Infotripla Oulu SIRI Services

User documentation

Document version 1.0

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1. Introduction

Public transport services rely increasingly on information systems to ensure reliable, efficient operation and widely accessible, accurate passenger information. These systems are used for a range of specific purposes: setting schedules and timetables, managing vehicle fleets, issuing tickets and receipts, providing real-time information on service running, and so on.

The Service Interface for Real Time Information (SIRI) specifies a European interface standard for exchanging information about the planned, current or projected performance of real-time public transport operations between different computer systems.

More information about SIRI and SIRI Standards can be found from official Public Transport XML Standards -web page, which is located at http://www.kizoom.com/standards-index.html

1.1. Overview

Infotripla provides traffic information feeds that are combined from various information sources, most notably Finnish Transport Agency and Finnish Meteorological Institute. Also a number of vehicle fleets from third parties are collecting sensory data for Infotripla which is then used to enrich the content – especially real time traffic flow information. The information is filtered to a set of information products. Oulu SIRI Service in one example of this kind of information products.

Oulu SIRI Web Service introduces two SIRI interfaces for Oulu specific public transportation. These are SIRI Stop Timetable (ST) and SIRI Production Timetable (PT) -services.
These services are based on Oulu's public transportation material, which has been transformed to support SOAP Web Service implementation providing Stop timetable, as well as Production timetable data.

1.2. Purpose

This document aims to describe the Oulu SIRI Services in such detail that third parties are able to develop a client interface for the service and start using the data. Help and Assistance -section (chapter 6) provides contact details in case of further assistance is required.

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1.3. Abbreviations

SIRI	SIRI (Service Interface for Real Time Information) is an XML protocol to allow distributed computers to exchange real-time information about public transport services and vehicles.
ST	Abbreviation for SIRI Stop Timetable -service
PT	Abbreviation for SIRI Production Timetable -service
HTTP	Hyper Text Transfer Protocol
SOAP	Service Oriented Architecture Protocol
RPC	Remote Procedure Call. A method that one program can use to request a service from a network using certain protocols, such as SOAP and HTTP
URL	Uniform Resource Locator
XML	Extensible Markup Language

2. Information Product

This section provides a high level technical view to Infotripla's Oulu SIRI services introducing the available Oulu SIRI interfaces and instructs how to access them.

2.1. Available information interfaces

Infotripla structures the public transportation information as a set of separate information interfaces. Each interface contains data of specific type. These interfaces are Stop Timetable (ST) and Production Timetable (PT) -interfaces.

Infotripla is using SIRI Pull Exchange mechanism, meaning that data delivery is initiated by the data utilizer and a snapshot of the transportation schedules at the time of request is delivered. Available interfaces and estimated payload sizes are described in the following table.

Service name	SOAP/RPC operation (interface)	Estimated Payload Size
Stop Timetable Service	GetStopTimetable	50 K bytes
Production timetable Service	GetProductionTimetable	500 K bytes

The estimated payload sizes at the moment are more like good guesses and they will be more accurate in the future.

2.1.1. SIRI Stop Timetable Service (ST)

SIRI Stop Timetable Service (ST), provides a timetable for vehicle arrivals and departures at a designated stop. It can be used to reduce the amount of information that needs to be transmitted in real-time to stops and displays and provides a data feed of the static stop timetables. The service request allows a client system to specify that only stop timetables for a specific monitoring point, line, or direction are to be returned. Service then returns departures from the stop for a specified time window.

2.1.2. SIRI Production Timetable Service (PT)

SIRI Production Timetable Service (PT), transmits daily timetables that are known about at the time of transmission. The Production Timetables service exchanges information about the expected operation of a transport network for a specified day in the near future. The service request allows a client system to filter timetables by operator, line, direction and time window, allowing only the section of the timetable of interest to be selected. Service response includes the journey times at stops and other additional journey information.

