID) can therefore vary from stop to stop for a journey. It is a good idea to use a `RichtungID` (direction ID) that is meaningful and easy for human observers to interpret⁴.

³ While the `RichtungsID` (direction ID) remains constant for a journey in linear local transport, it may change multiple times during the journey in rail transport.

The `RichtungsID` (direction ID) is not intended for passenger information. However it should have a structure that is meaningful and easy for human observers to interpret. This makes it easier to understand the metadata and analyse log files.

⁴ Among other things, this makes it easier to understand the metadata and analyse log files.

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6.1.7. Product types

The transport category is communicated as the ProduktID (product ID) in the Swiss public transport system (e.g. “boat”, “bus”, “train”, etc.)

When specifying the ProduktID (product ID), the data-producing transport company must ensure that the transmitted transport categories match the transport categories used in the timetable collection in the Swiss public transport system (INFO+).

The list of valid transport categories is in document [5]. The following table shows the status as of 31/12/2017:

Table 15: Transport category

Value	Meaning of value	Comments
Train	Individual or connected rail vehicles	
Tram	Public local passenger transit run on electricity on rails in a city transport network	
Metro	Underground railway or city railway	New
Cog railway	Transport on rails, converting the driving force into motion using a toothed gearwheel and cog rail	New
Bus	Short for omnibus or autobus	
Funicular	Transport on rails, moved by a cable	New
Closed cable car	Cable car with closed cabins Aerial tramway or gondola lift	New
Chair lift	Cable car with open seats	New
Lift	Vertical cable car	New
Boat	A larger watercraft	

Table 16: The following transport category (see [5]) is no longer transmitted in the ProduktID (product ID) element

Value	Meaning of value	Comments
Rope conveyor	Cabins, seats or transport containers suspended on a conveyor cable and moved along a circuit	Deleted

Note:

- The values for the transport category may change at short notice and sometimes even without notice. Recipient systems should therefore be able to respond to such changes and must not discard data with unknown offer categories.
- All new values must be added to the recipient system in a first phase before they are transmitted from supplier systems. After all supplier systems have been converted, the “deleted” values can be removed from the recipient systems.

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- The transport category is being converted in accordance with the “Roadmap SKI”.
- The value “rope conveyor” in the VDV Guideline is not used in the Swiss public transport system.
- Data from abroad is not subject to the implementation rules, so this data may contain different values. These must be passed on unchanged; they are not converted.
- Depending on the expansion of VDV Guideline 453 (anticipated in November 2018) concerning these predefined product types, the table in the implementation rules may be removed again.

6.1.8. Diversions

(see VDV Guideline 453)

6.1.9. Service attributes

Attributes and notes (see [5], section 9) are transmitted via service attributes. The following values are defined in the Swiss public transport system:

Table 17: Attributes and notes

Name of service attribute	Meaning of value	Comment
NF	Low floor	Phase 3, implementation between interested partners
PH	No low floor	Phase 3, implementation between interested partners
(... to be defined by INFO+)	Autonomous and spontaneous access for manual and electric wheelchairs	Phase 3, implementation between interested partners
(... to be defined by INFO+)	Access for manual and electric wheelchairs with advance notice	Phase 3, implementation between interested partners
(... to be defined by INFO+)	Limited access for manual and electric wheelchairs	Phase 3, implementation between interested partners
(... to be defined by INFO+)	No access for manual and electric wheelchairs	Phase 3, implementation between interested partners
Z	With surcharge	Phase 3, implementation between interested partners
TX	Taxi	Phase 3, implementation between interested partners
TT	Tilting technology	Phase 3, implementation between interested partners

Clarification:

Service attributes NF and PH are to be considered independent, so that no NF does not automatically mean a high floor.

Table 18: Low and high floor

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Service attribute value	Meaning	Comment
NF exists	Low floor	
NF missing	No information concerning low floor	Does not mean high floor
PH exists	High floor	
PH missing	No information concerning high floor	Does not mean low floor

6.1.10. Error in technical shift

(see VDV Guideline 453)

6.1.11. Optional fields

(see VDV Guideline 453)

6.1.12. Text for publication

(see VDV Guideline 453)

6.1.13. Stop information (addition for VDV-RV 453)

6.1.13.1. HaltepositionsText

The HaltepositionsText element describes the transport stop used by a means of transport in a display-ready form. The content of this field is publication-relevant (vehicle’s interior display, general monitor, etc.)

The official stop designation (e.g. “A” for the bus stop of the same name or “12” for the corresponding track) should be transmitted if available. If the departure location cannot be uniquely identified, the field is not transmitted.

