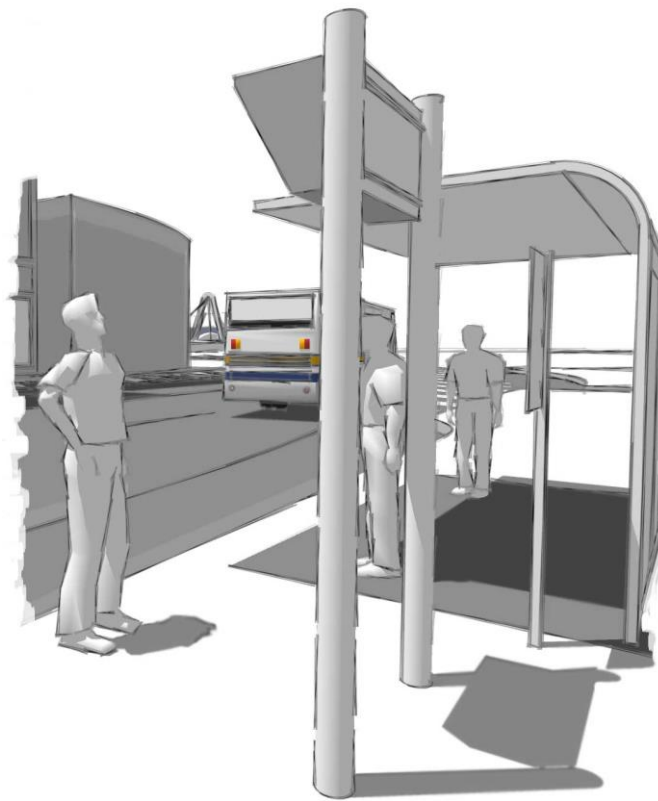




# ITS4mobility SIRI-SM

**Service Interface for Real Time Information  
StopMonitoring (SM)**





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## Terms, Acronyms and Abbreviations

Abbreviation	Description
<b>SIRI</b>	Service Interface for Real Time Information, CEN/TS 15531.
<b>Transmodel</b>	An abstract general purpose model for public transport information (CEN TC278, Reference Data Model For Public Transport, ENV12896 revised, june 2001).
<b>I4M</b>	ITS4Mobility
<b>Call</b>	A visit by a vehicle to a stop point id. A journey is a series of calls.
<b>Client</b>	A program that connects to an ITS4mobility SIRI server.
<b>Server</b>	A program running within the ITS4mobility system that can provide clients with information in near real-time using documents as defined in the SIRI specification.



# 1. Introduction

This document contains a description of the ITS4mobility SIRI Stop Monitoring module.



## 2. Scope and Purpose

SIRI as a standard has a large number of features and several optional capabilities. This document is intended to give developers the information needed to use the SIRI functional service Stop Monitoring supplied with ITS4mobility. The capabilities and features of the ITS4mobility implementation are specified in detail.

*The information available in SIRI/SM is the same as in SIRI/ET and users are recommended to use SIRI/ET instead. SIRI/SM is verbose and not very well suited for continuous exchange of data between two systems.*



### 3. SIRI Stop Monitoring (SM)

#### 3.1. StopMonitoringSubscriptionRequest

These are the elements of the *StopMonitoringSubscriptionRequest* that are used in the ITS4mobility implementation. Please refer to the appendix for an example document.

Element	Description
SubscriberRef	A client reference, which can be any string. Will be returned in the <i>StopMonitoringDelivery</i> .
SubscriptionIdentifier	An identifier that will be returned as <i>SubscriptionRef</i> in the <i>StopMonitoringDelivery</i> .
InitialTerminationTime	How long this subscription will last before it is terminated by the server. For continuous operation this value should be far away.
ChangeBeforeUpdates	How much an estimated call must differ from a previously estimated call to trigger an update and new <i>StopMonitoringDelivery</i> . The recommended setting is 20 seconds (PT20S).
StopMonitoringRequest	See below.

The *StopMonitoringRequest* element contains the following elements.

Element	Description
RequestTimestamp	The date and time that the client posted this request. The value is not used by the server.
PreviewInterval	How far ahead data will be delivered. The recommended setting is 24 hours (PT24H). Since ITS4mobility is a real time system, data will not always be available this far ahead.
MonitoringRef	Empty but must be present.
StopVisitTypes	Must be present and have the value "all".
StopMonitoringDetailLevel	Must be present and have the value "normal".



