European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

CEN TC278 WG3 SG10

OpRa

Operating raw data and statistics exchange

Scope description

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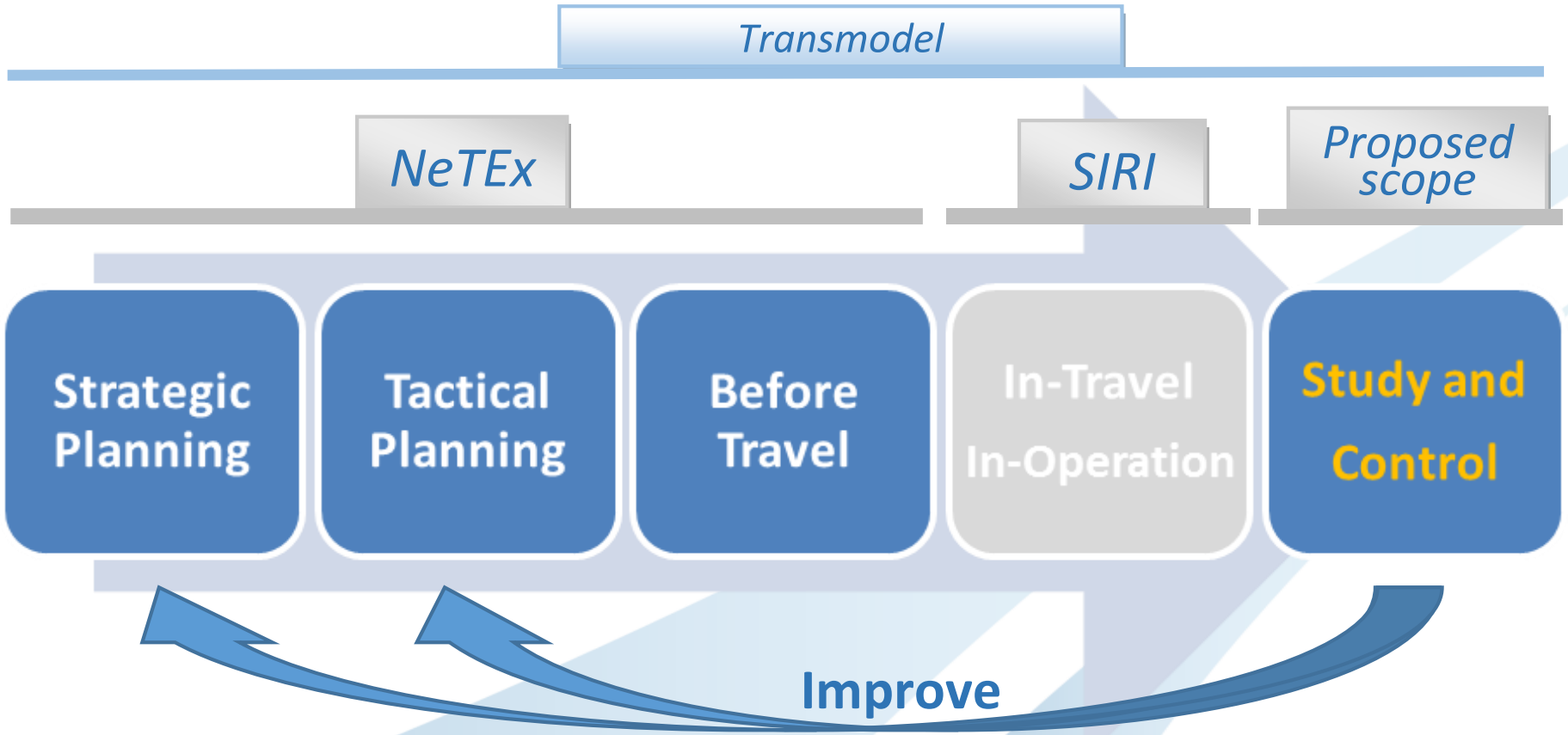
OpRa Work Item (WI) - History

- OpRa WI scope originally proposed by Hungary.
- Started to discuss about this initiative during WG3 **May 2015** plenary meeting, with different opinions about it.
- During WG3 **Dec 2015** meeting it has been agreed to proceed with the official Proposed Work Item (PWI) submition to CEN.
- It has been then submitted to NEN in **April 2016**, the ballot period (member states consultation) started on April 21st and end Apri 26th.
- Ten states voted positively: Austria (ASI), Czech Republic (UNMZ), Denmark (DS), France (AFNOR), Italy (UNI), Netherlands (NEN), Norway (SN), Romania (ASRO), Slovenia (SIST), Switzerland (SNV).
- During WG3 **June 2016** meeting it has been approved to start the work.

