



**PubTrans® 5**

## **SIRI–SX Producer 2.0 Interface Specification**

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# SIRI–SX Producer Interface Specification

This document is part of the definition and design of the Hogia PubTrans system. The design of the Hogia PubTrans system is the property of Hogia Public Transport Systems.

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# 1 Introduction

## 1.1 Document Objectives

This document describes the SIRI-SX interface between PubTrans SIRI-SX producer and external consumers.

## 1.2 Change Notes

## 1.3 Terminology

| Term                        | Definition                                                                                                                                                                                              |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SIRI</b>                 | Service Interface for Real Time Information.                                                                                                                                                            |
| <b>GID</b>                  | Global Identifier. 16 digit number in central repository with specific format.                                                                                                                          |
| <b>LINE</b>                 | A group of ROUTEs which is generally known to the public by a similar name or number (Transmodel).                                                                                                      |
| <b>SCHEDULED STOP POINT</b> | A POINT where passengers can board or alight from vehicles.<br>Note that in SIRI 1.0 was called STOP POINT. It has been renamed to SCHEDULED STOP POINT to distinguish it from STOP PLACE (Transmodel). |
| <b>SITUATION</b>            | A set of traffic/travel circumstances linked by a causal relationship which apply to a common set of locations. A SITUATION can be composed of SITUATION elements (Trident/SIRI).                       |

## 2 SIRI Situation Exchange

### 2.1 Overview

Public transport services rely increasingly on information systems to ensure reliable, efficient operation and widely accessible, accurate passenger information.

Service Interface for Real-time Information (SIRI) is intended to be used to exchange information between servers containing real-time public transport vehicle or journey time data.

SIRI Situation Exchange (SIRI-SX) is focused on providing situation information.

This document describes how to interface the PubTrans SIRI-SX Provider Service using the SIRI Publish/Subscribe pattern of exchange with the Direct Delivery as delivery pattern.

The PubTrans SIRI-SX producer system will also support the SIRI Request/Reply pattern with direct delivery.

### 2.2 Process

The subscription is initiated when an external SIRI-SX consumer sends a Subscription Request to the subscription service of the PubTrans SIRI-SX producer system.

PubTrans SIRI-SX producer system will then respond with a Subscription Response verifying that the request was handled and thereafter start sending real-time information contained in service deliveries from its producer service.

Information regarding several situations may be sent in the same Service Delivery to avoid overloading the message exchange.

PubTrans SIRI-SX producer service will keep sending information until the subscription is terminated or the lease time (InitialTerminationTime) from the subscription request expires.

### 2.3 Content

SIRI has a comprehensive data model with many optional and alternative elements and attributes. It is possible to further extend the model by including custom XML in the Extension elements that are defined throughout the SIRI data model.

The SIRI specification recommends that the details about what messages, elements and content to actually exchange in a specific context should be specified in advance between the participants. This document specifies the PubTrans SIRI interface in detail with actual provided and expected content element by element. Message exchange sequences and content usage are described for some common scenarios.

Dynamic requests involving the Capability and Permission matrices and Detail-level filtering are not supported.

## 2.4 SIRI Version

The PubTrans SIRI-SM Producer service provides and expects information according to the coming SIRI 2.0 as submitted for voting to CEN from CEN TC278 WG3 SG7. See link to [XSD-Schema](#) for the coming EN V2.0 on the VDV website. The elements supported are stated in the sections below.

## 2.5 Transport Protocol

PubTrans SIRI-SX producer service uses and expects SOAP compatible with *siri\_wsProducer-Document.wsdl* and *siri\_wsConsumer-Document.wsdl*.

## 2.6 Understanding Incremental Updates

To reduce the amount of data transferred from producer to consumer the SIRI concept of *incremental updates* has been applied with an optimised approach.

Using this mechanism the same information is not repeated over and over again, instead only updated attributes for a SituationElement are transferred, and only updates for those SituationElements that have any updates are transferred.

There are some exceptions to this reduction mechanism; the delivered updates must be valid in accordance with the applicable SIRI XML Schema definitions. This means that mandatory elements will always be included when their parent element is included in the update, whether their content is changed or not.

Note that this reduction mechanism does not rule out that updates occasionally include previously transferred values for technical reasons or as a feature for consumers.

## 2.7 Date and time format

All timestamps are stated in UTC (Coordinated Universal Time). The use of UTC avoids problems with changeover between summer and winter time zones. Differences from the UTC time zone are coded in accordance with ISO 8601 (e.g.: 2013-04-07T18:39:00+01:00).

In accordance with ISO 8601, if no time difference is given, the time is in UTC; this may be further indicated by the presence of a Z suffix (2013-04-30T12:00:00 corresponds to 2013-04-30T12:00:00Z). In other words, the first 19 characters are obligatory and correspond to local time or UTC.

Time units less than one second are ignored.

## 3 Subscriptions

To start a subscription the external SIRI-SX consumer system should send a subscription request to the subscribe endpoint of the PubTrans SIRI-SX producer system.

If a subscription request is submitted with the same SubscriptionIdentifier as a subscription that already exists, the existing subscription will be deleted and a new subscription created in its place. Logically this is the same as sending a DeleteSubscription message, followed by a new Subscribe request message to create a new subscription.

### 3.1 Subscribe

The Subscribe method is the WSDL equivalent of the SubscriptionRequest.