2.2. Oulu SIRI Web Service basics

Oulu SIRI ST and PT Web Service has been implemented based on official SIRI 1.4 Web Service schema, defined here: http://transitdata.fi/siri/oulu/OuluSiriServices?wsdl

This means that implementing client must follow this interface, which is based on SOAP RPC messages. These RPC messages in both Web Service requests, as well as in responses are consisting from certain message parts, which are defined in the wsdl, and which have a content that is based on official SIRI 1.4 schema. More detailed message examples with explained message content is described in chapter 3.

2.3. Access to Oulu SIRI Web Service

All information products are published as Web Service interfaces using HTTP transport protocol and SOAP Version 1.1. All interfaces are secured with HTTP Basic Access Authentication and only users with explicit permisson are allowed to download payload data. Credentials are delivered as an offline process according to a separate contract between Infotripla and the data utilizer (See chapter 5 for more details). After receiving the credentials, the WSDL -documents describing the Oulu SIRI interface is accessible from the following URL:

http://transitdata.fi/siri/oulu/OuluSiriServices?wsdl

The actual SIRI Web Service interfaces (ST and PT SOAP requests) can then be called using the following URL:

http://transitdata.fi/siri/oulu/OuluSiriServices

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2.3.1. Requesting the data

In order to receive and utilize the data, a Oulu SIRI Web Service client should be built with the corresponding WSDL document (see above) using SOAP Version 1.1

3. Oulu SIRI Web Service messages

Fundamentally, the payload of SIRI ST and PT request and response -messages comply to SIRI Version 1.4 -schema (available at http://user47094.vs.easily.co.uk/siri//schema/1.4/siri.xsd) but this section aims to give deeper insight what are the relevant variable parts within the exchanged messages. Chapters 3.1 and 3.2 present a message examples and element descriptions with example values for both ST and PT messages.

3.1. SIRI Stop Timetable Service (ST) -messages

Next three subsections describe messages used in SIRI Stop Timetable interface. These messages are request, response and error messages. Elements that are mandatory are colored with green color and elements that are optional are colored with red color. After each message there is also an explanation for the most important elements, and description of the default functionality if optional request elements are missing.

3.1.1. ST Request example message with placeholders

```
<GetStopTimetable xmlns:siri="http://www.siri.org.uk/siri" xmlns="http://oulu.siri.webservice">
    <ServiceRequestInfo>
        <siri:RequestTimestamp>2014-08-23T11:48:05.114+02:00</siri:RequestTimestamp>
        <siri:RequestorRef>SiriTestClient</siri:RequestorRef>
        <siri:MessageIdentifier>SiriTestClient_request_1358934485154</siri:MessageIdentifier>
    </ServiceRequestInfo>
    <Request version="1.4">
        <siri:RequestTimestamp>2014-08-23T11:48:05.164+02:00</siri:RequestTimestamp>
        <siri:DepartureWindow>
            <siri:StartTime>2014-08-23T11:48:05.174+02:00</siri:StartTime>
            <siri:EndTime>2014-08-23T12:48:05.174+02:00</siri:EndTime>
        </siri:DepartureWindow>
        <siri:MonitoringRef>2109</siri:MonitoringRef>
        <siri:LineRef>20</siri:LineRef>
        <siri:DirectionRef>outbound</siri:DirectionRef>
    </Request>
    <RequestExtension/>
</GetStopTimetable>
```

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Element Name	Element Description	Mandatory value
ServiceRequestInfo	Element containing basic request data	Yes
RequestTimestamp	Timestamp for this request	Yes
RequestorRef	Reference to requestor entity	Yes
MessageIdentifier	Unique id for the request message	No
Request	Element containing the actual ST request data	Yes
RequestTimestamp	Timestamp for this ST request	Yes
DepartureWindow	Departure window for ST request, if not defined or request window is too wide, server may automatically restrict the request window **(currently restricted to 60 minutes ahead from start time)**	No
StartTime	Departure window start time	Yes, if DepartureWindow -element exists
EndTime	Departure window end time	Yes, if DepartureWindow -element exists
MonitoringRef	Identifier of a Monitoring point. Basically this is a unique Stop Point Code. **Check valid "MonitoringRef" -element values (Stop point identifiers) from chapter 4 in this document.**	Yes
LineRef	Filter the results to include only data for journeys for the given line **Check valid "LineRef" -element values (Line identifiers) from chapter 4 in this document.**	No
DirectionRef	Filter the results to include only data for journeys running in a specific relative direction. **Possible values are *"inbound"* or *"outbound"*.** If this element is missing, both directions are taken care of.	No
RequestExtension	This is mandatory to align with SIRI-schema, but not used in Oulu SIRI Services. Always used as an empty element in the request	Yes