6.1.13.2. HaltID

(see VDV Guideline 453) The element HaltID (stop ID) describes the stop, and optionally the stopping point to which a vehicle runs.

Recommendation:

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 and VDV454. 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 can be used to identify and differentiate the precise position. 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

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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).

`haltID` composition:

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

Example for Zurich main station: 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 [4]).

6.1.14. Arrivals information (`AufASB/AufAZB`) (addition for VDV-RV 453)

The two elements `AufASB` and `AufAZB` are used within a timetable system to indicate for the service in question whether a means of transport has reached the operating point in question or what the highly likely time of arrival will be:

- `AufAZB`: In the DFI service, if this field is `true`, this means that the means of transport is waiting at the operating point (i.e. passengers can board) at the specified predicted time (`AnkunftszeitAZBPrognose`).
- `AufASB`: In the ANS service, if this field is `true`, this means that the means of transport has reached the operating point (i.e. passengers can disembark) at the specified predicted time (`AnkunftszeitASBPrognose`).

The arrival (value = `true`) of a journey must be transmitted consistently and reliably, in order to ensure correct displays (customer information) and functional connections.

For the `AufASB` and `AufAZB` elements, the default is set to `false`. A missing `AufASB` or `AufAZB` element therefore indicates that the means of transport has not reached the operating point yet.

The elements are set to `true` as soon as the arrival prediction for the means of transport can be interpreted as the effective arrival time at the operating point (technically this element is set to `true` by SBB, for example, as soon as the referenced means of transport passes the home signal at the operating point in question). In this case the arrival prediction is the anticipated ACTUAL arrival time.

6.2. Ensuring connections (REF-ANS, ANS)

(see VDV Guideline 453)

6.2.1. Introduction

(see VDV Guideline 453)

6.2.2. Operational data supply and maintenance

(see VDV Guideline 453)

6.2.3. Reference data service (REF-ANS)

(see VDV Guideline 453)

6.2.3.1. Data exchange

(see VDV Guideline 453)

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6.2.3.2. Querying area timetables (AboASBRef)
(see VDV Guideline 453)

6.2.3.3. Transmitting area timetables (ASBFahrplan)
(see VDV Guideline 453)

6.2.3.3.1. Additional information on the journey (FahrtInfo)
(see VDV Guideline 453)

Table 19: The elements of FahrtInfo (journey info) have the following structure

Element	Comments	Field
FahrzeugID	see VDV Guideline 453	Optional
LinienNr	see VDV Guideline 453	Optional
UmlaufNr	see VDV Guideline 453	Optional
KursNr	see VDV Guideline 453	Optional
StartHstLang	see VDV Guideline 453	Optional
StartHst	see VDV Guideline 453	Optional
ZielHstLang	see VDV Guideline 453	Optional
ZielHst	see VDV Guideline 453	Optional
LinienfahrwegID	see VDV Guideline 453	Optional
AbfahrtszeitStartHst	see VDV Guideline 453	Optional
AnkunftszeitZielHst	see VDV Guideline 453	Optional
ProduktID	see VDV Guideline 453	Mandatory
BetreiberID	see VDV Guideline 453 Comment: “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.”	Mandatory
Betreiber	see VDV Guideline 453	Optional
ServiceMerkmal	see VDV Guideline 453	Optional
Direktruf	see VDV Guideline 453	Optional

6.2.4. Process data service (ANS)

6.2.4.1. Data exchange
(see VDV Guideline 453)

6.2.4.1.1. Update/delay
(see VDV Guideline 453)

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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.

6.2.4.2. Subscribing to connection data (Ab_oASB)

Table 20: The Ab_oASB elements have the following structure

Element	Comments	Field
Ab _o ID	(Attribute) as in VDV Guideline 453	Mandatory
VerfallZst	(Attribute) as in VDV Guideline 453	Mandatory
ASBID	AnschlussbereichsID (connection area ID) (e.g. S8506016 for operating point Oberwinterthur) See section 6.1.4	Mandatory
Fahrtfilter	as in VDV Guideline 453	Optional
Zeitfilter	Used with the following elements: See section 6.2.4.2.2	Optional
- LinienID	If the LinienID (line ID) is omitted, all lines for this operating point are subscribed. See section 6.1.6	Optional
- RichtungsID	If the RichtungsID (direction ID) is omitted, all directions for this operating point are subscribed.	Optional
- FruehesteAnkunftszeit	See section 6.2.4.2.2	Mandatory
- SpaetesteAnkunftszeit		
- Vorschauzeit	See section 6.2.4.2.2	n/a
Hysterese	as in VDV Guideline 453	Mandatory
AbbringerInfo	as in VDV Guideline 453	Optional

6.2.4.2.1. Journey-related data (*journey filter*)

(see VDV Guideline 453)

6.2.4.2.2. Time-related data (*time filter*)

Recommendation:

The SpaetesteAnkunftszeit (latest arrival time) element should occur after the subscription time up to max. 24 hours in the future. The value for the FruehesteAnkunftszeit (earliest arrival time) element can be any value in the past.

