



PWS Vehicle Provision – Static

Reference Manual

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Page
2(32)

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Title
PWS Vehicle Provision - Static - Reference Manual

Page
3(32)

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A

Table of Content

1 About the document.....	4	4.1 Planned Dated Block.....	8
1.1 Background.....	4	4.2 Planned Vehicle Journey Data	10
2 Introduction.....	5	4.3 Background Data.....	14
2.1 Differences from original PWS.....	5	5 Response Reference.....	16
2.2 Security.....	5	5.1 Planned Dated Block.....	16
2.3 System Overview	6	5.2 Planned Vehicle Journey Data	21
3 Operating Guidelines.....	7	5.3 Background Data.....	27
4 Service Contracts.....	8	6 References.....	31

Title
PWS Vehicle Provision - Static - Reference Manual

Page
4(32)

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1 About the document

This document describes how to use the standalone extension to Hogia PubTrans® *Web Services* (PWS) called Vehicle Provision. It is developed for providing vehicle centric public transport data to external systems. Usually an implementation will not use all of the different methods, but choose the ones most relevant for the application.

Important Note – This document contains information specific to Vehicle Provision Service. For detailed information about Security, Hosting environment, Licensing, Interoperability etc. we refer to the latest reference manual for PWS.

1.1 Background

This is a reduced version of the document RM-PWS/SL/VP.

2 Introduction

This document is a specification of methods aimed for providing vehicle centric public transport data to external systems. Usually an implementation will not use all of the different methods, but choose the ones most relevant for the application.

The chapter *Planned Dated Block Method*, describes a method that is adapted for use in an external vehicle system describing which Vehicle Journeys that are included in which Block on a date by date basis. It will also expose which Destination Journey Pattern (line/route variant) that applies for each Vehicle Journey.

The chapter *Planned Vehicle Journey Data Methods* describes two methods providing more detailed information about the Vehicle Journeys.

The chapter *Background Data Methods* describes a method providing information about the Journey Pattern Points.

2.1 Differences from original PWS

PWS Vehicle Provision Service is very similar to PWS in how it works and how to install and use it. Except that it is installed on its own, side by side with PWS, it differs in the following ways.

- Authentication is made against a user table in the PWS database. See chapter about Authentication.
- Authorization is added to check a user's right to access information for a specific contractor. Mapping between user and contractor is made in a table in the PWS database. See chapter about Authorization.
- Vehicle Provision Service does not return DataSet in the result. Only response objects are returned. See chapter Response Reference for description of response objects.

2.2 Security

Both PWS and PWS Vehicle Provision use HTTP Basic Authentication standard to authenticate the client invoking the service. Because username and password are sent in clear text (no encryption) it is important to protect the communication using HTTPS (SSL). Information on how to configure a self-hosted service with SSL is presented in chapter 0.

2.2.1 Authentication

Because the service delivers confidential information about blocks for a contractor it is important to protect it from unauthorized access. The first step in the authorization is to authenticate the user. Any client calling the service must pass username and password using the basic authentication standard. This is also true for standard PWS but for PWS the credentials are used when checking the right to use the service in the license configuration. In the Vehicle Provision service authentication is done by looking up credentials in a user table in the PWS database (see picture in chapter 2.3).

If the username or password is wrong the service returns the http error code 403 (Forbidden) with the message "The HTTP request was forbidden with client authentication scheme 'Basic'."

2.2.2 Authorization

Every request object has a mandatory field for Contractor Id. Authorization is made by checking if a mapping exists between the current user credentials (found in the http request) and the specified Contractor Id. If no mapping is found a `FaultException` is returned containing the message "User (xyz) is not authorized to access data for contractor (00000000000000)".

2.3 System Overview

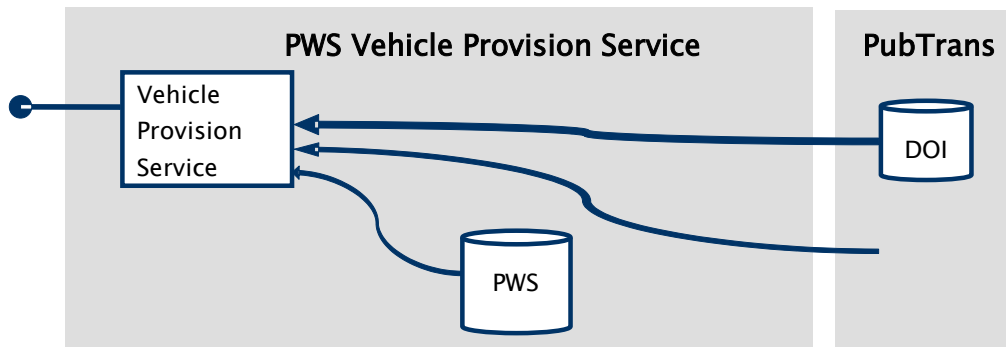


Fig. 1. PWS Vehicle Provision system structure

Title
PWS Vehicle Provision - Static - Reference Manual

Page
7(32)

Author
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Document identity
RM-PWS/VT/VP

Date
2014-04-28

Revision
A

3 Operating Guidelines

This chapter is excluded in this release.

