SIRI - CEN PT Standards context

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Standards and categories

SIRI

- Real-time PT data
  - (passing times, incidents, occupancy, facility status, etc.)
- Usage data
  - (O/D, traveling reasons, offer-demand...)
- Real-time freight data
  - (dept-delivery, vehicle position, measurements)
- Ticketing data
  - (validation, etc.)
- Road traffic
- Road traffic control
- Car pooling offers
- Availability in Parking, Car sharing and Bike sharing
  - (available spaces and vehicles when shared)

- PT Scheduled information
  - (timetables, vehicles, etc.)
- PT Fare offer
- Scheduled freight
  - (services, road access times, etc.)
- Freight Fares
- Parking and toll fares
- Taxi fares
- Car pooling costs
- Car sharing fares
- Bike sharing fares

- Stops
  - (stops, stairs, lifts, shops, videos, etc.)
- PT Network description
  - (lines, routes, etc.)
- Freight places
  - (loading, measurement, etc.)
- Freight network
  - (covered areas, freight lines, managed goods, limitations, ADR rules, etc.)
- Parking, park-and-ride, Car stopping places
- Car sharing station
- Bike sharing station

- Transport infrastructure
  - (roads, rails, etc.)
- Topography
- Point of interest
- Car pooling areas
- Taxi stand
Data categories in mobility

- Real-time PT data (passing times, incidents, occupancy, facility status, etc.)
- Estimated & actual passing time, other associated information (boarding platform etc.)
- Vehicle position
- Transmitted messages in the network
- Status of the equipment (in stops & vehicles)
- Events, incidents & their consequences
- Occupancy rate in vehicles & frequentation
- Connection’s status
- Availability of parking places and vehicles (vehicle sharing)
- Control actions
Public Transport related business cases

• Multiple and often complex business cases
• Each system or tool has a specific (and partial) point of view

- Mobility needs analysis and transport plan definition (Authorities)
- Scheduling and production plan
- Operations
- Passenger Information
- Indicators and statistics
- Fare offer definition and Ticketing
- Rostering, scheduling (timetable, vehicle, run times...)
- AVMS (Automated Vehicle Monitoring System)
- Journey planner, displays, app & web sites
- Analysis, BI, optimisation
- Ticketing systems
PT Standard dependencies and relations

TRANSMODEL

Conceptual data model covering all the public transport data domaine

NetEx
Exchange data format for scheduled information

SIRI
Exchange data format for real time information

OpRa
Exchange data format for observed information

GTFS
GTFS RT
Transmodel content associated with exchange standard SIRI
**Name**: SIRI (Service Interface for Real-time Information)

**Reference**: EN 15531-1 - Business case  
EN 15531-2 - Communication  
EN 15531-3 - Services  
TS 15531-4 - Facility monitoring service  
TS 15531-5 - Situation exchange service  
a Part 6 should be available in 2022 for a detailed description of Control Actions

**Status**: Part 1, 2 and 3 are European Norms  
Part 4 and 5 are Technical Specifications

**Conceptual model**: No

**Exchange format**: Yes (XML or JSON, SOAP or REST)

**Data category**: Public transport real-time data

**Temporal scope**: Mainly real-time, but also the underlying short term plan

**Main scope**: Public transport real-time information.

**Example of covered objects**: dated journey, passing time, situations, vehicle location.

**Web site** [https://www.vdv.de/siri.aspx](https://www.vdv.de/siri.aspx) and [http://siri-cen.eu](http://siri-cen.eu) soon
SIRI communication layer
(XML-PubSub-Soap...)

- Stop Monitoring
- Stop Timetable
- Production Timetable
- Estimated Timetable
- Vehicle Monitoring
- Connection Timetable
- Connection Monitoring
- General Message
- Facility Monitoring
- Situation Exchange
SIRI communication layer (XML-PubSub-Soap…)

- Stop Monitoring
- Stop Timetable
- Production Timetable
- Estimated Timetable
- Vehicle Monitoring
- Connection Timetable
- Connection Monitoring
- General message
- Facility Monitoring
- Situation Exchange
SIRI

SIRI communication layer (XML-PubSub-Soap...)

Control Action may be added as a new service soon

- Situation Exchange
- Facility Monitoring
- General message
- Connection Monitoring
- Connection Timetable
- Vehicle Monitoring
- Estimated Timetable
- Production Timetable
- Stop Timetable
- Stop Monitoring
SIRI: uses cases example

Realtime data hub feed
Journey planner feed
Realtime display system feed
Control Center feed and dissemination
Multi-operator connection operation
Situation management and publication
Multi-operator, shared vehicle operation (i.e. EBSF)
Etc.
Profiles
Profiles: why?

Standards are by their nature, *consensus documents*, taking into account a wide range of requirement.

Standards may contain some redundant features in order to take into account some alternate *national specific* ways of working with PT.

The scope of a standard most often goes **much further than** the one of a single use case.

Standards’ documents are often quite **large and detailed** (also due to the expected detail level and prescribed editorial rules).

Standards contains a lot of **non mandatory features** (services, attributes, processes, etc.)

**Specific local rules** (coding, local processes, etc.) are not described in standards

• For example, reference to NaPTAN (national Stop reference database) in UK.
Profiles: why?

As a summary

A profile

- facilitates the implementation of a standard
- improves interoperability

by

- focusing only on what is needed
- filling the small gaps voluntarily left by the standard
- taking into account the local context.
Profiles: what?

The profile contains information such as:

- Details of used services
- Details of the objects used in an exchange
- Details on the options proposed by the standard
- Details on optional elements
- Precision on the codifications to be used
- ...

To define a profile, you need to:

- Define/identify use cases and requirements
- Identify local constraints (processes, coding rules, reference data, etc.)
- Select in the standard what is necessary or useful to fulfil the two above
- Complement the standard with some specific (but standard compliant) local rules

From a practical point of view, profiles can be seen as an implementation guideline for a certain standard.
Resources

Support and resources (tools, etc.)
https://data4pt-project.eu/
https://www.vdv.de/siri.aspx
https://www.siri-cen.eu/
https://github.com/SIRI-CEN/SIRI
http://www.transmodel-cen.eu/
http://netex-cen.eu/
http://www.normes-donnees-tc.org/format-dechange/donnees-temps-reel/ (in French)

National SIRI Profiles SIRI
http://www.normes-donnees-tc.org/profils/
https://enturas.atlassian.net/wiki/spaces/PUBLIC/pages/637370420/Norwegian+SIRI+profile

Local SIRI profiles
IDFM

TFL

New York MTA
http://bustime.mta.info/wiki/Developers/SIRIIntro
Thank you for your attention