CTS SIRI-SM

Service Interface for Real Time Information Stop Monitoring (SM)

CONSAT Telematics

Table of Contents

Terms, Acronyms and Abbreviations

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

Introduction

This document contains a description of the CTS SIRI Stop Monitoring service.

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 CTS. The capabilities and features of the CTS implementation are specified in detail.

SIRI Stop Monitoring (SM)

3.1 StopMonitoringSubscriptionRequest

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

Element	Description
SubscriberRef	A client reference that should be requested from Consat Telematics AB. The reference will be returned as SubscriberRef in the StopMonitoringDelivery.
SubscriptionIdentifier	An identifier that will be returned as SubscriptionRef in the StopMonitoringDelivery. It is up to the client (consumer) to manage and use subscription identifiers if necessary.
InitialTerminationTime	How long this subscription will last before it is terminated by the server. For continuous operation, which is recommended, this value should be far away.
IncrementalUpdates	Always false or missing (default false).
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.
MessageIdentifier	A unique identifier for the message.
PreviewInterval	Only data for this amount of time in the future will be sent.
MonitoringRef	The stop point to subscribe to.
StopVisitTypes	Only “all” supported currently.

3.2 StopMonitoringDelivery

These are the elements of the *StopMonitoringDelivery* that are used in the CTS 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 SubscriptionIdentifier that the client supplied in the EstimatedTimetableSubscriptionRequest.
MonitoringRef	The subscribed stop id.
MonitoringName	The name of the subscribed stop.
MonitoredStopVisit	See below.
StopNotice	See below.
StopNoticeCancellation	See below.

The *MonitoredStopVisit* element contains the following elements.

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

The MonitoredVehicleJourney element contains the following elements.

Element	Description
FramedVehicleJourneyRef	See below.
VehicleMode	The type of vehicle that is providing the service (bus, tram, ferry etc).
PublishedLineName	The name of the line of this journey.
ServiceFeatureRef	Features for this journey. Currenly supported values: schoolService
VehicleFeatureRef	Vehicle features, currently supported values: lowFloor, stepFreeAccess, suitableForWheelChairs
Via	Via destination.
DestinationRef	Destination reference.
DestinationName	Destination name.
Monitored	True if there is realtime communications with the vehicle.
InCongestion	True if the vehicle experiences congestion.

PredictionInaccurate	Whether the vehicle is in congestion or other circumstances that makes the estimated times uncertain. If not present, not known.
Occupancy	Occupancy level of the vehicle.
MonitoredCall	See below.
Extensions	For future use.

The FramedVehicleJourneyRef element contains the following elements.

Element	Description
DataFrameRef	The operational date for the journey.
DatedVehicleJourneyRef	Id for the journey.

The MonitoredCall element contains the following elements.

Element	Description
Order	The order of the call within the journey.
VehicleAtStop	True if the vehicle has stopped at a stop.
AimedArrivalTime	Arrival time according to the time table.
ExpectedArrivalTime	The expected arrival time.
ArrivalBoardingActivity	Is boarding permitted here.
AimedDepartureTime	Departure time according to the time table.
ExpectedDepartureTime	The expected departure time.
DepartureBoardingActivity	Is departure permitted here.

A StopNotice contains the following elements.

Element	Description
RecordedAtTime	The date and time that the information was published.
ItemIdentifier	Id of this stop note.
MonitoringRef	The stop this note is applicable for.

StopNote	The text of the notice.

A StopNoticeCancellation contains the following elements.

Element	Description
RecordedAtTime	The date and time that the information was published.
ItemRef	The id of the stop notice to cancel.
MonitoringRef	The stop this note is applicable for.

References

CEN/TS 15531-1:2015 Service interface for real-time information relating to public transport operations: Context and framework.

CEN/TS 15531-2:2015 Service interface for real-time information relating to public transport operations: Communications infrastructure.

CEN/TS 15531-3:2015 Service interface for real-time information relating to public transport operations: Functional service interfaces.

Document history

Revision	Date	Comment
1	2023-08-28	Version 1 for SIRI 2.0.
2		
3		
4		
5		
6		
7		
8		
9		