### 3.2. StopMonitoringDelivery

These are the elements of the *StopMonitoringDelivery* that are used in the ITS4mobility implementation. Please refer to the appendix for an example document.

Element	Description
ResponseTimestamp	The date and time that the server sent this document.
SubscriberRef	The subscriber (client) reference.
SubscriptionRef	The subscription reference which is the <i>SubscriptionIdentifier</i> that the client supplied in the <i>StopMonitoringSubscriptionRequest</i> .
ValidUntil	How long the data in the document is valid. Since a new document will be posted as soon as there is a change, this value is always set to cover a very large timespan and should be ignored by the client.
MonitoringRef	The <i>StopPointRef</i> that the <i>MonitoredStopVisits</i> are for.
MonitoredStopVisit	One or more <i>MonitoredStopVisits</i> will be delivered in a single <i>StopMonitoringDelivery</i> . See below.

The *MonitoredStopVisit* element contains the following elements.

Element	Description
RecordedAtTime	The date and time that the information was updated.
MonitoredVehicleJourney	See below.

The *MonitoredVehicleJourney* element contains the following elements.

Element	Description
LineRef	The line of the journey.
DirectionRef	The direction of the journey.
FramedVehicleJourneyRef	See below.
Monitored	A boolean indicating if this journey is serviced by a vehicle or not. In case the value is false, there might be a vehicle but the system is unable to communicate with it.
VehicleRef	The vehicle making the stop visit, if available.
MonitoredCall	See below.

A *FramedVehicleJourneyRef* contains the following elements.

Element	Description
DataFrameRef	The planned start time of the journey.
DatedVehicleJourneyRef	The external journey id.





A *MonitoredCall* contains the following elements.

<b>Element</b>	<b>Description</b>
VisitNumber	The order of the call within the journey.
AimedArrivalTime	Arrival time according to the time table. This element is not available on the first call of the journey.
ExpectedArrivalTime	Forecasted arrival time. This element is not available on the first call of the journey.
AimedDepartureTime	Departure time according to the time table. This element is not available on the last call of the journey.
ExpectedDepartureTime	Forecasted departure time. This element is not available on the last call of the journey.



## 4. References

CEN/TS 15531-1:2007 Service interface for real-time information relating to public transport operations: Context and framework.

CEN/TS 15531-2:2007 Service interface for real-time information relating to public transport operations: Communications infrastructure.

CEN/TS 15531-3:2007 Service interface for real-time information relating to public transport operations: Functional service interfaces.



## 5. Document history

Revision	Date	Comment
1	2014-02-16	Version 1.



## 6. Appendix

### 6.1. Example StopMonitoringSubscriptionRequest

```
<?xml version="1.0"?>
<AE:Siri xmlns:AE="http://www.siri.org.uk/siri" version="1.4">
  <AE:SubscriptionRequest>
    <AE:RequestTimestamp>2014-02-15T23:18:07</AE:RequestTimestamp>
    <AE:RequestorRef>ITS4mobilityTestClient</AE:RequestorRef>
    <AE:MessageIdentifier>ITS4mobilityTestClientMID</AE:MessageIdentifier>
    <AE:ConsumerAddress>http://192.168.4.15:80/siri/client/</AE:ConsumerAddress>
    <AE:SubscriptionContext>
      <AE:HeartbeatInterval>PT1M</AE:HeartbeatInterval>
    </AE:SubscriptionContext>
    <AE:StopMonitoringSubscriptionRequest">
      <AE:SubscriberRef>ITS4mobilityTestClient</AE:SubscriberRef>
      <AE:SubscriptionIdentifier>ITS4mobilityTestClient</AE:SubscriptionIdentifier>
      <AE:InitialTerminationTime>9999-12-31T23:59:59.999</AE:InitialTerminationTime>
      <AE:StopMonitoringRequest version="1.4">
        <AE:RequestTimestamp>2014-02-15T23:18:07</AE:RequestTimestamp>
        <AE:PreviewInterval>PT24H</AE:PreviewInterval>
        <AE:MonitoringRef/>
        <AE:StopVisitTypes>all</AE:StopVisitTypes>
        <AE:StopMonitoringDetailLevel>normal</AE:StopMonitoringDetailLevel>
      </AE:StopMonitoringRequest>
      <AE:ChangeBeforeUpdates>PT20S</AE:ChangeBeforeUpdates>
    </AE:StopMonitoringSubscriptionRequest>
  </AE:SubscriptionRequest>
</AE:Siri>
```