4 Service Contracts

This part describes the web service contracts, i.e. methods with their request parameters and response data. Request parameters are of two types; required and optional. Response data is a dataset containing one or several tables that in this part only is listed with their names. The tables are fully documented in section **Response Reference**.

All information is filtered on contractor, which means only blocks for the specified contractor are available. It is also possible to include one or several (up to 8) lines in the filter. When lines are included in the filter, only journeys included in a block belonging to the specified contractor and with at least one service journey on the specified line(s) are returned. This means that dead runs placed in blocks without any service journeys on the specified lines are not included in the result. It also means that if a block contains service journeys on lines not specified in the question, those service journeys will still be included in the result if at least one of the service journeys in the block runs on a specified line.

Notes relating to UTC

All specified times are expressed either as a combination of local time and the UTC offset or explicitly as UTC time. In the latter case, both the name of the field and the format of the time shall specify that it is UTC.

4.1 Planned Dated Block

4.1.1 Get Dated Vehicle Journeys in Blocks

Get info about which Vehicle Journeys are included in which Blocks on which dates.

4.1.1.1 Request parameters

Name	Data type	Opt?	Default	Description
atStartDate	Date	No		Start date for analyzed period. Vehicle Journeys that are planned to end before this date are excluded except if they are in a Block that is worked at least partially on this date.
atLastDate	Date	No		End date for analyzed period. Vehicle Journeys that are planned to start after this date are excluded except if they are in a Block that is worked at least partially on this date.

forContractorGid	Contractor-Gid	Yes	Any	Filter on Contractor (Vehicle Operator). Observe that strict restrictions apply on who can specify this parameter and what values that can be provided. Must be provided if the forLineGids-parameter is excluded. Must be provided if the forBlockGids-parameter is provided. See the separate Filtering-description in 4.1.1.2 for more details.
forLineGids	Gid [1-8]	Yes	Any	Filter on Line(s). Comma separated list of 1 – 8 Line Gids. See the separate Filtering-description in 4.1.1.2 for more details.
forBlockGids	Gid [1-8]	Yes	Any	Filter on Block(s). Comma separated list of 1 – 8 Block Gids. Cannot be provided if the forLineGids-parameter is provided. See the separate Filtering-description in 4.1.1.2 for more details.
includeTableVehicle-JourneyTemplate	Boolean	Yes	False	If true, the response should include the <i>Vehicle Journey Template</i> table.
includeTableVehicle-JourneyNote	Boolean	Yes	False	If true, the response should include the <i>Vehicle Journey Note</i> table.
includeTableFetcher-DatedConnection	Boolean	Yes	False	If true, the response should include the <i>Fetcher Dated Connection</i> table.
includeTableFeeder-DatedConnection	Boolean	Yes	False	If true, the response should include the <i>Feeder Dated Connection</i> table.

4.1.1.2 Filtering for different combinations of forContractorGid, forLineGids and forBlockGids

The following four cases are possible:

Case 1) Only the forLineGids-parameter is provided

All Service Journeys that are worked on any of the listed Lines are included. Note that the references to Block will be intentionally excluded from the result set.

Case 2) Only the forContractorGid-parameter is provided

All Service Journeys and Dead Runs that are in any of the Blocks that are defined by the selected Contractor are included.

Case 3) The forContractorGid-parameter and the forLineGids-parameter is provided

All Service Journeys and Dead Runs that are in a Block defined by the selected Contractor are included if that Block contains at least one Service Journey worked on any of the listed Lines. Additionally all other Service Journeys that are worked on any of the listed Lines are included.

Case 4) The forContractorGid-parameter and the forBlockGids-parameter is provided

All Service Journeys and Dead Runs that are in any of the listed Blocks are included on the condition that these Blocks are defined by the selected Contractor.

4.1.1.3 Response data

Index	Table Name	Opt?	Note
0	Dated Vehicle Journey In Block	No	
1	Vehicle Journey Template	Yes	
2	Vehicle Journey Note	Yes	
3	Fetcher Dated Connection	Yes	Provides detailed information of connecting fetcher Vehicle.
4	Feeder Dated Connection	Yes	Provides detailed information of connecting feeder Vehicle Journeys.

4.2 Planned Vehicle Journey Data

4.2.1 Get Destination Journey Patterns

This method provides “line variant” information describing destination displays, sequence of Stop Points, boarding and alighting restrictions used for Vehicle Journeys. Variants having different paths are described individually, but there is no differentiation for different timings. There are no details of timings at the stops.