Appendix

6.1 Example StopMonitoringSubscriptionRequest

```
<?xml version="1.0"?>
<AA:Siri xmlns:AA="http://www.siri.org.uk/siri"
xmlns:xs="http://www.w3.org/2001/XMLSchema-instance">
  <AA:SubscriptionRequest>
    <AA:RequestTimestamp>2018-09-16T10:15:30</AA:RequestTimestamp>
    <AA:RequestorRef>REQUESTOR</AA:RequestorRef>
    <AA:MessageIdentifier>9beb6a81-db8f-4fbd-b207-42b2ef7f72e5</AA:MessageIdentifier>
    <AA:ConsumerAddress>https://example.com/siri/client/2.0/sm</AA:ConsumerAddress>
    <AA:SubscriptionContext>
      <AA:HeartbeatInterval>PT1M</AA:HeartbeatInterval>
    </AA:SubscriptionContext>
    <AA:StopMonitoringSubscriptionRequest>
      <AA:SubscriptionIdentifier>CTS-STOP1</AA:SubscriptionIdentifier>
      <AA:InitialTerminationTime>9999-12-31T23:59:59.999</AA:InitialTerminationTime>
      <AA:StopMonitoringRequest>
        <AA:RequestTimestamp>2018-09-16T10:15:30</AA:RequestTimestamp>
        <AA:PreviewInterval>P1Y</AA:PreviewInterval>
        <AA:MonitoringRef>STOP1</AA:MonitoringRef>
        <AA:StopVisitTypes>all</AA:StopVisitTypes>
      </AA:StopMonitoringRequest>
      <AA:IncrementalUpdates>false</AA:IncrementalUpdates>
    </AA:StopMonitoringSubscriptionRequest>
    <AA:StopMonitoringSubscriptionRequest>
      <AA:SubscriptionIdentifier>CTS-STOP2</AA:SubscriptionIdentifier>
      <AA:InitialTerminationTime>9999-12-31T23:59:59.999</AA:InitialTerminationTime>
      <AA:StopMonitoringRequest>
        <AA:RequestTimestamp>2018-09-16T10:15:30</AA:RequestTimestamp>
        <AA:PreviewInterval>P1Y</AA:PreviewInterval>
        <AA:MonitoringRef>STOP2</AA:MonitoringRef>
        <AA:StopVisitTypes>all</AA:StopVisitTypes>
      </AA:StopMonitoringRequest>
      <AA:IncrementalUpdates>false</AA:IncrementalUpdates>
    </AA:StopMonitoringSubscriptionRequest>
  </AA:SubscriptionRequest>
</AA:Siri>
```

6.2 Example StopMonitoringDelivery

```
<?xml version="1.0"?>
<AA:Siri xmlns:AA="http://www.siri.org.uk/siri"
xmlns:xs="http://www.w3.org/2001/XMLSchema-instance">
  <AA:ServiceDelivery>
    <AA:ResponseTimestamp>2023-08-30T14:39:07.022</AA:ResponseTimestamp>
    <AA:ProducerRef>CTS</AA:ProducerRef>
    <AA:RequestMessageRef>71002525-a9f2-4c1c-bffb-602c8d3942e3</AA:RequestMessageRef>
    <AA:StopMonitoringDelivery>
      <AA:ResponseTimestamp>2023-08-30T14:39:07.022</AA:ResponseTimestamp>
      <AA:SubscriptionRef>CTS-STOP1</AA:SubscriptionRef>
      <AA:MonitoringRef>CTS-STOP1</AA:MonitoringRef>
      <AA:MonitoringName>Stop Point 1</AA:MonitoringName>
      <AA:MonitoredStopVisit>
        <AA:RecordedAtTime>2018-09-16T10:15:25</AA:RecordedAtTime>
        <AA:MonitoringRef>STOP1</AA:MonitoringRef>
        <AA:MonitoredVehicleJourney>
          <AA:PublishedLineName>Line1</AA:PublishedLineName>
```

```
          <AA:ServiceFeatureRef>schoolService</AA:ServiceFeatureRef>
          <AA:VehicleFeatureRef>suitableForWheelChairs</AA:VehicleFeatureRef>
          <AA:DestinationRef>DESTREF</AA:DestinationRef>
          <AA:DestinationName>DestinationName</AA:DestinationName>
          <AA:Monitored>true</AA:Monitored>
          <AA:InCongestion>false</AA:InCongestion>
          <AA:PredictionInaccurate>false</AA:PredictionInaccurate>
          <AA:Occupancy>seatsAvailable</AA:Occupancy>
          <AA:MonitoredCall>
            <AA:VehicleAtStop>false</AA:VehicleAtStop>
            <AA:AimedArrivalTime>2023-08-30T14:39:07.022</AA:AimedArrivalTime>
            <AA:ExpectedArrivalTime>2023-08-30T14:39:07.022</AA:ExpectedArrivalTime>
            <AA:ArrivalBoardingActivity>alighting</AA:ArrivalBoardingActivity>
            <AA:AimedDepartureTime>2023-08-30T14:39:07.022</AA:AimedDepartureTime>
            <AA:ExpectedDepartureTime>2023-08-
30T14:39:07.022</AA:ExpectedDepartureTime>
            <AA:DepartureBoardingActivity>boarding</AA:DepartureBoardingActivity>
          </AA:MonitoredCall>
        </AA:MonitoredVehicleJourney>
      </AA:MonitoredStopVisit>
    </AA:StopMonitoringDelivery>
  </AA:ServiceDelivery>
</AA:Siri>
```