3.1.2. ST Response example message with placeholders

```xml
<GetStopTimetableResponse xmlns:siri="http://www.siri.org.uk/siri" xmlns="http://oulu.siri.webservice">
    <ServiceDeliveryInfo>
        <siri:ResponseTimestamp>2014-08-23T11:48:05.614+02:00</siri:ResponseTimestamp>
        <siri:ProducerRef>Infotripla_Oy</siri:ProducerRef>
        <siri:ResponseMessageIdentifier>Response_1358934485154</siri:ResponseMessageIdentifier>
        <siri:RequestMessageRef>SiriTestClient_request_1358934485154</siri:RequestMessageRef>
    </ServiceDeliveryInfo>
    <Answer>
        <siri:StopTimetableDelivery version="1.4">
            <siri:ResponseTimestamp>2014-08-23T11:48:05.614+02:00</siri:ResponseTimestamp>
            <siri:Status>true</siri:Status>
            <siri:ValidUntil>2014-12-31T23:59:59.000+02:00</siri:ValidUntil>
            <siri:TimetabledStopVisit>
                <siri:RecordedAtTime>2014-08-23T11:48:05.614+02:00</siri:RecordedAtTime>
                <siri:MonitoringRef>2109</siri:MonitoringRef>
                <siri:TargetedVehicleJourney>
                    <siri:LineRef>20</siri:LineRef>
                    <siri:DirectionRef>outbound</siri:DirectionRef>
                    <siri:PublishedLineName>20</siri:PublishedLineName>
                    <siri:OperatorRef>Oulun_joukkoliikenne</siri:OperatorRef>
                    <siri:JourneyNote>Martinniemi - OSAO</siri:JourneyNote>
                    <siri:TargetedCall>
                        <siri:VisitNumber>13</siri:VisitNumber>
                        <siri:AimedArrivalTime>2014-08-23T12:09:00+02:00</siri:AimedArrivalTime>
                        <siri:AimedDepartureTime>2014-08-23T12:09:00+02:00</siri:AimedDepartureTime>
                    </siri:TargetedCall>
                </siri:TargetedVehicleJourney>
            </siri:TimetabledStopVisit>
        </siri:StopTimetableDelivery>
    </Answer>
    <AnswerExtension/>
</GetStopTimetableResponse>
```

Element Name	Element Description	Mandatory value
ServiceDeliveryInfo	Element containing basic response data	Yes
ResponseTimestamp	Timestamp for this response	Yes
ProducerRef	Information provider	No
ResponseMessageIdentifier	Unique id for this response message	No
RequestMessageRef	If request message had "MessageIdentifier" -element defined, it is echoed back in this element	No
Answer	Element containing actual ST response data	Yes
StopTimetableDelivery	Payload container	Yes
ResponseTimestamp	Timestamp for this ST response	Yes
Status	Whether the complete request could be processed successfully or not. Default is true.	No
ValidUntil	End of data horizon of the data producer	No
TimetabledStopVisit	Data container for a scheduled visit at the stop point. **Element occurs 0..n times** (as many times as there are stops in this stop point with the provided request parameters)	No

