VDV 452 Version 1.4 - Input for NeTEx

CALENDAR and OPERATING_DAY
DAY_TYPE
DAY_TYPE_ASSIGNMENT

Interface Specification

VDV 452 - Part CALENDAR

Trapeze ITS Switzerland GmbH
Industrieplatz 3 | 8212 Neuhausen | Switzerland
Tel +41 58 911 11 11 | Fax +41 58 911 11 12
info@trapezeits.com | www.trapezeits.com

Contents

Distribution	
To:	
Notify:	

Version History					
Document Version	Software Version	Date	Name		Modification
1.0		7.10.2010	gd	Gerald Dury	English Translation from http://www.vdv.de/module/layout_upload/vorschlag_zur_erweiterung_der_vdv_452.pdf and adaptions for NeTEx

Release				
	Date	Name		Signature
Verified:				
Released:				

Archive	
Document:	#333926
Replaces:	
Replaced by:	

Document Translation	
Master:	#204820.V2 (German)

1 Introduction

1.1 Purpose

This document describes the extension of the VDV 452 interface in the area of the calendar. The modelling suggested here should be viewed as an alternative calendar modelling. This extended modelling can be used whenever required (depending on the customer or system configuration).

1.2 History

More complex calendars can be reproduced in the Trapeze ITS AVMS with the effective data management module. To achieve this several day types are assigned to a calendar day, via a so-called OPERATING_DAY_NO. This procedure allows the calendars of large-scale transport authorities or regions to be reproduced more effectively. Some transport authorities have also increased their planning flexibility with the introduction of the 365 calendar day type principle.

This effective data management function was initially developed for Erfurt and then further refined as a joint project involving the Zurich Transport Authority and mdv in Munich.

This idea of extending the interface for VDV 452 originates from the RNV project (Rhein Neckar Verkehr GmbH) with interlinking to the Interplan scheduling program in cooperation with the PTV (now INITplan) company in Karlsruhe. The area covered by the RNV encompasses Baden-Württemberg (Mannheim), Rheinland-Pfalz (Ludwigshafen) and Hessen. Summarising the transport services in the cities of Mannheim, Ludwigshafen and Heidelberg as well as the Rheinhaardtbahn train system demands an extremely flexible calendar, which must be able to take into account the various requirements of the different transport systems as well as the varying holidays in the different regions. With the conventional modelling of the company calendar, it would only be possible to represent it with a huge amount of data redundancy.

The experiences from the RNV project have been incorporated into the AVLC project in Augsburg with interlinking to EPON from ISIData in Hanover.

1.3 Terms

1.4 References

[1] Local public transport data model 5.0 interface initiative, file format for data transmission between local public transport applications (VDV 452)

[2] Local public transport data model 5.0, standard VDV route network/timetable interface (VDV 452), Version 1.3

2 Extensions in the VDV interface

In order to reduce the data volume and to achieve the complex calendar day dependency in the various cities, several day types can be assigned to each calendar day.
Therefore we use the Table CALENDAR with all OPERATING_DAYs, and the DAY_TYPE_ASSIGNMENT to refer of all used DAY_TYPEs on that OPERATING_DAY, see the following sheet, which show an example of an calendar for different mode of transport in a bigger city or traffic area.

CALENDAR			DAY_TYPE_ASSIGNMENT	DAY_TYPE			
WEEKDAY	OPERATING_DAY	OPERATING_DAY_NO	DAY_TYPE_NO	Tramways	Urban Bus Lines	Regional Bus Lines	School Bus Lines
Friday	01.01.2010	1	1, 12, 21, 33	3000 JOURNEYS 200 BLOCKS	4500 JOURNEYS 450 BLOCKS	2000 JOURNEYS 250 BLOCKS	0 JOURNEYS 0 BLOCKS
...							
Monday	04.10.2010	277	1, 11, 21, 31	3000 JOURNEYS 200 BLOCKS	4000 JOURNEYS 400 BLOCKS	2000 JOURNEYS 250 BLOCKS	200 JOURNEYS 40 BLOCKS
Tuesday	05.10.2010	278	1, 11, 21, 31				
Wednesday	06.10.2010	279	1, 11, 21, 32				150 JOURNEYS 30 BLOCKS
Thursday	07.10.2010	280	1, 11, 21, 32				
Friday	08.10.2010	281	1, 12, 21, 33		4500 JOURNEYS 450 BLOCKS		50 JOURNEYS 10 BLOCKS
Saturday	09.10.2010	282	2,13,21	2500 JOURNEYS 200 BLOCKS	3000 JOURNEYS 300 BLOCKS		0 JOURNEYS 0 BLOCKS (holidays)
Sunday	10.10.2010	283	2,14,22		2500 JOURNEYS 250 BLOCKS	1000 JOURNEYS 200 BLOCKS	
Monday	11.10.2010	284	1, 11, 21, 31	3000 JOURNEYS 200 BLOCKS	4000 JOURNEYS 400 BLOCKS	2000 JOURNEYS 250 BLOCKS	
Tuesday	12.10.2010	285	1, 11, 21, 31				
Wednesday	13.10.2010	286	1, 11, 21, 32				
Thursday	14.10.2010	287	1, 11, 21, 32				
Friday	15.10.2010	288	1, 12, 21, 33		4500 JOURNEYS 450 BLOCKS		
Saturday	16.10.2010	289	2,13,21	2500 JOURNEYS 200 BLOCKS	3000 JOURNEYS 300 BLOCKS		
Sunday	17.10.2010	290	2,14,22		2500 JOURNEYS 250 BLOCKS	1000 JOURNEYS 200 BLOCKS	
...							
Friday	01.01.2010	1	1, 12, 21, 33	3000 JOURNEYS 200 BLOCKS	4500 JOURNEYS 450 BLOCKS	2000 JOURNEYS 250 BLOCKS	0 JOURNEYS 0 BLOCKS