This method provides information about Destination Journey Patterns used on Lines and Dead Runs worked by a Contractor. Optionally the result set can be reduced by specifying Line(s) or Block(s).

4.2.1.1 Usage

This method could be used alone or together with GetTimedJourneyPattern to retrieve Vehicle Journey Data.

4.2.1.2 Request parameters

Name	Data type	Opt?	Default	Description
atStartDate	Date	No		Start date for analyzed period. Vehicle Journeys that are planned to end before this date are excluded except if they are in a Block that is worked at least partially on this date. See the separate Filtering-description in 4.2.1.3 for more details.
atLastDate	Date	No		End date for analyzed period. Vehicle Journeys that are planned to start after this date are excluded except if they are in a Block that is worked at least partially on this date. See the separate Filtering-description in 4.2.1.3 for more details.
forContractorGid	Contractor-Gid	Yes		Filter on Contractor (Vehicle Operator). Observe that strict restrictions apply on who can specify this parameter and what values that can be provided. Must be provided if the forLineGids-parameter is excluded. Must be provided if the forBlockGids-parameter is provided. See the separate Filtering-description in 4.2.1.3 for more details.
forLineGids	Gid [1-8]	Yes	Any	Filter on Line(s). Comma separated list of 1 – 8 Line Gids. See the separate Filtering-description in 4.2.1.3 for more details.
forBlockGids	Gid [1-8]	Yes	Any	Filter on Block(s). Comma separated list of 1 – 8 Block Gids. Cannot be provided if the forLineGids-parameter is provided. See the separate Filtering-description in 4.2.1.3 for more details.
includeTable-DestinationDisplay	Boolean	Yes	False	If true, the response should include the <i>Destination Display</i> table.

includeTable-DisplayKey	Boolean	Yes	False	If true, the response should include the <i>Display Key</i> table.
includeTable-ActionKeyAfterCall	Boolean	Yes	False	If true, the response should include the <i>Action Key After Call</i> table.
includeStopPointKey	Boolean	Yes	False	If true, the response should include the <i>Stop Point Key</i> table.

4.2.1.3 Filtering

The filters are used to find a set of Vehicle Journeys in the analyzed period according to the rules in 4.1.1.2. Destination Journey Patterns that are used in any of those Vehicle Journeys will be included in the response..

4.2.1.4 Response data

Index	Table Name	Opt?	Note
0	Destination Journey Pattern	No	
1	Point In Destination Journey Pattern	No	
2	Destination Display	Yes	
3	Display Key	Yes	
4	Action Key After Call	Yes	
5	Stop Point Key	Yes	

4.2.2 Get Timed Journey Patterns

The method provides timings for Service Journeys and Dead Runs.

4.2.2.1 Usage

This method is an optional complement to the Get Destination Journey Pattern method described previously. If used, it should be called with the same request parameters. For each Dated Vehicle Journey it is then possible to deduct which Timed Journey Pattern that apply and which Destination Journey Pattern that does apply. The information from the two methods can then be matched on Call-level using the Journey Pattern Sequence Number.

4.2.2.2 Request parameters

Name	Data type	Opt?	Default	Description
atStartDate	Date	No		Start date for analyzed period. Vehicle Journeys that are planned to end before this date are excluded except if they are in a Block that is worked at least partially on this date. See the separate Filtering-description in 4.2.2.3 for more details.
atLastDate	Date	No		End date for analyzed period. Vehicle Journeys that are planned to start after this date are excluded except if they are in a Block that is worked at least partially on this date. See the separate Filtering-description in 4.2.2.3 for more details.
forContractorGid	Contractor-Gid	Yes		Filter on Contractor (Vehicle Operator). Observe that strict restrictions apply on who can specify this parameter and what values that can be provided. Must be provided if the forLineGids-parameter is excluded. Must be provided if the forBlockGids-parameter is provided. See the separate Filtering-description in 4.2.2.3 for more details.
forLineGids	Gid [1-8]	Yes	Any	Filter on Line(s). Comma separated list of 1 – 8 Line Gids. See the separate Filtering-description in 4.2.2.3 for more details.
forBlockGids	Gid [1-8]	Yes	Any	Filter on Block(s). Comma separated list of 1 – 8 Block Gids. Cannot be provided if the forLineGids-parameter is provided. See the separate Filtering-description in 4.2.2.3 for more details.

4.2.2.3 Filtering

The filters are used to find a set of Vehicle Journeys in the analyzed period according to the rules in 4.1.1.2. Timed Journey Patterns that are used in any of those Vehicle Journeys will be included in the response.