OpRa WI – Scope (1/4)

- The work consists in the production of a **Technical Report**, to document the results of the performed analysis, in order to precisely define the scope of the following **Technical Specification** (TS) or **European Norm** (EN) definition work.
- OpRa will mainly focus on the identification of actual and measured information, i.e. information which cannot be changed anymore in the future.
- This information is mainly an output of the Transmodel (TRM) domains
  - "Operations monitoring & control";
  - "Management Information and statistics" (raw data for indicators calculation).
- It will describes the recorded reality of operation, like delays and cancelled vehicle journeys, etc. either through individual measurements at a given sampling interval or in an aggregate ways (statistics).

OpRa WI – Scope (2/4)



OpRa WI – Scope (3/4)

- **Strategic Planning:** definition of network elements (lines, stops), main service parameters (vehicles sizes, operation intervals, service intervals for important time demand types), and guaranteed interchanges are planned (NeTEx, TRM).

- **Tactical Planning:** operators plan their resource usage (vehicles, rolling stock, personnel), with detailed timetables for each resource uni (NeTEx , TRM).

- **Before Travel:** all planned networks and timetables are published. Passengers and other type of clients may plan their use of the offered transportation services via printed and electronic media, and make their reservations as needed (NeTEx, TRM).

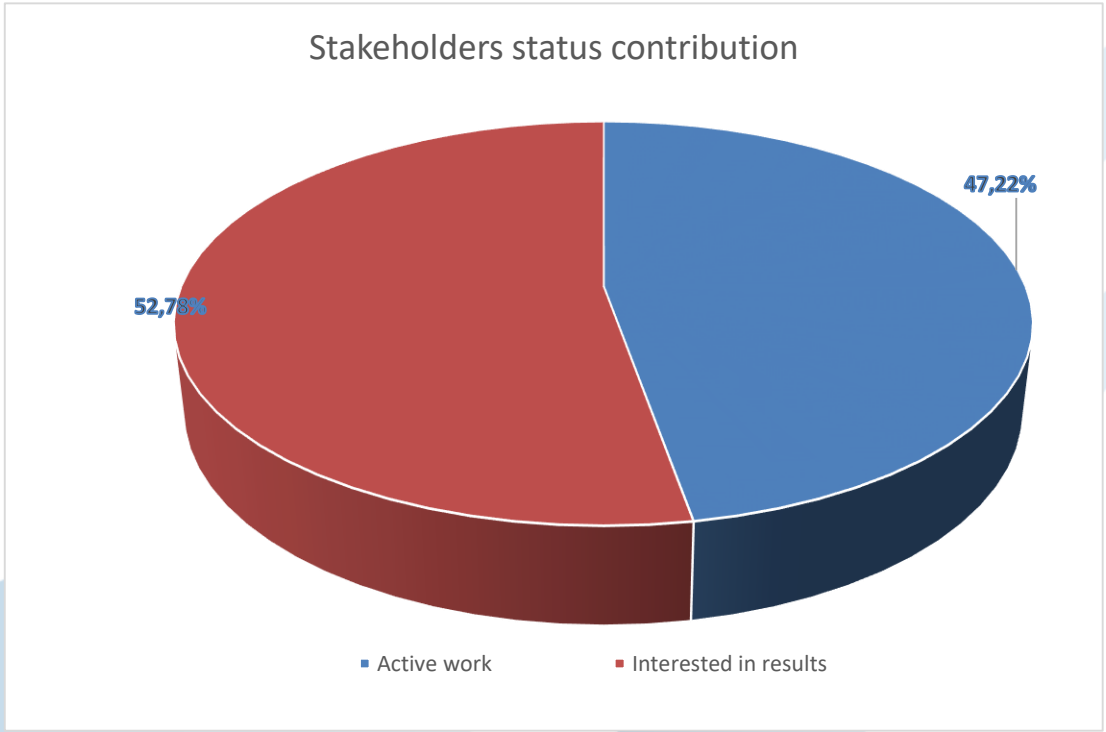
OpRa WI – Scope (4/4)

- **In-Travel:** The transportation service is conducted. Real-time information exchange is available while this takes place and may be recorded (SIRI, TRM).

- **Study and control:** in this stage, operators and authorities review the history of actual operations, which may lead to improvements through operational changes, or an optimization of strategic and tactical planning (OpRa, TRM).

OpRa – curent stakeholders

- Currently 35 stakeholders have been identified (mainly from France and Italy)
- They includes Authorities, PTO and System Integrators
- Next months will continue dissemination of the OpRa work



OpRa WI – TR content (1/2)

- The study of PT world, focusing on their needed input (Managing by Data approach) for several EU countries (PT scenario).
- Information exchanges with stakeholders (mainly authorities, operators and system providers) to list the needs and **use cases**.
- The identification of all possible **exchanges of measured data**.
- The identification of possible measured **data aggregation and statistics**.
- The identification of already present elements in Transmodel to support OpRa.

OpRa WI – TR content (2/2)

- The identification of any required enhancements to Transmodel to support OpRa (with formulation of extension requests to **Transmodel**).
- The identification of corresponding elements to be included in an additional **NeTEx** 'Operational version frame' to aggregate OpRa elements for exchange as a separate operational workflow.
- An early draft model and W3C xsd (mainly as proof of concept for key points of difficulty).