Formula: <SpaetesteAnkunftszeit> (latest arrival time) - subscription time =< 24

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Example:

In the following example supplier data for journeys on line 2, direction “train station” is subscribed for a journey (IT CS A) coming into a connection area. Only data for vehicles that according to current predictions will arrive between 15:50 and 16:10 is sent.

```
<AboAnfrage Sender="ITCSa_prod" Zst="2014-04-08T15:45:00">
  <AboASB AboID="25" VerfallZst="2014-04-08T16:10:00">
    <ASBID>S8506016</ASBID>
    <ZeitFilter>
      <LinienID>S12</LinienID>
      <RichtungsID>W-OWT</RichtungsID>
      <FruehesteAnkunftszeit>
        2014-04-08T15:50:00
      </FruehesteAnkunftszeit>
      <SpaetesteAnkunftszeit>
        2014-04-08T16:10:00
      </SpaetesteAnkunftszeit>
    </ZeitFilter>
    <Hysterese>30</Hysterese>
  </AboASB>
</AboAnfrage>
```

6.2.4.2.3. Additional information on connectors (AbbringerInfo)
(see VDV Guideline 453)

6.2.4.3. Feeder messages (Zubringernachricht)
(see VDV Guideline 453)

6.2.4.3.1. Transmitting connection data (ASBFahrplanlage)
(see VDV Guideline 453)

The stipulations of VDV Guideline 453 apply to the sending of ASBFahrplanlage elements. The following points must be taken into account in addition:

Table 21: Structure of ASBFahrplanlagen

Element	Comments	Field
ASBID	AnschlussbereichsID (connection area ID) (e.g. S8506016 for operating point Oberwinterthur) See section 6.1.4	Mandatory
FahrtID	See section 6.1.5	Mandatory
HstSeqZaehler	as in VDV Guideline 453	Mandatory
LinienID	Metadata, exclusively used for subscription. See section 6.1.6	Mandatory
LinienText	Customer-relevant line name or transport category, displayed as line name for a means of transport.	Mandatory

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Element	Comments	Field
	See section 6.1.6	
RichtungsID	Metadata, exclusively used for subscription. See section 6.1.6	Mandatory
RichtungsText	Customer-relevant destination. See section 6.1.6	Mandatory
VonRichtungsText	Customer-relevant origin of transport. See section 6.1.6	Optional
AufASB	Arrivals information (default = false) See section 6.1.14	Optional
AnkunftszeitASBPlan	as in VDV Guideline 453	Mandatory
AnkunftszeitASBPrognose	as in VDV Guideline 453	Optional
FahrtStatus	as in VDV Guideline 453	Mandatory
Umsteigewillige	as in VDV Guideline 453	Optional
ZubringerHstLang	as in VDV Guideline 453	Optional
SpaetesteAbbringerInfo	as in VDV Guideline 453	Optional
HaltID	Technical ID for a stop (track). See section 6.1.13.2	Optional
AnkunftssteigText	as in VDV Guideline 453	Optional
HaltepositionsText	Customer-relevant stop (track) for a means of transport. See section 6.1.13.1	Optional
AnkunftsSektorenText	as in VDV Guideline 453	Optional
Stauindikator	as in VDV Guideline 453	Optional
FahrtInfo	as in VDV Guideline 453	Mandatory

6.2.4.3.2. Feeder failure (ASBFahrtLoeschen)
(see VDV Guideline 453)

The reasons why a journey might be deleted are specified in [1]. Otherwise the same restrictions and special considerations as for transmitting the ASBFahrplanlage apply in principle.