4.2.2.4 Response data

Index	Table Name	Opt?	Note
0	Timed Journey Pattern	No	
1	Call On Timed Journey Pattern	No	

4.3 Background Data

4.3.1 Get Journey Pattern Points

This method provides information about Journey Pattern Points used on Lines and Dead Runs worked by a Contractor. Optionally the result set can be reduced by specifying Line(s). All Stop Points or Parking Points used by any Vehicle Journey in the selection are returned. If multiple versions of a Journey Pattern Point are available in the period, all versions are included.

4.3.1.1 Request parameters

Name	Data type	Opt?	Default	Description
atStartDate	Date	No		Start date for analyzed period. Vehicle Journeys that are planned to end before this date are excluded except if they are in a Block that is worked at least partially on this date. See the separate Filtering-description in 4.3.1.2 for more details
atLastDate	Date	No		End date for analyzed period. Vehicle Journeys that are planned to start after this date are excluded except if they are in a Block that is worked at least partially on this date. See the separate Filtering-description in 4.3.1.2 for more details
forContractorGid	Contractor-Gid	Yes		Filter on Contractor (Vehicle Operator). Observe that strict restrictions apply on who can specify this parameter and what values that can be provided. Must be provided if the forLineGids-parameter is excluded. See the separate Filtering-description in 4.3.1.2 for more details

forLineGids	Gid [1-8]	Yes	Any	Filter on Line(s). Comma separated list of 1 – 8 Line Gids. See the separate Filtering-description in 4.3.1.2 for more details.
forBlockGids	Gid [1-8]	Yes	Any	Filter on Block(s). Comma separated list of 1 – 8 Block Gids. See the separate Filtering-description in 4.3.1.2 for more details.
includeStopPoint-Key	Boolean	Yes	False	If true, the response should include the <i>Stop Point Key</i> table.
includeTable-Zones	Boolean	Yes	False	If true, the response should include the <i>Zones</i> and <i>Journey Pattern Point in Zones</i> table.

4.3.1.2 Filtering

The filters are used to find a set of Vehicle Journeys in the analyzed period according to the rules in 4.1.1.2. Journey Pattern Points that are used in any of those Vehicle Journeys will be included in the response.

4.3.1.3 Response data

Index	Table Name	Opt?	Note
0	Journey Pattern Point	No	
1	Stop Point Key	Yes	Provided for Journey Pattern Points that are Stop Points and have such Keys.
2	Journey Pattern Point in Zone	Yes	
3	Zone	Yes	

5 Response Reference

This part contains detailed descriptions of the data returned in the response of a web service method call. Which data that are returned by a specific method are documented in Service Contracts.

5.1 Planned Dated Block

5.1.1 Dated Vehicle Journey In Dated Block

This object describes which Vehicle Journeys are included in which Blocks on a date by date basis.

For each Dated Vehicle Journey there is a reference to which "route variant" it uses (Destination Journey Pattern). There is also a reference to the Vehicle Journey Template object which provides more information of the Vehicle Journey.

Field name	Data type	Null?	Description
IsDatedVehicleJourneyId	Numeric(16)	No	Unique id of the Dated Vehicle Journey. Same value as the Id of <i>Dated Vehicle Journey</i> in DOI.
IsInDatedBlockId	Numeric(16)	Yes	Id of the Dated Block.
OperatingDayDate	Date	No	The operating day date.
Gid	VehicleJourneyGid	No	Gid of the Vehicle Journey.
PlannedStartDateTime	DateTime	No	Start time of the Vehicle Journey.
IsInBlockGid	BlockGid	Yes	Gid of the Block.
IsDescribedByVehicleJourneyTemplateId	Numeric(16)	No	Reference to Id in table <i>Vehicle Journey Template</i> .
WorkedAccordingToDestinationJourneyPatternId	Numeric(16)	No	Reference to Id in table <i>Destination Journey Pattern</i> .
PlannedStartTrainSizeCarCount	Integer	Yes	TrainSizeCarCount from related table <i>Service Requirement</i> . Value is taken from the <i>Service Requirement</i> belonging to the first point in the <i>Journey Pattern</i>

5.1.2 Vehicle Journey Template

A Vehicle Journey Template describes the details of the Vehicle Journey.

Field name	Data type	Null?	Description
Id	Numeric(16)	No	Unique Id.
WorkedAccordingToTimedJourneyPatternId	Numeric(16)	No	Reference to Id in <i>Timed Journey Pattern</i> .
IsWorkedOnDirectionOfLineGid	DirectionGid	Yes	This is always the DOI4 type of Gid, regardless of target platform.
IsWorkedOnLineGid	LineGid	Yes	
LineDesignation	String(1-4)	Yes	The public identification of the line, usually a line number.
TransportModeCode	String(1-8)	No	BUS, TRAM, METRO, TRAIN, FERRY, SHIP, TAXI
TransportAuthorityCode	String(1-8)	No	The code for the transport authority that manages the line.
TransportAuthorityName	String(1-50)	No	The name of the transport authority that manages the line.
ContractorCode	String(1-8)	Yes	The code of the operator that operates the service journey.
ContractorName	String(1-50)	Yes	The name of the operator that operates the service journey.
OriginName	String(1-50)	Yes	
OriginShortName	String(1-16)	Yes	
ProductType	String(1-8)	Yes	Code of product under which the line is marketed.