RecordedAtTime	Time at which data was recorded	Yes
MonitoringRef	Identifier of stop monitoring point that this stop Visit applies (This is already known by the requestor, since stop point reference is used in the request message)	Yes
TargetedVehicleJourney	Timetabled vehicle journey at this stop point	Yes
LineRef	Reference to the line that this stop applies to	Yes
DirectionRef	Identifies the direction of the journey. Value is "inbound" or "outbound"	Yes
PublishedLineName	Reference to the line name that this stop applies to	No
OperatorRef	Operator of the journey that this stop applies to	No
JourneyNote	Reference to the journey name that this stop applies to	No
TargetCall	Information of the arrival and departure times of the journey that this stop applies to	No
VisitNumber	Sequence of the stop within vehicle journey	Yes (Inside "TargetCall"-element)
AimedArrivalTime	Target arrival time at the stop according to latest working timetable	No
AimedDepartureTime	Target departure time at the stop according to latest working timetable	No
AnswerExtension	This is mandatory to align with SIRI-schema, but not used in Oulu SIRI Services. Always used as an empty element in the response	Yes

3.1.3. ST Error response example message with placeholders

```
<GetStopTimetableResponse xmlns:siri="http://www.siri.org.uk/siri" xmlns="http://oulu.siri.webservice">
    <ServiceDeliveryInfo>
        <siri:ResponseTimestamp>2014-08-23T11:49:53.748+02:00</siri:ResponseTimestamp>
        <siri:ProducerRef>Infotripla_Oy</siri:ProducerRef>
        <siri:ResponseMessageIdentifier>Response_1358934485154</siri:ResponseMessageIdentifier>
        <siri:RequestMessageRef>SiriTestClient_request_1358934485154</siri:RequestMessageRef>
    </ServiceDeliveryInfo>
    <Answer>
        <siri:StopTimetableDelivery version="1.4">
            <siri:ResponseTimestamp>2014-08-23T11:49:53.748+02:00</siri:ResponseTimestamp>
        <siri:Status>false</siri:Status>
        <siri:ErrorCondition>
            <siri:OtherError>
                <siri:ErrorText>Request message was not valid SIRI request</siri:ErrorText>
            </siri:OtherError>
            <siri:Description>Request error</siri:Description>
        </siri:ErrorCondition>
        </siri:StopTimetableDelivery>
    </Answer>
    <AnswerExtension/>
</GetStopTimetableResponse>
```

Element Name	Element Description	Mandatory value
ServiceDeliveryInfo	Element containing basic response data	Yes
ResponseTimestamp	Timestamp for this response	Yes
ProducerRef	Information provider	No
ResponseMessageIdentifier	Unique id for this response message	No
RequestMessageRef	If request message had "MessageIdentifier" -element defined, it is echoed back in this element	No
Answer	Element containing actual ST response data	Yes
StopTimetableDelivery	Payload container	Yes
ResponseTimestamp	Timestamp for this ST error response	Yes
Status	Whether the complete request could be processed successfully or not. Default in error response is "false".	No
ErrorCondition	Container for the error elements	Yes
OtherError	Defines the error type	Yes
ErrorText	Detailed information about the error	No
Description	Short error description	No

3.2. SIRI Production Timetable Service (PT) -messages

Next three subsections describe messages used in SIRI Production Timetable interface. These

messages are request, response and error messages. Elements that are mandatory are colored with green color and elements that are optional are colored with red color. After each message there is also an explanation for the most important elements, and description of the default functionality if optional request elements are missing.