Table 22: Structure of ASBFahrtLoeschen

Element	Comments	Field
ASBID	AnschlussbereichsID (connection area ID) (e.g. S8506016 for operating point Oberwinterthur) See section 6.1.4	Mandatory
FahrtID	See section 6.1.5	Mandatory

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Element	Comments	Field
HstSeqZaehler	Strictly monotonically increasing	Mandatory
LinienID	See section 6.1.6	Mandatory
LinienText	Customer-relevant line name or transport category, displayed as line name for a means of transport. See section 6.1.6	Mandatory
RichtungsID	See section 6.1.6	Mandatory
RichtungsText	Customer-relevant destination. See section 6.1.6	Mandatory
VonRichtungsText	as in VDV Guideline 453	Optional
AnkunftszeitASBPlan	as in VDV Guideline 453	Optional
HaltID	as in VDV Guideline 453	Optional
HaltepositionsText	as in VDV Guideline 453	Optional
FahrtInfo	as in VDV Guideline 453	Mandatory
Ursache	Description of a cause of failure	Optional

6.2.4.4. Connector messages (*Abbringernachricht*)
(see VDV Guideline 453)

6.3. Dynamic passenger information (REF-DFI, DFI)

6.3.1. Introduction

(see VDV Guideline 453)

6.3.2. Operational data supply and maintenance

(see VDV Guideline 453)

6.3.3. DFI systems with key control

(see VDV Guideline 453)

6.3.4. DFI systems with autonomous prediction display

(see VDV Guideline 453)

6.3.5. Sharp log-off

(see VDV Guideline 453)

6.3.6. Traction / through carriages / fly-bys

(see VDV Guideline 453)

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6.3.7. Reference data service (REF-DFI)

(see VDV Guideline 453)

6.3.8. Process data service (DFI)

(see VDV Guideline 453)

6.3.8.1. Data exchange

(see VDV Guideline 453)

6.3.8.2. Querying DFI data (AboAZB)

Table 23: Structure of AboAnfrage (subscription query) with AboAZB

Element	Comments	Field
AboID	(Attribute) as in VDV Guideline 453	Mandatory
VerfallZst	(Attribute) as in VDV Guideline 453	Mandatory
AZBID	AnzeigerbereichsID (display area ID) (e.g. Z8506016 for operating point Oberwinterthur) See section 6.1.4	Mandatory
LinienID	If the LinienID (line ID) is omitted, all lines for this operating point are subscribed. See section 6.1.6	Optional
RichtungsID	If the RichtungsID (direction ID) is omitted, all directions for this operating point are subscribed. See section 6.1.6.2	Optional
Vorschauzeit	as in VDV Guideline 453	Mandatory
MaxAnzahlFahrten	as in VDV Guideline 453	Optional
Hysterese	as in VDV Guideline 453	Mandatory
MaxTextLaenge	as in VDV Guideline 453	Optional
NurAktualisierung	as in VDV Guideline 453	Optional

6.3.8.3. Display user messages (AZBNachricht)

(see VDV Guideline 453)

6.3.8.3.1. Transmitting prediction data (AZBFahrplanlage)

Table 24: Structure of AZBFahrplanlage

Element	Comments	Field
AZBID	AnzeigerbereichsID (display area ID) (e.g. Z8506016 for operating point Oberwinterthur) See section 6.1.4	Mandatory
FahrtID	See section 6.1.5	Mandatory
HstSeqZaehler	as in VDV Guideline 453	Mandatory
Traction	as in VDV Guideline 453	Optional

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Element	Comments	Field
Betriebliche Fahrzeugnummer	as in VDV Guideline 453	Optional
LinienID	Metadata, exclusively used for subscription. See section 6.1.6	Mandatory
LinienText	Customer-relevant line name or transport category, displayed as line name for a means of transport. See section 6.1.6	Mandatory
FahrtBezeichner Text	as in VDV Guideline 453	Optional
RichtungsID	Metadata – not for customer display. See section 6.1.6	Mandatory
RichtungsText	Customer-relevant destination. See section 6.1.6	Mandatory
VonRichtungsText	Customer-relevant origin of transport. See section 6.1.6	Optional
AbmeldeID	as in VDV Guideline 453	Optional
ZielHst	Operational destination as operational abbreviation as per DiDok (e.g. ZUE for Zurich main station, BN for Bern, LS for Lausanne, etc.)	Mandatory
AufAZB	Arrivals information See section 6.1.14	Optional
ViaHst1Lang	as in VDV Guideline 453	Optional
ViaHst2Lang	as in VDV Guideline 453	Optional
ViaHst3Lang	as in VDV Guideline 453	Optional
Via	as in VDV Guideline 453	Optional
AnkunftszeitAZB Plan, AbfahrtszeitAZB Plan	See [1] section 6.3.8.3.1 Planned times.	Optional
AnkunftszeitAZB Prognose, AbfahrtszeitAZB Prognose	See [1] section 6.3.8.3.1 Predicted times based on current position of vehicle. (Deployment not taken into account)	Optional
AbfahrtszeitAZB Disposition	For transmitting the time effects based on a deployment decision. As soon as deployment is lifted, the element is no longer set.	Optional
FahrtStatus	as in VDV Guideline 453	Mandatory
Fahrtspezialtext	as in VDV Guideline 453	Optional
Sprachausgabe	as in VDV Guideline 453	Optional
HaltID	Technical ID for a stop. See section 6.1.13.2	Optional