5.1.3 Vehicle Journey Note

A Vehicle Journey Note contains additional information for Vehicle Journeys. A Vehicle Journey Note can apply to all of the Vehicle Journey or part of the Vehicle Journey.

Field name	Data type	Null?	Description
Id	Numeric(16)	No	Unique Id

Field name	Data type	Null?	Description
IsForVehicleJourneyTemplateId	Numeric(16)	No	Reference to Id in <i>Vehicle Journey Template</i> .
AppliesFromJourneyPatternSequenceNumber	Numeric(3)	Yes	Refers to the first Point In Destination Journey Pattern that the Note applies to. If NULL, then the Note applies from the beginning of the Vehicle Journey
AppliesToJourneyPatternSequenceNumber	Numeric(3)	Yes	Refers to the last Point In Destination Journey Pattern that the Note applies to. If NULL, then the Note applies to the end of the Vehicle Journey
ConcernsArrivalsYesNo	Boolean	No	
ConcernsDepartureYesNo	Boolean	No	
ExposedToStaffYesNo	Boolean	No	
PublicYesNo	Boolean	No	
ExposedinPrintMediaYesNo	Boolean	No	
DynamicMediaInformPassengersConditionCode	String(1-8)	No	
TextNote	String(1-255)	No	
ExternalIDName	String(1-50)	Yes	
ExternalSystemIdName	String(1-50)	Yes	

5.1.4 Fetcher Dated Connection

Contains information about connections *from* the journeys belonging to the specified contractor and running on the specified lines, if lines are specified.¹ Returns all journeys that fetches passengers from the selected journeys and information about where the connection is taking place. The journeys that are fetching passengers may belong to other contractors and other lines.

¹ Please note that journeys on other lines may be included in the result if they are planned in the same block as journeys on the specified lines. For more information see Service Contracts.

Field name	Data type	Null?	Description
Id	Numeric(16)	No	Unique Id
IsForFeederDatedVehicleJourneyId	Numeric(16)	No	Reference to Id in <i>Dated Vehicle Journey</i> .
IsAtFeederJourneyPatternSequenceNumber	Numeric(3)	Yes	Refers to the Call where the Connection takes place.
FetcherVehicleJourneyGid	VehicleJourneyGid	No	Gid of the other (fetcher) Vehicle Journey.
FetcherStopPointGid	StopPointGid	No	Stop Point where the other (fetcher) Vehicle Journey waits.
FetcherPlannedEarliestDepartureDateTime	DateTime	No	
MinimumChangeDurationSeconds	TimeSpan	No	
FetcherMaxWaitDurationSeconds	TimeSpan	No	
ContinuingVehicleYesNo	Boolean	No	
InformStaffYesNo	Boolean	No	
InformPassengersYesNo	Boolean	No	
MaximumReplanDurationSeconds	TimeSpan	Yes	
AlertControlCentreAfterDurationSeconds	TimeSpan	Yes	

5.1.5 Feeder Dated Connection

Contains information about connections *to* the journeys belonging to the specified contractor and running on the specified lines, if lines are specified.² Returns all journeys that feed passengers to the selected journeys and information about where the connection is taking place. The journeys that are feeding passengers may belong to other contractors and other lines.

Field name	Data type	Null?	Description
Id	Numeric(16)	No	Unique Id
IsForFetcherDatedVehicleJourneyId	Numeric(16)	No	Reference to Id in <i>Dated Vehicle Journey</i> .

² Please note that journeys on other lines may be included in the result if they are planned in the same block as journeys on the specified lines. For more information see Service Contracts.

Title
PWS Vehicle Provision - Static - Reference Manual

Page
20(32)

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Date
2014-04-28

Revision
A

Field name	Data type	Null?	Description
IsAtFetcherJourneyPatternSequenceNumber	Numeric(3)	Yes	Refers to the (fetcher) Call where the Connection takes place.
FeederVehicleJourneyGid	VehicleJourneyGid	No	Gid of the other (feeder) Vehicle Journey.
FeederStopPointGid	StopPointGid	No	Stop Point where the other (feeder) Vehicle Journey arrives.
FeederPlannedLatestArrivalDateTime	DateTime	No	
MinimumChangeDurationSeconds	TimeSpan	No	
FetcherMaxWaitDurationSeconds	TimeSpan	No	
ContinuingVehicleYesNo	Boolean	No	
InformStaffYesNo	Boolean	No	
InformPassengersYesNo	Boolean	No	
MaximumReplanDurationSeconds	TimeSpan	Yes	
AlertControlCentreAfterDurationSeconds	TimeSpan	Yes	

5.2 Planned Vehicle Journey Data

5.2.1 Destination Journey Pattern

A Vehicle Journey is worked according to a certain Journey Pattern.