These are the attribute we expect in the Subscribe request:

| Attributes                             |     | Description                                           |
|----------------------------------------|-----|-------------------------------------------------------|
| SubscriptionRequestInfo                | 1:1 |                                                       |
| - RequestTimestamp                     | 1:1 | Timestamp of the request                              |
| - Address                              | 0:1 | URL of the consumer                                   |
| - RequestorRef                         | 1:1 | Pre-determined Participant Reference of the consumer. |
| Request                                | 1:1 |                                                       |
| - SituationExchangeSubscriptionRequest | 1:* | See separate section below                            |
| RequestExtension                       | 1:1 | Ignored.                                              |

## 3.2 SituationExchangeSubscriptionRequest

| Attributes               |     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SubscriptionIdentifier   | 1:1 | Identifier for the subscription that is unique in scope of the subscriber, i.e. unique in scope of the consumers pre-determined Participant Reference (=RequestorRef).                                                                                                                                                                                                                                                                                                                                                                  |
| InitialTerminationTime   | 1:1 | End time for this subscription. After this time no more messages will be sent from the producer.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| SituationExchangeRequest | 1:1 | See separate section below.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| IncrementalUpdates       | 1:1 | <p>Must be set to <b>true</b>.</p> <p>Observe that “incremental updates” in this context is interpreted as a restriction to only provide situation elements for those situations that have been updated since last ServiceDelivery and only providing the updated elements in those situation elements. There are however some exceptions to this rule. Some sub-elements will always be provided if they have a value even though they have not changed since last delivery. These elements are noted in the detailed description.</p> |

## 3.3 SituationExchangeRequest

| Attributes       |     | Description                                                                           |
|------------------|-----|---------------------------------------------------------------------------------------|
| RequestTimestamp | 1:1 | Timestamp of the request                                                              |
| LineRef          | 0:* | Filter the results to include only information relating to the specified LINES.       |
| StopPointRef     | 0:1 | Filter the results to include only information relating to this SCHEDULED STOP POINT. |

## 3.4 Sample Subscribe

```
<wsdl:Subscribe xmlns:wsdl="http://wsdl.siri.org.uk"
xmlns:siri="http://www.siri.org.uk/siri" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="http://wsdl.siri.org.uk file:///C:/Stuff/Siri/SiriXml-
v2.0h/xsd/wsdl_model/siri_wsProducer-Framework.xsd">
  <SubscriptionRequestInfo>
    <siri:RequestTimestamp>2013-09-05T15:45:47+02:00</siri:RequestTimestamp>
    <siri:Address>http://127.0.0.1:9003</siri:Address>
    <siri:RequestorRef>XYZ_CONSUMER</siri:RequestorRef>
  </SubscriptionRequestInfo>
  <Request>
    <siri:SituationExchangeSubscriptionRequest>
      <siri:SubscriptionIdentifier>S9025014004440001</siri:SubscriptionIdentifier>
      <siri:InitialTerminationTime>2013-09-
07T15:45:47+02:00</siri:InitialTerminationTime>
      <siri:SituationExchangeRequest version="2.0">
        <siri:RequestTimestamp>2013-09-05T15:45:47+02:00</siri:RequestTimestamp>
        <siri:StartTime>2013-09-07T15:40:00+02:00</siri:StartTime>
        <siri:LineRef>BCD</siri:LineRef>
        <siri:StopPointRef>CDE</siri:StopPointRef>
      </siri:SituationExchangeRequest>
      <siri:IncrementalUpdates>true</siri:IncrementalUpdates>
    </siri:SituationExchangeSubscriptionRequest>
  </Request>
  <RequestExtension/>
</wsdl:Subscribe>
```

### 3.5 SubscribeResponse

When the subscription service of PubTrans SIRI SX producer system receives a Subscribe request it should answer with a SubscribeResponse verifying the request.

The SubscribeResponse is the WSDL equivalent of the SubscriptionResponse.

| Attributes             |     | Description                                                             |
|------------------------|-----|-------------------------------------------------------------------------|
| SubscriptionAnswerInfo | 1:1 |                                                                         |
| - ResponseTimestamp    | 1:1 | Time individual response element was created.                           |
| - ResponderRef         | 0:1 | Pre-determined Participant reference of the producer.<br>(=ProducerRef) |
| Answer                 | 1:1 |                                                                         |
| - ResponseStatus       | 1:* | Status information about the request, or else error conditions.         |
| - ServiceStartTime     | 0:1 | Time the producer service started                                       |
| AnswerExtension        | 1:1 | Always empty.                                                           |

### 3.6 ResponseStatus

| Attributes        |     | Description                                                                                                  |
|-------------------|-----|--------------------------------------------------------------------------------------------------------------|
| ResponseTimestamp | 1:1 | Time individual response element was created.                                                                |
| SubscriptionRef   | 1:1 | This is a reference to the SubscriptionIdentifier of the corresponding SituationExchangeSubscriptionRequest. |
| Status            | 0:1 | Whether the request could be processed successfully or not. Default is true.                                 |
| ErrorCondition    | 0:1 | Error conditions that apply to a service request.                                                            |

If an error occurs then an ErrorCondition element will be included containing one of the 15 valid error elements according to the SIRI standard and also a Description if applicable.