Element	Comments	Field
AnkunftssteigText	as in VDV Guideline 453	Optional
AbfahrtssteigText	as in VDV Guideline 453	Optional
HaltepositionsText	Customer-relevant stop for a means of transport. See section 6.1.13.1	Optional
AnkunftsSektorenText	as in VDV Guideline 453	Optional
AbfahrtsSektorenText	as in VDV Guideline 453	Optional
Stauindikator	as in VDV Guideline 453	Optional
FahrtInfo	as in VDV Guideline 453	Mandatory
Einsteigeverbot	as in VDV Guideline 453	Optional
Aussteigeverbot	as in VDV Guideline 453	Optional
Durchfahrt	as in VDV Guideline 453	Optional

Explanation for AbfahrtszeitAZBDisposition

Cf. VDV Guideline 453, sect. 6.3.8.3.1 Transmitting predictive data (AZBFahrplanlage) [1]

Table 25: Explanation for AbfahrtszeitAZBDisposition

Expression	Meaning
AbfahrtszeitAZBDisposition missing	1.) No deployment intervention or 2.) A deployment measure that was sent previously has been reset.
AbfahrtszeitAZBDisposition set with specific value	Deployment measure; journey is being held intentionally

6.3.8.3.2. Traction in network (Traktion)

(see VDV Guideline 453)

6.3.8.3.3. Transmitting special line text (AZBLinienSpezialtext)

(see VDV Guideline 453)

6.3.8.3.4. Deleting special line text (AZBLinienSpezialtextLoeschen)

(see VDV Guideline 453)

6.3.8.3.5. Journey failure/departure (AZBFahrtLoeschen)

(see VDV Guideline 453)

AZBFahrtLoeschen is used in VDV Guideline 453 to delete a journey from the display if it leaves the display area (operating point) or fails at this operating point (full or partial failure of a journey).

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Table 26: Structure of AZBFahrtLoeschen

Element	Comments	Field
AZBID	AnzeigerbereichsID (display area ID) (e.g. Z8506016 for operating point Oberwinterthur) See section 6.1.4	Mandatory
FahrtID	See section 6.1.5	Mandatory
HstSeqZaehler	Strictly monotonically increasing	Mandatory
LinienID	Metadata, exclusively used for subscription. See section 6.1.6	Mandatory
LinienText	Customer-relevant line name or transport category, displayed as line name for a means of transport. See section 6.1.6	Mandatory
RichtungsID	Metadata – not for customer display. See section 6.1.6	Mandatory
RichtungsText	Customer-relevant destination. See section 6.1.6	Mandatory
VonRichtungsText	as in VDV Guideline 453	Optional
AnkunftszeitAZBPlan	as in VDV Guideline 453	Optional
AbfahrtszeitAZB-Plan	as in VDV Guideline 453	Optional
HaltID	as in VDV Guideline 453	Optional
HaltepositionsText	as in VDV Guideline 453	Optional
FahrtInfo	as in VDV Guideline 453	Mandatory
AbmeldeID	as in VDV Guideline 453	Optional
Ursache	Cause of a failure. Omitted for normal departure.	Optional

6.4. Visualisation of external vehicles (VIS)
(see VDV Guideline 453)

6.5. General messaging service (AND)
(see VDV Guideline 453)



7. Glossary

AND	General messaging service: VSV specification for the exchange of operational information between employees of the transport company control points involved
ANS	Ensuring connections: VDV specification for data exchange between transport companies with the aim of mutual assurance of connections between feeding and connecting means of transport
ASB	Connection area
AZB	Display area
BP	Operating point (train station, stop)
DFI	Dynamic passenger information: VDV specification for data exchange between transport companies with the aim of displaying external journeys at their own shared stops
DIDOK	“Service point documentation”. SBB master system for managing the master data of all service points of SBB, the international union of railways (UIC) and the Swiss public transport system. DIDOK governs the unique naming conventions in accordance with FOT regulations and in agreement with customer wishes.
ITCS	Intermodal Transport Control System
KTU / TU	(Concessionary) transport companies
RBL	“Computer-aided control system” -> this term was replaced by ITCS and is no longer used.
VDV	German Association of Transport Companies
VM	Transport; synonym for all means of transport relevant to customer information (e.g. train, bus, tram, boat, funicular, etc.)

8. English alias identifiers

(see VDV Guideline 453)

9. XML schema documentation

(see VDV Guideline 453)