A Journey Pattern describes the sequence of Stop Points (and other Journey Pattern Points) called during a Vehicle Journey. The Destination Journey Pattern object provides the Journey Pattern information and also additional information such as the Destination Display information.

Field name	Data type	Null?	Description
Id	Numeric(16)	No	Unique Id. Observe that this is the same value as the Id in <i>Destination Pattern</i> from DOI.
IsOnJourneyPatternId	Numeric(16)	No	Reference to Id of the DOI <i>Journey Pattern</i> . Observe that this is not a unique key as there could be multiple Destination Patterns for one Journey Pattern.
Description	String(1-255)	No	Description to identify the Destination Journey Pattern (route/line variant). Consists of a combination of first stop name and destination display information for Service Journeys. (*)
CallCount	Numeric(3)	No	Total number of Calls in the Destination Journey Pattern. Same value as highest Sequence Number for this Destination Journey Pattern.
HasStartDestinationDisplayId	Numeric(16)	Yes	Reference to Id in <i>DestinationDisplay</i> .
DestinationDisplayText	String (1-128)	No	Combined destination text applicable at start of journey.
DestinationDisplayCode	String(1-16)	Yes	Code related to the combined destination text. (*)
LineGid	Numeric(16)	Yes	Line Gid for Service Journeys, NULL for Dead Runs.

5.2.2 Point In Destination Journey Pattern

This object describes information related to a specific stop in a Journey Pattern.

Field name	Data type	Null?	Description
Id	Numeric(16)	No	Unique Id. Observe that this is the same value as the Id in <i>Point In Destination Pattern</i> from DOI.
IsOnDestinationJourneyPatternId	Numeric(16)	No	Reference to Id in table <i>Destination Journey Pattern</i> .
SequenceNumber	Numeric(3)	No	Sequence in Journey Pattern, 1 is lowest value.
IsJourneyPatternPointGid	JourneyPatternPointGid	No	Reference to Gid in table <i>Journey Pattern Point</i> .
IsStopPointGid	StopPointGid	Yes	NULL for Journey Pattern Points that are not Stop Points. (Value that applies on the first date of the selection period.)
CoordinateSystemName	String(1-50)	Yes	The name of the coordinate system used for the coordinates related to this Journey Pattern Point.
LocationNorthingCoordinate	String(1-30)	Yes	Latitude of Journey Pattern Point. (Value that applies on the first date of the selection period.)
LocationEastingCoordinate	String(1-30)	Yes	Longitude of Journey Pattern Point. (Value that applies on the first date of the selection period.)
StopAreaGid	Numeric(16)	Yes	Reference to the Stop Area for this Call. (Value that applies on the first date of the selection period.)

Field name	Data type	Null?	Description
StopAreaName	String(1-50)	Yes	Name of Stop Area for this Call. (Value that applies on the first date of the selection period.)
StopAreaShortName	String(1-16)	Yes	Name of Stop Area for this Call. (Value that applies on the first date of the selection period.)
StopAreaAbbreviation	String(1-8)	Yes	Abbreviation of Stop Area for this Call. (Value that applies on the first date of the selection period.)
StopPointDesignation	String(1-4)	Yes	Boarding position i.e. track number or gate number/letter. (Value that applies on the first date of the selection period.)
LineDesignation	String(1-8)	Yes	Public line number (alphanumeric).
DestinationDisplayText	String (1-128)	No	Combined destination text.
DestinationDisplayCode	String(1-16)	Yes	Code related to the combined destination text. (*)
HasDestinationDisplayId	Numeric(16)	Yes	Reference to Id in <i>DestinationDisplay</i> .
DistanceFromLastCallMeters	Numeric(5)	Yes	Null if not known. 0 for first Call. The length that applies on the first date of the selection period will be chosen.
ArrivalType	ArrivalType	No	See explanation in 5.2.2.1 Arrival Types.
DepartureType	DepartureType	No	See explanation in 5.2.2.2 Departure Types.

5.2.2.1 Arrival Types

The table below describes values of the Arrival Type.

Type
0 = No stop
1 = Stops, but alighting is not permitted
2 = Stop if requested
3 = Always stops
5 = Flexible alighting from (but not including) previous point and up to and including this point.

5.2.2.2 Departure Types

The table below describes values of the Departure Type.