## 3.7 Sample response

Here is a sample of a subscription response.

```
<wsdl:SubscribeResponse xmlns:wsdl="http://wsdl.siri.org.uk"
xmlns:siri="http://www.siri.org.uk/siri" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="http://wsdl.siri.org.uk file:///C:/Siri/SiriXml-
v2.0h/xsd/wsdl_model/siri_wsProducer-Framework.xsd">
  <SubscriptionAnswerInfo>
    <siri:ResponseTimestamp>2013-09-05T15:45:48.6027508+02:00</siri:ResponseTimestamp>
    <siri:ResponderRef>PubTransSXProducer</siri:ResponderRef>
  </SubscriptionAnswerInfo>
  <Answer>
    <siri:ResponseStatus>
      <siri:ResponseTimestamp>2013-09-05T15:45:48.6027508+02:00</siri:ResponseTimestamp>
      <siri:SubscriptionRef>S9025014004440001</siri:SubscriptionRef>
      <siri:Status>true</siri:Status>
    </siri:ResponseStatus>
    <siri:ResponseStatus>
      <siri:ResponseTimestamp>2013-09-05T15:45:48.6027508+02:00</siri:ResponseTimestamp>
      <siri:SubscriptionRef>S9025014004440002</siri:SubscriptionRef>
      <siri:Status>false</siri:Status>
      <siri:ErrorCondition>
        <siri:NoInfoForTopicError/>
      </siri:ErrorCondition>
    </siri:ResponseStatus>
    <siri:ResponseStatus>
      <siri:ResponseTimestamp>2013-09-05T15:45:48.6027508+02:00</siri:ResponseTimestamp>
      <siri:SubscriptionRef>S9025014004440003</siri:SubscriptionRef>
      <siri:Status>false</siri:Status>
      <siri:ErrorCondition>
        <siri:OtherError/>
        <siri:Description>Gas alert: XYZ</siri:Description>
      </siri:ErrorCondition>
    </siri:ResponseStatus>
    <siri:ServiceStartedTime>2013-09-05T12:15:47.6027123+02:00</siri:ServiceStartedTime>
  </Answer>
  <AnswerExtension/>
</wsdl:SubscribeResponse>
```

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## 4 Alive handling

### 4.1.1 Using Heartbeats

Heartbeats can be provided from the PubTrans SIRI-SX producer service.

If used, heartbeats will be sent with a pre-defined frequency. A single heartbeat message is sent for each subscriber channel.

If no heartbeats or other messages from the producer service have been received within a configured duration the consumer should try to re-subscribe to the service.

Also; if the ServiceStartTime of the heartbeat notification differs from what was last received, it is assumed that the producer has restarted, and the consumer should then re-subscribe.

### 4.1.2 Using CheckStatusRequests

As an alternative to using heartbeats, the consumer can instead check if the producer is alive by sending CheckStatus requests to the producer at pre-defined intervals. If the returned ServiceStartTime of the CheckStatusResponse differs from what was last received, it can be assumed that the producer has restarted, and the consumer should then re-subscribe.

## 4.2 Re-subscription

It is the responsibility of the consumer to assure that the subscriptions are alive and re-subscribe if needed.

If the consumer does not reuse the same SubscriptionIdentifier values for the same subscribed content when re-subscribing it should send a DeleteSubscriptionRequest before sending the Subscribe request to avoid the risk of duplicate subscriptions.

### 4.3 NotifyHeartbeat

| Attributes         |     | Description                                                                |
|--------------------|-----|----------------------------------------------------------------------------|
| HeartbeatNotify    | 1:1 |                                                                            |
| - RequestTimestamp | 1:1 | Time of Heartbeat Notification                                             |
| - ProducerRef      | 0:1 | Pre-determined participant reference of the producer.                      |
| Notification       | 1:1 |                                                                            |
| - Status           | 0:1 | Whether the service is available. False if not available. Default is true. |
| - ErrorCondition   | 0:1 | Error conditions that apply to the heartbeat notification.                 |
| - ServiceStartTime | 0:1 | Specifies the time of the start of the service.                            |
| SiriExtension      | 1:1 | Always empty.                                                              |

### 4.4 Sample Heartbeat Notification

```
<wsdl:NotifyHeartbeat xmlns:wsdl="http://wsdl.siri.org.uk"
xmlns:siri="http://www.siri.org.uk/siri" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="http://wsdl.siri.org.uk file:///C:/Siri/SiriXml-
v2.0h/xsd/wsdl_model/siri_wsConsumer-Framework.xsd">
  <HeartbeatNotifyInfo>
    <siri:RequestTimestamp>2013-10-03T09:49:04.838471+02:00</siri:RequestTimestamp>
    <siri:ProducerRef>PubTransSXProducer</siri:ProducerRef>
  </HeartbeatNotifyInfo>
  <Notification>
    <siri:Status>true</siri:Status>
    <siri:ServiceStartTime>2013-10-03T05:49:04.838471+02:00</siri:ServiceStartTime>
  </Notification>
  <SiriExtension/>
</wsdl:NotifyHeartbeat>
```

## 4.5 CheckStatus

If the consumer wishes to determine whether the service is still “alive”, it sends a CheckStatus request to the producers CheckStatus endpoint and waits for the reply (CheckStatusResponse).