#334030 - Register CALENDAR

2.1 CALENDAR (348)

Description: Allocation of the operational days to the calendar date.

Table: CALENDAR					
Key	Relation attributes	Data type	Value range	Required for	Description
P_1	BASE_VERSION (BASIS_VERSION)	decimal (9)	>0		Label of the general version
P_2	OPERATING_DAY (BETRIEBSTAG)	decimal (8)	>0		Calendar date as the identifier of an operational day (may differ from the calendar day with regard to start and end times). Example: The number 19951231 means 31st December 1995
	OPERATING_DAY_DESC (BETRIEBSTAG_TEXT)	char(40)	ISO 8859-1		Description of the traffic day
	OPERATING_DAY_NO (KALENDER_TAGESART_NR)	decimal (5)	1..65532		Identifier of the operational day, e.g 1 for 1. January, 365 for 31. December

Relationships with other relations	
The primary key of the CALENDAR is a third-party key in	CALENDAR has a third-party key from
Not relevant	BASE_VERSION

Example:

CALENDAR			
WEEKDAY	OPERATING_DAY	OPERATING_DAY_NO	OPERATING_DAY_DESC
Monday	04.10.2010	277	Monday Schoolday
Tuesday	05.10.2010	278	Tuesday Schoolday
Wednesday	06.10.2010	279	Wednesday Schoolday
Thursday	07.10.2010	280	Thursday Schoolday
Friday	08.10.2010	281	Friday Schoolday
Saturday	09.10.2010	282	Saturday
Sunday	10.10.2010	283	Sunday
Monday	11.10.2010	284	Monday Non Schoolday
Tuesday	12.10.2010	285	Tuesday Non Schoolday
Wednesday	13.10.2010	286	Wednesday Non Schoolday
Thursday	14.10.2010	287	Thursday Non Schoolday
Friday	15.10.2010	288	Friday Non Schoolday
Saturday	16.10.2010	289	Saturday
Sunday	17.10.2010	290	Sunday

#334030 - Register CALENDAR

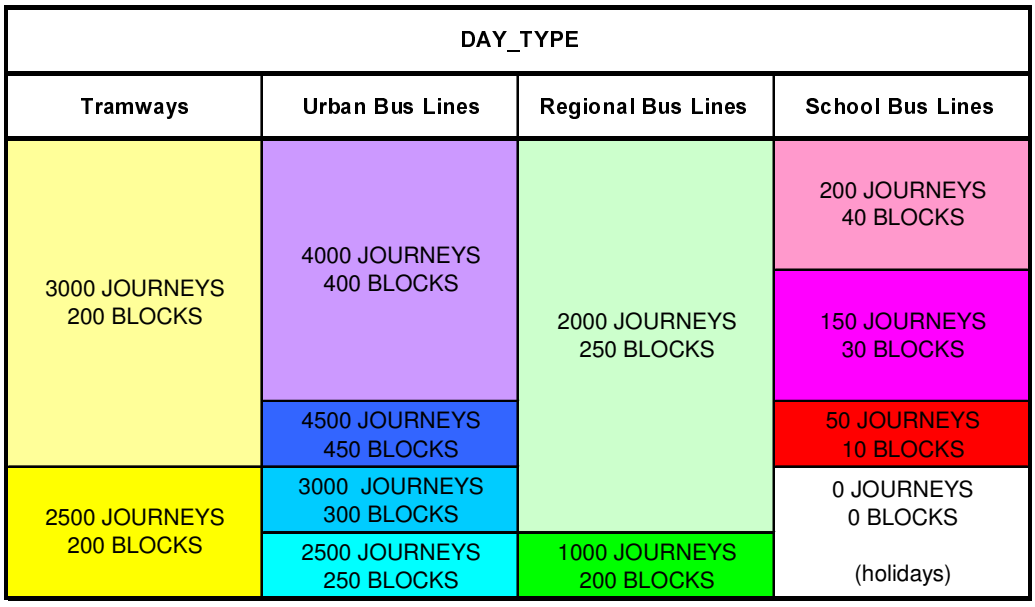
2.2 DAY_TYPE (290)