Type
0 = No stop
1 = Stops, but boarding is not permitted
2 = Stop if requested
3 = Always stops
5 = Flexible boarding from this point up to but not including next point.

5.2.3 Destination Display

Field name	Data type	Null?	Description
Id	Numeric(16)	No	Unique Id
LineDesignation	String(1-8)	Yes	Public line number (alphanumeric)
PrimaryDestinationName	String(1-50)	No	Main destination
PrimaryDestinationShortName	String(1-16)	Yes	
SecondaryDestinationName	String(1-50)	Yes	
SecondaryDestinationShortName	String(1-16)	Yes	
SecondaryDestinationType	String(1-8)	Yes	
ProductName	String(1-50)	Yes	
SymbolName	String(1-50)	Yes	

5.2.4 Display Key

A *Display Key* describes some additional information that applies from this Call. This could for instance be a technical code to send to the outside front display to show the correct destination.

Field name	Data type	Null?	Description
Id	Numeric(16)	No	Unique Id
IsInDestinationDisplayId	Numeric(16)	No	Reference to <i>Id</i> in <i>Destination Display</i> .
TypeCode	String(1-8)	No	
DeviceName	String(1-50)	No	
ParameterData	String(1-50)	No	

5.2.5 Action Key After Call

An *Action Key After Call* describes some action that should be performed a certain distance after a Call. This could for instance relate to requesting or releasing traffic light priority.

Field name	Data type	Null?	Description
Id	Numeric(16)	No	Unique Id in combination with <i>IsAfterPointInDestinationJourneyPatternId</i> .
IsAfterPointInDestinationJourneyPatternId	Numeric(16)	No	Reference to <i>Id</i> in <i>Point In Destination Journey Pattern</i> and <i>Is At Point In Destination Journey Pattern Id</i> in <i>Call On Timed Journey</i> .
AtDistanceAfterCallMeters	Numeric(5)	No	
CoordinateSystemName	String(1-50)	Yes	The name of the coordinate system used for the coordinates related to this Action Key.
LocationNorthingCoordinate	String(1-30)	Yes	
LocationEastingCoordinate	String(1-30)	Yes	
TypeCode	String(1-8)	No	
DeviceName	String(1-50)	No	
ParameterData	String(1-50)	No	
ExistsFromDate	Date	No	
ExistsUptoDate	Date	Yes	

5.2.6 Stop Point Key

A *Stop Point Key* describes some additional information that applies to this Stop Point. This could for instance be a technical code describing preferred audio voice level at night at this stop.

Field name	Data type	Null?	Description
Id	Numeric(16)	No	Unique Id.
IsForStopPointGid	Numeric(16)	No	Reference to <i>IsStopPointGid</i> in <i>Journey Pattern Point</i> , <i>AtStopPointGid</i> in <i>Call On Timed Journey Pattern</i> and <i>IsStopPointGid</i> in <i>Point In Destination Journey Pattern</i> .
TypeCode	String(1-8)	No	
DeviceName	String(1-50)	No	
ParameterData	String(1-50)	No	
ExistsFromDate	Date	No	
ExistsUptoDate	Date	Yes	

5.2.7 Timed Journey Pattern

A Timed Journey Pattern describes the sequence of Stop Points and other Journey Pattern Points on a Destination Journey Pattern with timings.

Field name	Data type	Null?	Description
Id	Numeric(16)	No	Unique Id
IsBasedOnJourneyPatternId	Numeric(16)	No	Reference to id for the DOI Journey Pattern. Observe that this is not a unique key.

5.2.8 Call On Timed Journey Pattern

This object describes timing information related to a specific stop in a Journey Pattern.

Field name	Data type	Null?	Description
Id	Numeric(16)	No	Call Id
IsOnTimedJourneyPatternId	Numeric(16)	No	Reference to Id in <i>Timed Journey Pattern</i> .
SequenceNumber	Numeric(3)	No	Sequence in Journey Pattern, 1 is lowest value. Also used for matching real-time messages.

Field name	Data type	Null?	Description
PlannedLatestArrivalTimeOffsetSeconds	Numeric(6)	Yes	Planned arrival time expressed as offset from start time of Vehicle Journey.
PlannedEarliestDepartureTimeOffsetSeconds	Numeric(6)	Yes	Planned departure time expressed as offset from start time of Vehicle Journey.