The CheckStatus method is the WSDL equivalent of the CheckStatusRequest.

| Attributes         |     | Description                                           |
|--------------------|-----|-------------------------------------------------------|
| Request            | 1:1 |                                                       |
| - RequestTimestamp | 1:1 | Time of the request                                   |
| - RequestorRef     | 1:1 | Pre-determined participant reference of the consumer. |
| RequestExtension   | 1:1 | Ignored.                                              |

## 4.6 Sample check status request

```
<wsdl:CheckStatus xmlns:wsdl="http://wsdl.siri.org.uk"
xmlns:siri="http://www.siri.org.uk/siri" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="http://wsdl.siri.org.uk file:///C:/Siri/SiriXml-
v2.0h/xsd/wsdl_model/siri_wsProducer-Framework.xsd">
  <Request>
    <siri:RequestTimestamp>2013-10-03T09:49:04.838471+02:00</siri:RequestTimestamp>
    <siri:RequestorRef>XYZ_CONSUMER</siri:RequestorRef>
  </Request>
  <RequestExtension/>
</wsdl:CheckStatus>
```

## 4.7 CheckStatusResponse

The CheckStatusResponse indicates the availability of the producer. If the system is completely unavailable there will be no reply.

| Attributes            |     | Description                                                                                                                     |
|-----------------------|-----|---------------------------------------------------------------------------------------------------------------------------------|
| CheckStatusAnswerInfo | 1:1 |                                                                                                                                 |
| - ResponseTimestamp   | 1:1 | Time of the response.                                                                                                           |
| - ProducerRef         | 1:1 | Pre-determined participant reference of the producer.                                                                           |
| Answer                | 1:1 |                                                                                                                                 |
| - Status              | 0:1 | Whether the service is available. False if not available. Default is true.                                                      |
| - ErrorCondition      | 0:1 | Error Condition that applies to a CheckStatusResponse.                                                                          |
| - ServiceStartedTime  | 0:1 | Specifies the time of the start of the service. If the service is not available to deliver data, no value should be given here. |
| AnswerExtension       | 1:1 | Always empty.                                                                                                                   |

If an error occurs then an ErrorCondition element will be included containing one of the two valid error elements according to the SIRI standard and also a Description if applicable.

## 4.8 Sample check status response

```
<wsdl:CheckStatusResponse xmlns:wsdl="http://wsdl.siri.org.uk"
xmlns:siri="http://www.siri.org.uk/siri" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="http://wsdl.siri.org.uk file:///C:/Siri/SiriXml-
v2.0h/xsd/wsdl_model/siri_wsProducer-Framework.xsd">
  <CheckStatusAnswerInfo>
    <siri:ResponseTimestamp>2013-10-03T09:49:04.838471+02:00</siri:ResponseTimestamp>
    <siri:ProducerRef>PubTransSXProducer</siri:ProducerRef>
  </CheckStatusAnswerInfo>
  <Answer>
    <siri:Status>true</siri:Status>
    <siri:ServiceStartedTime>2013-10-03T05:49:04.838471+02:00</siri:ServiceStartedTime>
  </Answer>
  <AnswerExtension/>
</wsdl:CheckStatusResponse>
```

## 5 Establishing current state at start of subscription

The producer will not send all current situation information when starting a subscription, instead updates will be sent as they occur. If the consumer wants all data to be sent out on subscription start the consumer should send a DataSupply request to get that information.

### 5.1 DataSupply

To initiate the process the consumer sends a DataSupply request message to the GetData endpoint of the producer and waits for a reply (DataSupplyResponse).

The DataSupply method is the WSDL equivalent of the DataSupplyRequest.

| Attributes            |     | Description                                                                                                      |
|-----------------------|-----|------------------------------------------------------------------------------------------------------------------|
| DataSupplyRequestInfo | 1:1 |                                                                                                                  |
| - RequestTimestamp    | 1:1 | Time individual data supply request was created.                                                                 |
| - ConsumerRef         | 0:1 | Pre-determined participant reference of the consumer.                                                            |
| Request               | 1:1 |                                                                                                                  |
| - AllData             | 0:1 | Always set to <b>true</b> to signify that all current information for all subscribed vehicles is to be returned. |
| RequestExtension      | 1:1 | Ignored.                                                                                                         |

### 5.2 Sample DataSupply

```
<wsdl:DataSupply xmlns:wsdl="http://wsdl.siri.org.uk"
xmlns:siri="http://www.siri.org.uk/siri" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="http://wsdl.siri.org.uk file:///C:/Siri/SiriXml-
v2.0h/xsd/wsdl_model/siri_wsProducer-Framework.xsd">
  <DataSupplyRequestInfo>
    <siri:RequestTimestamp>2013-10-03T09:49:04.838471+02:00</siri:RequestTimestamp>
    <siri:ConsumerRef>XYZ_CONSUMER</siri:ConsumerRef>
  </DataSupplyRequestInfo>
  <Request>
    <siri:AllData>true</siri:AllData>
  </Request>
  <RequestExtension/>
</wsdl:DataSupply>
```

## 5.3 DataSupplyResponse

In response to the DataSupply request the producer will supply all current data matching the subscriptions for that subscriber

| Attributes                  |     | Description                                                                 |
|-----------------------------|-----|-----------------------------------------------------------------------------|
| DataSupplyAnswerInfo        | 1:1 |                                                                             |
| - ResponseTimestamp         | 1:1 | Time of the response.                                                       |
| - ProducerRef               | 0:1 | Pre-determined participant reference of the producer.                       |
| Answer                      | 1:1 |                                                                             |
| - SituationExchangeDelivery | 1:* | See "Situation Exchange messages" chapter for details and examples of this. |
| AnswerExtension             | 1:1 | Always empty.                                                               |