Description: List of all types of traffic days for a set of lines or blocks

Table 290: DAY_TYPE (MENGE_TAGESART)					
Key	Attribute Name (German Attribute Name)	Data Type	Range of Values	Needed for	Description
P_1	BASE_VERSION (BASIS_VERSION)	decimal (9)	>0	AVMS	Identifier of the general version
P_2	DAY_TYPE_NO (TAGESART_NR)			AVMS	Identifier of the day type
	DAY_TYPE_DESC (TAGESART_TEXT)	char(40)	ISO 8859-1	AVMS	Description of the day type

Links to other relations:	
The primary key of DAY_TYPE is a secondary key in	DAY_TYPE has the following secondary key(s):
JOURNEY BLOCK DAY_TYPE_ASSIGNMENT	BASE_VERSION

Example:



#334030 - Register DAY_TYPE

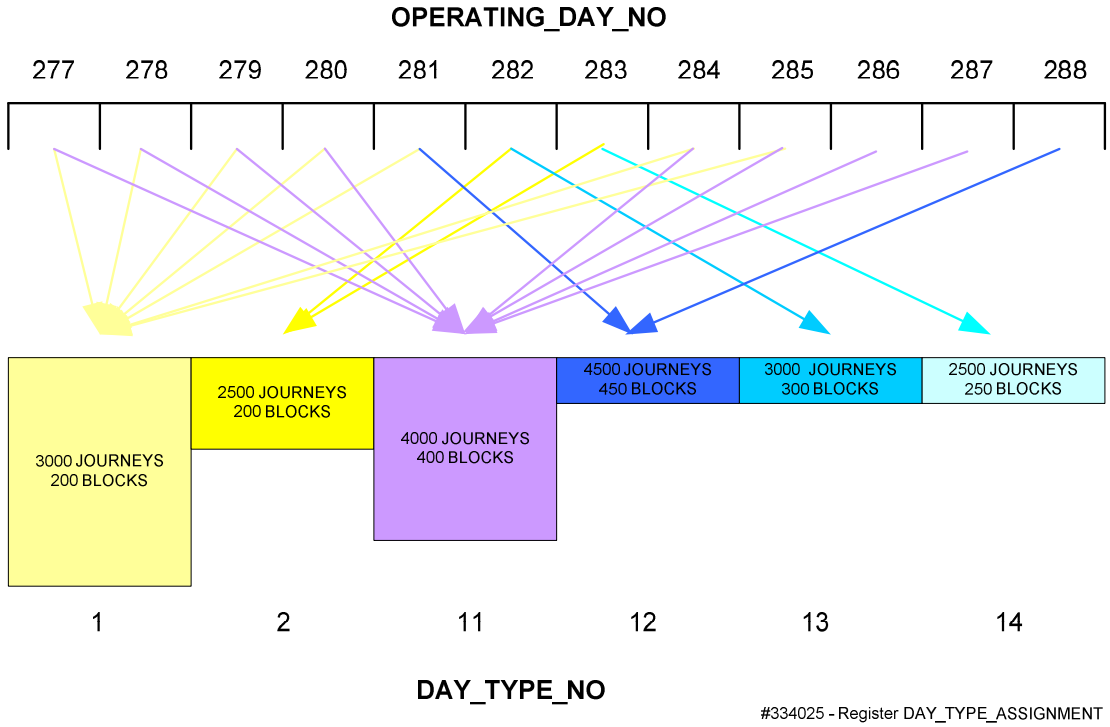
2.3 DAY_TYPE_ASSIGNMENT (292)

Description: Assignment of the day type to the operating days.
Every day type can be assigned to several operating days.
An operating day is a collection of different day types.
This is a n*m–table.

Table: DAY_TYPE_ASSIGNMENT					
Key	Relation attributes	Data type	Value range	Required for	Description
P_1	BASE_VERSION (BASIS_VERSION)	decimal (9)	>0	AVLC	Label of the general version
P_2	OPERATING_DAY_NO (KALENDER_TAGESART_NR)	decimal (5)	1-65532	AVLC	Identifier of the operational day
P_3	DAY_TYPE_NO (TAGESART_NR)	decimal (5)	1-65532	AVLC	Identifier of day type

Relationships with other relations:	
The primary key of DAY_TYPE_ASSIGNMENT is a foreign key in	DAY_TYPE_ASSIGNMENT has a third-party key from
Not relevant	BASE_VERSION DAY_TYPE

Example:



#334025 - Register DAY_TYPE_ASSIGNMENT