5.3 Background Data

5.3.1 Journey Pattern Point

Field name	Data type	Null?	Description
Id	Numeric(16)	No	Unique id of the object. Same Id as Stop Point Validity in DOI for Stop Points else Id of DOI Journey Pattern Point.
Gid	Numeric(16)	No	Journey Pattern Point Gid.
Name	String(1-50)	Yes	Full name (stop area name or road element name).
ShortName	String(1-16)	Yes	Short version of name. Can be used when presentation space is limited.
Designation	String(1-4)	Yes	The public identification of a Stop Point within a Stop Area.
LocalNumber	Integer	Yes	Local number within a stop area.
RoadElementName	String(1-50)	Yes	Name of road where the stop point is located.
IsStopPointId	Numeric(16)	Yes	Reference to the stop point object.
IsStopPointGid	Numeric(16)	Yes	Reference to the stop point object.
IsIncludedInStopAreaId	Numeric(16)	Yes	Reference to column <i>Id</i> in table <i>StopArea</i> .
IsIncludedInStopAreaGid	Numeric(16)	Yes	Reference to the stop area.
TypeCode	String(1-8)	Yes	BUSSTOP, REFUGE, PLATFORM, TRACK, GATE, PIER, ENTRANCE, EXIT, UNKNOWN
ForAlightingYesNo	Boolean	No	True if alighting is normally permitted. Observe that this can be overridden by Service Journeys not allowing alighting at this Stop Point.

Field name	Data type	Null?	Description
ForBoardingYesNo	Boolean	No	True if boarding is normally permitted. Observe that this can be overridden by Service Journeys not allowing boarding at this Stop Point.
OrientationDegrees	Numeric(5,2)	Yes	0.00 to 360.00 degrees. Vehicle Heading.
LengthMeters	Numeric(12,2)	Yes	Available space for vehicles at the Stop Point.
InsideStationYesNo	Boolean	No	
IndoorsYesNo	Boolean	No	
FictitiousYesNo	Boolean	No	
MainDirectionName	String(1-50)	Yes	
CoordinateSystemName	String(1-50)	Yes	The name of the coordinate system used for the coordinates for this Journey Pattern Point.
LocationNorthingCoordinate	String(1-30)	Yes	
LocationEastingCoordinate	String(1-30)	Yes	
ExistsFromDate	Date	No	
ExistsUptoDate	Date	Yes	

5.3.2 Journey Pattern Point in Zone

This table exposes which Zones that a certain Journey Pattern Point is in. A Journey Pattern Point can be in multiple Zones at the same time.

Field name	Data type	Null?	Description
Id	Numeric(16)	No	Unique id of the object.
IsJourneyPatternPointGid	Numeric(16)	No	Reference to the JourneyPatternPointGid object.
IsInZoneGid	Numeric(16)	No	Reference to the ZoneGid object.
ExistsFromDate	Date	No	
ExistsUptoDate	Date	Yes	Last day of validity. May be NULL if no last day is set.

5.3.3 Zone

The zones are sorted in ascending order after the field *Gid*. If another sort order is required, the consuming application has to redo the sorting.

Field name	Data type	Null?	Description
Id	Numeric(16)	No	Unique id of the object. Can be used when caching and refreshing info about this zone.
Gid	Numeric(16)	No	Zone Gid.
Code	String(1-8)	Yes	Short identifier for zone.
Number	Integer	No	The number of the zone unique within the transport authority and type code.
Name	String(1-50)	Yes	Full name of zone.
ShortName	String(1-16)	Yes	Short version of name of zone. Can be used when presentation space is limited.
TypeCode	String(1-8)	No	PARISHZ, MUNICIPALZ, COUNTYZ, TRAFFICZ, TARIFFZO, TALK_GRP, INFO_REG, PARKINGA
IsDefinedByTransportAuthorityId	Numeric(16)	No	Reference to the TransportAuthorityId object
IsDefinedByTransportAuthorityGid	Gid		Reference to the TransportAuthorityGid
CoordinateSystemName	String(1-50)	Yes	The name of the coordinate system used for the coordinates for thiszone.
CentroidNorthingCoordinate	String(1-30)	Yes	

Title
PWS Vehicle Provision - Static - Reference Manual

Page
30(32)

Author
Maria Bringevik

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Document identity
RM-PWS/VT/VP

Date
2014-04-28

Revision
A

Field name	Data type	Null?	Description
CentroidEastingCoordinate	String(1-30)	Yes	
ExistsFromDateTime	Date	No	
ExistsUptoDateTime	Date	Yes	Last day of validity. May be NULL if no last day is set.

Title
PWS Vehicle Provision - Static - Reference Manual

Page
31(32)

Author
Maria Bringevik

Approved
Ulf Bjersing

Document identity
RM-PWS/VT/VP

Date
2014-04-28

Revision
A

6 References

Document	Description
[UM-PWS/2]	PubTrans Web Services 2 - Reference Manual
[IS-PT/I/DOI/4]	PubTrans Data Output Interface 4 – Interface Specification
[UM-PT/I/ROI/3]	PubTrans Real-time Output Interface 3 – User manual

Title
PWS Vehicle Provision - Static - Reference Manual

Page
32(32)

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Revision
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