## 5.4 DataSupplyResponse sample

```
<wsdl:DataSupplyResponse xmlns:wsdl="http://wsdl.siri.org.uk"
xmlns:siri="http://www.siri.org.uk/siri" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="http://wsdl.siri.org.uk file:///C:/Siri/SiriXml-
v2.0h/xsd/wsdl_model/siri_wsProducer-Framework.xsd">
  <DataSupplyAnswerInfo>
    <siri:ResponseTimestamp>2013-08-16T14:11:24.0346742+02:00</siri:ResponseTimestamp>
    <siri:ProducerRef>PubTransSMProducer</siri:ProducerRef>
  </DataSupplyAnswerInfo>
  <Answer>
    <siri:SituationExchangeDelivery version="2.0">
      <!--See "Sample NotifySituationExchange" in the "Situation Exchange messages" chap-
ter for sample contents of a SituationExchangeDelivery-->
    </siri:SituationExchangeDelivery>
  </Answer>
  <AnswerExtension/>
</wsdl:DataSupplyResponse>
```

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## 6 Updating current state

When the subscription is established each relevant update is reported.

The information is wrapped within a `ServiceDelivery` which contains one or more `SituationExchangeDelivery` elements (one per subscription). Each `SituationExchangeDelivery` contains one or several `Situation Elements` covered by the subscription.

Information concerning a situation may be cached for a short time so that it can be sent together with updates of situations in the same `Service Delivery` to avoid overloading the message exchange.

Note that `Situation Elements` will only be included in the `Service Delivery` for those situations that have updated information and that normally only updated sub-elements of the `Situation Element` will be provided.

## 7 Terminate Subscriptions

### 7.1 DeleteSubscription

The consumer terminates its subscriptions to a service by sending a DeleteSubscription request to the ManageSubscriptions endpoint of the producer. A DeleteSubscription request may contain either one or more specific subscription identifiers, or a special value of **All**, indicating that all subscriptions for the subscriber should be terminated.

The DeleteSubscription method is the WSDL equivalent of the TerminateSubscriptionRequest.

| Attributes             |     | Description                                           |
|------------------------|-----|-------------------------------------------------------|
| DeleteSubscriptionInfo | 1:1 |                                                       |
| - RequestTimestamp     | 1:1 | Creation time of notice of change message.            |
| - RequestorRef         | 1:1 | Pre-determined Participant Reference of the consumer. |
| Request                | 1:1 |                                                       |
| - All                  | 0:1 | Terminate all subscriptions for the Subscriber.       |
| - SubscriptionRef      | 0:* | Identifies a specific subscription to be terminated.  |
| RequestExtension       | 1:1 | Ignored.                                              |

Observe that either **All** or one or more **SubscriptionRef** should be supplied.

### 7.2 Sample DeleteSubscription

Sample 1:

```
<wsdl:DeleteSubscription xmlns:wsdl="http://wsdl.siri.org.uk"
xmlns:siri="http://www.siri.org.uk/siri" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="http://wsdl.siri.org.uk file:///C:/Siri/SiriXml-
v2.0h/xsd/wsdl_model/siri_wsProducer-Framework.xsd">
  <DeleteSubscriptionInfo>
    <siri:RequestTimestamp>2013-10-03T09:49:04.838471+02:00</siri:RequestTimestamp>
    <siri:RequestorRef>XYZ_CONSUMER</siri:RequestorRef>
  </DeleteSubscriptionInfo>
  <Request>
    <siri:SubscriptionRef>S9025014004440001</siri:SubscriptionRef>
    <siri:SubscriptionRef>S9025014004440002</siri:SubscriptionRef>
  </Request>
  <RequestExtension/>
</wsdl:DeleteSubscription>
```

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Sample 2:

```
<wsdl:DeleteSubscription xmlns:wsdl="http://wsdl.siri.org.uk"
xmlns:siri="http://www.siri.org.uk/siri" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="http://wsdl.siri.org.uk file:///C:/Siri/SiriXml-
v2.0h/xsd/wsdl_model/siri_wsProducer-Framework.xsd">
  <DeleteSubscriptionInfo>
    <siri:RequestTimestamp>2013-10-03T09:49:04.838471+02:00</siri:RequestTimestamp>
    <siri:RequestorRef>XYZ_CONSUMER</siri:RequestorRef>
  </DeleteSubscriptionInfo>
  <Request>
    <siri:All/>
  </Request>
  <RequestExtension/>
</wsdl:DeleteSubscription>
```

## 7.3 DeleteSubscriptionResponse

The producer will send a DeleteSubscriptionResponse with an acknowledgment or error code for each subscription that is to be terminated.