3.2.1. PT Request example message with placeholders

```xml
<GetProductionTimetable xmlns:siri="http://www.siri.org.uk/siri" xmlns="http://oulu.siri.webservice">
    <ServiceRequestInfo>
        <siri:RequestTimestamp>2014-08-08T12:13:40.467+03:00</siri:RequestTimestamp>
        <siri:RequestorRef>SiriTestClient</siri:RequestorRef>
        <siri:MessageIdentifier>SiriTestClient_request_1358934123015</siri:MessageIdentifier>
    </ServiceRequestInfo>
    <Request version="1.4">
        <siri:RequestTimestamp>2014-08-08T12:13:40.467+03:00</siri:RequestTimestamp>
        <siri:ValidityPeriod>
            <siri:StartTime>2014-08-08T16:00:00.000+02:00</siri:StartTime>
            <siri:EndTime>2014-08-08T17:00:00.000+02:00</siri:EndTime>
        </siri:ValidityPeriod>
        <siri:TimetableVersionRef>001</siri:TimetableVersionRef>
        <siri:OperatorRef>Oulun joukkoliikenne</siri:OperatorRef>
        <siri:Lines>
            <siri:LineDirection>
                <siri:LineRef>12</siri:LineRef>
                <siri:DirectionRef>inbound</siri:DirectionRef>
            </siri:LineDirection>
        </siri:Lines>
    </Request>
    <RequestExtension/>
</GetProductionTimetable>
```

Element Name	Element Description	Mandatory value
ServiceRequestInfo	Element containing basic request data	Yes
RequestTimestamp	Timestamp for this request	Yes
RequestorRef	Reference to requestor entity	Yes
MessageIdentifier	Unique id for the request message	No
Request	Element containing the actual PT request data	Yes
RequestTimestamp	Timestamp for this PT request	Yes
ValidityPeriod	Validity (time window) of journeys for which the timetables are to be returned in the PT response. If not defined or request window is too wide, server may automatically restrict the request window. **(currently restricted to 60 minutes ahead from start time)**	No
StartTime	Validity (time window) start time	Yes, if "ValidityPeriod" -element exists
EndTime	Validity (time window) end time	Yes, if "ValidityPeriod" -element exists
TimetableVersionRef	Version of the used timetable	No
OperatorRef	Used to filter the results to include journeys for only the specified operator. **Currently ignored by the service provider**, since all	No

	data in this service refers to Oulun joukkoliikenne	
Lines	Filter the results to include only vehicles along the given line(s) **At the moment service is restricted so, that only one line (one "LineDirection" -element) can be queried at a time in PT request.**	Yes
LineDirection	Container for the queried line	Yes
LineRef	Reference to the line identifier, that the requestor wants to get timetables for. **Check valid "LineRef" -element values (Line identifiers) from chapter 4 in this document.**	Yes
DirectionRef	Line direction for the line, that the requestor wants to get timetables for. **Possible values are *"inbound"* or *"outbound"*.** If missing, both directions are included in the response message	No
RequestExtension	This is mandatory to align with SIRI-schema, but not used in Oulu SIRI Services. Always used as an empty element in the request	Yes