## 6.2. Example StopMonitoringDelivery

```

<?xml version="1.0"?>
<AA:Siri xmlns:AA="http://www.siri.org.uk/siri" version="1.4">
  <AA:ServiceDelivery>
    <AA:ResponseTimestamp>2014-02-15T23:19:31</AA:ResponseTimestamp>
    <AA:ProducerRef>ITS4mobility</AA:ProducerRef>
    <AA:StopMonitoringDelivery version="1.4">
      <AA:ResponseTimestamp>2014-02-15T23:19:31</AA:ResponseTimestamp>
      <AA:SubscriberRef>ITS4mobilityTestClient</AA:SubscriberRef>
      <AA:SubscriptionRef>ITS4mobilityTestClient</AA:SubscriptionRef>
      <AA:ValidUntil>9999-12-31T23:59:59</AA:ValidUntil>
      <AA:MonitoringRef>12011097</AA:MonitoringRef>
      <AA:MonitoredStopVisit>
        <AA:RecordedAtTime>2014-02-15T23:19:31</AA:RecordedAtTime>
        <AA:MonitoredVehicleJourney>
          <AA:LineRef>10</AA:LineRef>
          <AA:DirectionRef></AA:DirectionRef>
          <AA:FramedVehicleJourneyRef>
            <AA:DataFrameRef>2014-02-16T14:34:00</AA:DataFrameRef>
            <AA:DatedVehicleJourneyRef>3487020</AA:DatedVehicleJourneyRef>
          </AA:FramedVehicleJourneyRef>
          <AA:Monitored>False</AA:Monitored>
          <AA:VehicleRef></AA:VehicleRef>
          <AA:MonitoredCall>
            <AA:VisitNumber>15</AA:VisitNumber>
            <AA:AimedArrivalTime>2014-02-16T14:50:00</AA:AimedArrivalTime>
            <AA:ExpectedArrivalTime>2014-02-16T14:50:00</AA:ExpectedArrivalTime>
            <AA:AimedDepartureTime>2014-02-16T14:50:00</AA:AimedDepartureTime>
            <AA:ExpectedDepartureTime>2014-02-16T14:50:00</AA:ExpectedDepartureTime>
          </AA:MonitoredCall>
        </AA:MonitoredVehicleJourney>
      </AA:MonitoredStopVisit>
      <AA:MonitoredStopVisit>
        <AA:RecordedAtTime>2014-02-15T23:19:31</AA:RecordedAtTime>
        <AA:MonitoredVehicleJourney>
          <AA:LineRef>12</AA:LineRef>
          <AA:DirectionRef></AA:DirectionRef>
          <AA:FramedVehicleJourneyRef>
            <AA:DataFrameRef>2014-02-16T12:30:00</AA:DataFrameRef>
            <AA:DatedVehicleJourneyRef>3487064</AA:DatedVehicleJourneyRef>
          </AA:FramedVehicleJourneyRef>
          <AA:Monitored>False</AA:Monitored>
          <AA:VehicleRef></AA:VehicleRef>
          <AA:MonitoredCall>
            <AA:VisitNumber>17</AA:VisitNumber>
            <AA:AimedArrivalTime>2014-02-16T12:51:00</AA:AimedArrivalTime>
            <AA:ExpectedArrivalTime>2014-02-16T12:51:00</AA:ExpectedArrivalTime>
            <AA:AimedDepartureTime>2014-02-16T12:51:00</AA:AimedDepartureTime>
            <AA:ExpectedDepartureTime>2014-02-16T12:51:00</AA:ExpectedDepartureTime>
          </AA:MonitoredCall>
        </AA:MonitoredVehicleJourney>
      </AA:MonitoredStopVisit>
    </AA:StopMonitoringDelivery>
  </AA:ServiceDelivery>
</AA:Siri>

```