The DeleteSubscriptionResponse method is the WSDL equivalent of the TerminateSubscriptionResponse.

| Attributes                   |     | Description                                                                  |
|------------------------------|-----|------------------------------------------------------------------------------|
| DeleteSubscriptionAnswerInfo | 1:1 |                                                                              |
| - ResponseTimestamp          | 1:1 | Creation time of response.                                                   |
| - ResponderRef               | 1:1 | Identifies the Producer.                                                     |
| Answer                       | 1:1 |                                                                              |
| - TerminationResponseStatus  | 1:* | Status of each response to each subscription termination. See below section. |
| AnswerExtension              | 1:1 | Always empty.                                                                |

## 7.4 TerminateResponseStatus

| Attributes        |     | Description                                                                        |
|-------------------|-----|------------------------------------------------------------------------------------|
| ResponseTimestamp | 0:1 | Creation time of response status                                                   |
| SubscriberRef     | 0:1 | Pre-determined Participant Reference of the subscribing consumer.                  |
| SubscriptionRef   | 1:1 | This is a reference to the SubscriptionIdentifier of the subscription in question. |
| Status            | 0:1 | Whether the subscription could be cancelled. Default is true.                      |
| ErrorCondition    | 0:1 | Error Condition that applies to a TerminateSubscriptionResponse.                   |

If an ErrorCondition occurs then an ErrorCondition element should be included containing one of the 4 valid error elements according to the SIRI standard and also a Description if applicable.

## 7.5 Sample termination response

```
<wsdl:DeleteSubscriptionResponse xmlns:wsdl="http://wsdl.siri.org.uk"
xmlns:siri="http://www.siri.org.uk/siri" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="http://wsdl.siri.org.uk file:///C:/Siri/SiriXml-
v2.0h/xsd/wsdl_model/siri_wsProducer-Framework.xsd">
  <DeleteSubscriptionAnswerInfo>
    <siri:ResponseTimestamp>2013-10-03T09:49:04.838471+02:00</siri:ResponseTimestamp>
    <siri:ResponderRef>PubTransSXProducer</siri:ResponderRef>
  </DeleteSubscriptionAnswerInfo>
  <Answer>
    <siri:ResponseTimestamp>2013-10-03T09:49:04.838471+02:00</siri:ResponseTimestamp>
    <siri:TerminationResponseStatus>
      <siri:SubscriberRef>XYZ_CONSUMER</siri:SubscriberRef>
      <siri:SubscriptionRef>S9025014004440001</siri:SubscriptionRef>
      <siri>Status>true</siri>Status>
    </siri:TerminationResponseStatus>
    <siri:TerminationResponseStatus>
      <siri:SubscriberRef>XYZ_CONSUMER</siri:SubscriberRef>
      <siri:SubscriptionRef>S9025014004440002</siri:SubscriptionRef>
      <siri>Status>false</siri>Status>
      <siri>ErrorCondition>
        <siri:UnknownSubscriptionError/>
      </siri>ErrorCondition>
    </siri:TerminationResponseStatus>
  </Answer>
  <AnswerExtension/>
</wsdl:DeleteSubscriptionResponse>
```

## 8 Situation Exchange messages

This section describes the content of the service deliveries sent from the producer to the consumer.

### 8.1 NotifySituationExchange

The NotifySituationExchange method is the WSDL equivalent of the ServiceDelivery for SIRI-VM.

| Attributes                  |     | Description                                             |
|-----------------------------|-----|---------------------------------------------------------|
| ServiceDeliveryInfo         | 1:1 |                                                         |
| - ResponseTimestamp         | 1:1 | Time individual response element was created.           |
| - ProducerRef               | 0:1 | Participant reference that identifies producer of data. |
| Notification                | 1:1 |                                                         |
| - SituationExchangeDelivery | 1:* | See separate section below                              |
| SiriExtensions              | 1:1 | Ignored.                                                |

### 8.2 SituationExchangeDelivery

| Attributes           |     | Description                                                                                                                                                                                        |
|----------------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ResponseTimestamp    | 1:1 | Time individual response element was created.                                                                                                                                                      |
| SubscriberRef        | 0:1 | Required if Delivery is for a Subscription. Participant Reference of Subscriber.                                                                                                                   |
| SubscriptionRef      | 0:1 | Required if Delivery is for a Subscription. Identifier of Subscription issued by Requestor. Unique within Subscriber (i.e. within ParticipantRef of Subscriber), and SIRI Functional Service type. |
| Situations           | 0:1 | SITUATIONS in the delivery.                                                                                                                                                                        |
| - PtSituationElement | 0:* | Description of a situation. See separate section.                                                                                                                                                  |

## 8.3 PtSituationElement

| Attributes             |     | Description                                                                          |
|------------------------|-----|--------------------------------------------------------------------------------------|
| CreationTime           | 1:1 | Time of the creation of the SITUATION.                                               |
| SituationNumber        | 1:1 | Unique identifier of SITUATION within Participant. Excludes any version number.      |
| Version                | 0:1 | Unique identifier of update version within a SITUATION.                              |
| Source                 | 1:1 | Information about source of information, See separate section.                       |
| - SourceType           | 1:1 | Provided with fixed value ' <b>other</b> '.                                          |
| - AgentReference       | 0:1 | Reference to an Agent, i.e. name or signature of the person reporting the SITUATION. |
| - Name                 | 0:1 | Reference to the organisation or organisational unit reporting the SITUATION.        |
| - TimeOfCommunication  | 0:1 | Official registration time of the message, if different from creation time.          |
| - ExternalCode         | 0:1 | External system reference related to SITUATION.                                      |
| <PtSituationBodyGroup> | 1:1 | Body of SITUATION. See separate section.                                             |