3.2.2.   PT Response example message with placeholders

<GetProductionTimetableResponse xmlns:siri="http://www.siri.org.uk/siri" xmlns="http://oulu.siri.webservice">

```
<ServiceDeliveryInfo>
    <siri:ResponseTimestamp>2014-08-08T11:42:03.654+02:00</siri:ResponseTimestamp>
    <siri:ProducerRef>Infotripla_Oy</siri:ProducerRef>
    <siri:ResponseMessageIdentifier>Response_1358934123015</siri:ResponseMessageIdentifier>
    <siri:RequestMessageRef>SiriTestClient_request_1358934123015</siri:RequestMessageRef>
</ServiceDeliveryInfo>
<Answer>
    <siri:ProductionTimetableDelivery version="1.4">
        <siri:ResponseTimestamp>2014-08-08T11:42:03.654+02:00</siri:ResponseTimestamp>
        <siri:Status>true</siri:Status>
        <siri:ValidUntil>2014-12-31T23:59:59.000+02:00</siri:ValidUntil>
        <siri:DatedTimetableVersionFrame>
            <siri:RecordedAtTime>2014-08-08T11:42:03.654+02:00</siri:RecordedAtTime>
            <siri:VersionRef>1.0</siri:VersionRef>
            <siri:LineRef>12</siri:LineRef>
            <siri:DirectionRef>inbound</siri:DirectionRef>
            <siri:PublishedLineName>12</siri:PublishedLineName>
            <siri:OperatorRef>Oulun_joukkoliikenne</siri:OperatorRef>
            <siri:LineNote>Keskusta - Koskela</siri:LineNote>
            <siri:Monitored>true</siri:Monitored>
            <siri:DatedVehicleJourney>
                <siri:DatedVehicleJourneyCode>1288</siri:DatedVehicleJourneyCode>
                <siri:Monitored>true</siri:Monitored>
                <siri:DatedCalls>
                    <siri:DatedCall>
                        <siri:StopPointRef>1846</siri:StopPointRef>
                        <siri:VisitNumber>1</siri:VisitNumber>
                        <siri:StopPointName>Koskela</siri:StopPointName>
                        <siri:AimedArrivalTime>2014-08-08T16:00:00+02:00</siri:AimedArrivalTime>
                        <siri:AimedDepartureTime>2014-08-08T16:00:00+02:00</siri:AimedDepartureTime>
                    </siri:DatedCall>
                    <siri:DatedCall>
                        <siri:StopPointRef>1825</siri:StopPointRef>
                        <siri:VisitNumber>2</siri:VisitNumber>
                        <siri:StopPointName>Solmutie P</siri:StopPointName>
                        <siri:AimedArrivalTime>2014-08-08T16:01:16+02:00</siri:AimedArrivalTime>
                        <siri:AimedDepartureTime>2014-08-08T16:01:16+02:00</siri:AimedDepartureTime>
                    </siri:DatedCall>
                </siri:DatedCalls>
            </siri:DatedVehicleJourney>
        </siri:DatedTimetableVersionFrame>
    </siri:ProductionTimetableDelivery>
</Answer>
<AnswerExtension/>
<GetProductionTimetableResponse>
```

Element Name	Element Description	Mandatory value
ServiceDeliveryInfo	Element containing basic response data	Yes

ResponseTimestamp	Timestamp for this response	Yes
ProducerRef	Information provider	No
ResponseMessageIdentifier	Unique id for this response message	No
RequestMessageRef	If request message had "MessageIdentifier" -element defined, it is echoed back in this element	No
Answer	Element containing actual PT response data	Yes
ProductionTimetableDelivery	Payload container	Yes
ResponseTimestamp	Timestamp for this PT response	Yes
Status	Whether the complete request could be processed successfully or not. Default is true.	No
ValidUntil	End of data horizon of the data producer	No
DatedTimetableVersionFrame	Payload part of Production Timetable delivery. **Can occur 0..n times.** (as many times as there are timetabled routes with the provided request parameters)	No
RecordedAtTime	Time at which data was recorded	Yes
VersionRef	Timetable version	No
LineRef	Reference to the line that this timetable refers to	Yes
DirectionRef	Reference to the line direction that this timetable refers to. Value is "inbound" or "outbound"	Yes
PublishedLineName	Line name	No
OperatorRef	Reference to line operator	No
LineNote	Additional line note	No
Monitored	Whether vehicle journeys of line are normally monitored. By default this value is "true"	No
DatedVehicleJourney	**Can occur 0..n times.** Complete list of all planned vehicle journeys (trips) for this line and direction	No
DatedVehicleJourneyCode	Identifies the vehicle journey (Unique trip id)	Yes
Monitored	Whether vehicle journeys of line are normally monitored. By default this value is "true"	No
DatedCalls	Complete sequence of stops along the route path, in calling order.	Yes
DatedCall	**Can occur 2..n times**. Element for planned journey stops	Yes
StopPointRef	Reference to a stop point (Unique stop point code)	Yes
VisitNumber	Sequence of stop visit within this journey	No
StopPointName	Stop point name	No
AimedArrivalTime	The arrival time of a vehicle at a stop	No
AimedDepartureTime	The departure time of a vehicle from a stop	No
AnswerExtension	This is mandatory to align with SIRI-schema, but not used in Oulu SIRI Services. Always used as an empty element in the response	Yes

3.2.3. PT Error response example message with placeholders

<GetProductionTimetableResponse xmlns:siri="http://www.siri.org.uk/siri" xmlns="http://oulu.siri.webservice" >
   <ServiceDeliveryInfo>