## 8.4 PtSituationBodyGroup

| Attributes      |     | Description                                                                                                                                                        |
|-----------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ValidityPeriod  | 1:* | Overall inclusive Period of applicability of SITUATION. This is to be used for describing the period the information in the Situation Element should be published. |
| - StartTime     | 1:1 | The start time stamp.                                                                                                                                              |
| - EndTime       | 0:1 | The end time stamp. If omitted, the range end is open-ended, that is, it should be interpreted as "forever".                                                       |
| UndefinedReason | 1:1 | Empty element.                                                                                                                                                     |
| Priority        | 0:1 | Arbitrary rating of priority 1- High.                                                                                                                              |
| Audience        | 0:1 | Intended audience of SITUATION. Normally only to be exposed to the public if it has the value <b>public</b> , which is the default value.                          |
| Summary         | 0:1 | Summary of SITUATION.<br>(one per language)                                                                                                                        |
| Description     | 0:1 | Description of SITUATION.<br>(one per language)                                                                                                                    |
| Detail          | 0:1 | Additional descriptive details about the SITUATION<br>(one per language)                                                                                           |
| Internal        | 0:1 | Internal information not meant to be exposed to the public.                                                                                                        |
| InfoLinks       | 0:1 | Hyperlinks to other resources associated with SITUATION.                                                                                                           |
| - InfoLink      | 1:* | Hyperlink description.                                                                                                                                             |
| - Uri           | 1:1 | URI for link.                                                                                                                                                      |
| Extensions      | 0:1 | May contain message variants. See separate section about "MessageVariant Extensions".                                                                              |

## 8.5 MessageVariant Extensions

Sometimes there is a need to express information in more than one way. An example is when information shall be provided as both text and audio. Although there exist ways to synthesise speech from text, this is

not always available, so instead text and audio have to be provided in parallel. Another example is that some media allows verbose information, while other requires that the information is very compact. To deal with this, it is possible to provide custom SITUATION descriptions using message variants.

Since this isn't support in SIRI-SX by default, we have added this as an extension.

| Attributes     |     | Description                                                                                                                                                                                                                                          |
|----------------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MessageVariant | 0:* | Description of SITUATION adapted to a certain usage.                                                                                                                                                                                                 |
| - Content      | 1:1 | Content of the message variant.                                                                                                                                                                                                                      |
| - ContentType  | 1:1 | A content type that tells the consumer how to interpret the content. Example: 'text/plain' or 'urn/mp3', the latter describing that the content is a hyperlink to an mp3 audio file.                                                                 |
| - UsageType    | 1:1 | A usage type that tells the consumer of recommended usage of the content, i.e. if it is adapted to media with some limitation, for instance short texts adapted for displays with limited number of characters. Example: 'audio/short', 'text/long'. |

## 8.6 Sample delivery

```
<wsdl:NotifySituationExchange xmlns:wsdl="http://wsdl.siri.org.uk"
xmlns:siri="http://www.siri.org.uk/siri" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="http://wsdl.siri.org.uk file:///C:/Stuff/Siri/SiriXml-
v2.0h/xsd/wsdl_model/siri_wsConsumer-Services.xsd">
  <ServiceDeliveryInfo>
    <siri:ResponseTimestamp>2013-12-17T09:30:47Z</siri:ResponseTimestamp>
    <siri:ProducerRef>PubTransSXProducer</siri:ProducerRef>
  </ServiceDeliveryInfo>
  <Notification>
    <siri:SituationExchangeDelivery version="2.0">
      <siri:ResponseTimestamp>2013-12-17T09:30:47Z</siri:ResponseTimestamp>
      <siri:Situations>
        <siri:PtSituationElement>
          <siri:CreationTime>2013-12-17T09:30:47Z</siri:CreationTime>
          <siri:SituationNumber>12345</siri:SituationNumber>
          <siri:Version>1</siri:Version>
          <siri:Source>
            <siri:SourceType>other</siri:SourceType>
            <siri:AgentReference>Calle Larsson</siri:AgentReference>
            <siri:Name>NOBINA_A</siri:Name>
            <siri:TimeOfCommunication>2013-12-17T09:30:47Z</siri:TimeOfCommunication>
            <siri:ExternalCode>DeviationCase</siri:ExternalCode>
          </siri:Source>
          <siri:ValidityPeriod>
            <siri:StartTime>2013-12-17T09:30:47Z</siri:StartTime>
            <siri:EndTime>2013-12-17T10:30:00Z</siri:EndTime>
          </siri:ValidityPeriod>
          <siri:UndefinedReason/>
          <siri:Priority>1</siri:Priority>
          <siri:Audience>public</siri:Audience>
        </siri:PtSituationElement>
      </siri:Situations>
    </siri:SituationExchangeDelivery>
  </Notification>
</wsdl:NotifySituationExchange>
```

```

    <siri:Summary xml:lang="sv">På grund av elavbrott står det still i tunnelba-
nan.</siri:Summary>
    <siri:Summary xml:lang="en">Subway halted due to a power outage.</siri:Summary>
    <siri:Description xml:lang="sv">På grund av elavbrott står det still i tunnelba-
nan. Felavhjälpning pågår.</siri:Description>
    <siri:Description xml:lang="en">Subway halted due to a power outage. Trouble-
shooting is underway.</siri:Description>
    <siri:Detail xml:lang="sv">På grund av elavbrott står det still i tunnelbanan
sedan klockan 11.20. Felavhjälpning pågår och beräknas vara klart klockan
11.55.</siri:Detail>
    <siri:Detail xml:lang="en"> Subway halted since 11.20 due to a power outage.
Troubleshooting is underway and operation is expected to be restored at
11.55.</siri:Detail>
    <siri:Internal>Elavbrott sektion 199W. </siri:Internal>
    <siri:InfoLinks>
    <siri:InfoLink>
    <siri:Uri>http://somewhere.net/poweroutage.aspx</siri:Uri>
    </siri:InfoLink>
    </siri:InfoLinks>
    <siri:Extensions>
    <MessageVariant>
    <Content xml:lang="sv">Problem i tunnelbanan</Content>
    <ContentType>text/plain</ContentType>
    <UsageType>HEADER</UsageType>
    </MessageVariant>
    <MessageVariant>
    <Content xml:lang="en">Power outage in the Metro</Content>
    <ContentType>text/plain</ContentType>
    <UsageType>HEADER</UsageType>
    </MessageVariant>
    <MessageVariant>
    <Content xml:lang="sv">http://somewhere.net/tunnelbaneproblem.mp3</Content>
    <ContentType>urn/mp3</ContentType>
    <UsageType>audio/short</UsageType>
    </MessageVariant>
    <MessageVariant>
    <Content xml:lang="en">http://somewhere.net/subwayproblems.mp3</Content>
    <ContentType>urn/mp3</ContentType>
    <UsageType>audio/short</UsageType>
    </MessageVariant>
    </siri:Extensions>
    </siri:PtSituationElement>
  </siri:Situations>
  <siri:Extensions/>
</siri:SituationExchangeDelivery>
</Notification>
<SiriExtension/>
</wsdl:NotifySituationExchange>

```

## 8.7 GetSituationExchange

GetSituationExchange is a synchronous (request/reply) way of getting situation information.

| Attributes         |     | Description |
|--------------------|-----|-------------|
| ServiceRequestInfo | 1:1 |             |

|                    |     |                                                                                       |
|--------------------|-----|---------------------------------------------------------------------------------------|
| - RequestTimestamp | 1:1 | Timestamp of the request.                                                             |
| - RequestorRef     | 1:1 | Pre-determined Participant Reference for the consumer.                                |
| Request            | 1:1 |                                                                                       |
| - RequestTimestamp | 1:1 | Timestamp of the request.                                                             |
| - LineRef          | 0:* | Filter the results to include only information relating to the specified LINES.       |
| - StopPointRef     | 0:1 | Filter the results to include only information relating to this SCHEDULED STOP POINT. |
| RequestExtension   | 1:1 | Should be empty                                                                       |

If neither LineRef or StopPointRef is given, information for all situations will be returned.

## 8.8 GetSituationExchange sample

```
<wsdl:GetSituationExchange xmlns:wsdl="http://wsdl.siri.org.uk"
xmlns:siri="http://www.siri.org.uk/siri" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="http://wsdl.siri.org.uk file:///C:/Stuff/Siri/SiriXml-
v2.0h/xsd/wsdl_model/siri_wsProducer-Services.xsd">
  <ServiceRequestInfo>
    <siri:RequestTimestamp>2013-08-16T14:11:24+02:00</siri:RequestTimestamp>
    <siri:RequestorRef>XYZ_CONSUMER</siri:RequestorRef>
  </ServiceRequestInfo>
  <Request version="2.0">
    <siri:RequestTimestamp>2013-08-16T14:11:24+02:00</siri:RequestTimestamp>
    <siri:LineRef>9011015000100000</siri:LineRef>
    <siri:StopPointRef>902501400440001</siri:StopPointRef>
  </Request>
  <RequestExtension/>
</wsdl:GetSituationExchange>
```

## 8.9 GetSituationExchangeResponse

| Attributes                  |     | Description                                           |
|-----------------------------|-----|-------------------------------------------------------|
| ServiceDeliveryInfo         | 1:1 |                                                       |
| - ResponseTimestamp         | 1:1 | Time individual response element was created.         |
| - ProducerRef               | 0:1 | Pre-determined participant reference of the producer. |
| Answer                      | 1:1 |                                                       |
| - SituationExchangeDelivery | 1:* | See section above                                     |

## 8.10 GetSituationExchange sample

```
<wsdl:GetSituationExchangeResponse xmlns:wsdl="http://wsdl.siri.org.uk"
xmlns:siri="http://www.siri.org.uk/siri" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="http://wsdl.siri.org.uk file:///C:/Siri/SiriXml-
v2.0h/xsd/wsdl_model/siri_wsProducer-Services.xsd">
  <ServiceDeliveryInfo>
    <siri:ResponseTimestamp>2013-08-16T14:11:24+02:00</siri:ResponseTimestamp>
    <siri:ProducerRef>PubTransSXProducer</siri:ProducerRef>
  </ServiceDeliveryInfo>
  <Answer>
    <siri:SituationExchangeDelivery version="2.0">
      <!--For content sample, see example in the NotifySituationExchange-->
    </siri:SituationExchangeDelivery>
  </Answer>
  <AnswerExtension/>
</wsdl:GetSituationExchangeResponse>
```

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## 9 References

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| CEN TS 15531 Service Interface for Real time Information (SIRI) (draft) | CEN TS 15531 Service Interface for Real time Information (SIRI) (2.0h final draft)<br><a href="http://www.vdv.de/siri.aspx">http://www.vdv.de/siri.aspx</a> |