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```
            <siri:ResponseTimestamp>2014-08-08T11:46:45.539+02:00</siri:ResponseTimestamp>
            <siri:ProducerRef>Infotripla_Oy</siri:ProducerRef>
            <siri:ResponseMessageIdentifier>Response_1358934123015</siri:ResponseMessageIdentifier>
            <siri:RequestMessageRef>SiriTestClient_request_1358934123015</siri:RequestMessageRef>
        </ServiceDeliveryInfo>
        <Answer>
            <siri:ProductionTimetableDelivery version="1.4">
                <siri:ResponseTimestamp>2014-08-08T11:46:45.539+02:00</siri:ResponseTimestamp>
                <siri:Status>false</siri:Status>
                <siri:ErrorCondition>
                    <siri:OtherError>
                        <siri:ErrorText>Invalid request parameters</siri:ErrorText>
                    </siri:OtherError>
                    <siri:Description>Request error</siri:Description>
                </siri:ErrorCondition>
            </siri:ProductionTimetableDelivery>
        </Answer>
    <AnswerExtension/>
</GetProductionTimetableResponse>
```

Element Name	Element Description	Mandatory value
ServiceDeliveryInfo	Element containing basic response data	Yes
ResponseTimestamp	Timestamp for this response	Yes
ProducerRef	Information provider	No
ResponseMessageIdentifier	Unique id for this response message	No
RequestMessageRef	If request message had "MessageIdentifier" -element defined, it is echoed back in this element	No
Answer	Element containing actual PT response data	Yes
ProductionTimetableDelivery	Payload container	Yes
ResponseTimestamp	Timestamp for this PT error response	Yes
Status	Whether the complete request could be processed successfully or not. Default in error response is "false".	No
ErrorCondition	Container for the error elements	Yes
OtherError	Defines the error type	Yes
ErrorText	Detailed information about the error	No
Description	Short error description	No

4. Valid reference values in ST and PT queries

Chapters 4.1 and 4.2 give some information about the stop point references and line references that are currently used in Oulu SIRI Services. However, in the future the official and static stop

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point and line/route information will be provided by the City of Oulu. This is why the information in next chapters 4.1 and 4.2 for reference stop points and line references may be changed in the future.

If you have some questions about the static stop point/route data, please contact Infotripla's customer service (see chapter 6)

4.1. Valid stop point reference values (ST Service)

Stop points are referenced by their id in ST Request and ST Response -messages (element name "MonitoringRef") In Oulu SIRI ST Service valid stop point ids are values between 1053 and 9021 as well as 10000.

Some examples. Stop point with id 1053, which refers to "Yli-Iin keskusta E" or 10000, which refers to "Toripakka P2" etc..

The existing bus stops can be found in the file google_transit.zip.

4.2. Valid line reference values (both PT and ST Services)

Bus lines are referenced by their line name identifier, which is usually the line number for a certain journey (element name "LineRef"). In the list below are the possible line numbers that are valid in Oulu SIRI Service queries. Bus lines has normally two directions, but there are few exceptions. The main direction is the same as the name of route. The secondary direction is the opposite direction.

The existing lines can be found in the file google_transit.zip.

5. Requesting access to Oulu SIRI Web Service

All Oulu SIRI -interfaces are secured with HTTP Basic Access Authentication and only users with explicit permisson are allowed to download payload data. Credentials are delivered as an offline process according to a separate contract between Infotripla and the data utilizer. To proceed with credentials and getting authorized access to the service, contact Infotripla's customer service (see chapter 6)

6. Customer service, help and assistance

Infotripla will provide help and technical support to anyone wishing to use the Oulu SIRI data

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services. Should there be any questions or special needs like customizing the services to match your requirements, we encourage to discuss with us. Also, any feedback for improving this documentation is welcome. Infotripla's customer service can be contacted from:

www.infotripla.fi/helpdesk