OpRa WI – Work Plan (1/2)

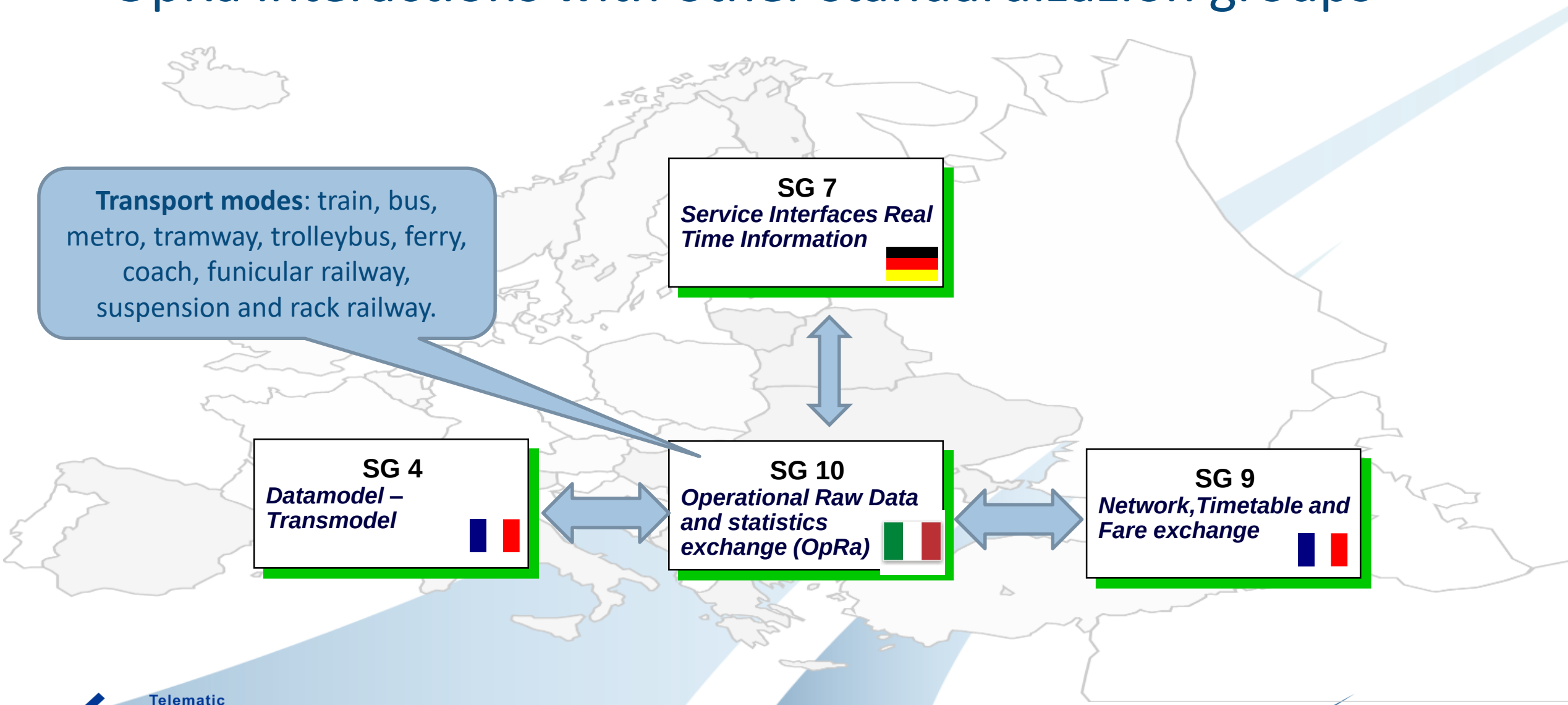
- Work duration could be 18 months, with the objective to issue a first document by Q3 2017 and final TR by Q1 2018.

- Activities to be planned:
  1. to collect and analyse the national requirements and EU QoS projects, focusing on data input for PT network study;
  2. to collect the requirements at European level, including ERA and UIC (as for NeTEx);
  3. to produce a data dictionary (based on Transmodel) and describe basic Use Cases;

OpRa WI – Work Plan (2/2)

4. to produce a detailed Use Cases set for *OpRa*;
5. to develop a cooperation protocol with the Transmodel group (SG4), in order to avoid duplication as regards data modelling and double publication of models;
6. to produce an early draft of XML (XSD) implementation base on the UML data model, probably by extending NeTEx and SIRI XSD and Web Services.

OpRa interactions with other standardizazion groups



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OpRa Use Cases (1/2)

- **The OpRa** main use cases cover data exchange for operation analysis and contractual reporting purposes.

- They can be defined into following “Use Cases Groups”:

1. **Situation analysis**. This case group covers all the data exchange scenarios where the aim of the exchange is to provide **data to examine and study the operating status** (e.g. delays because of traffic lights, road construction, traffic jams, etc.). It requires some recording of aspects of the operational context and of events along with the real-time data performance

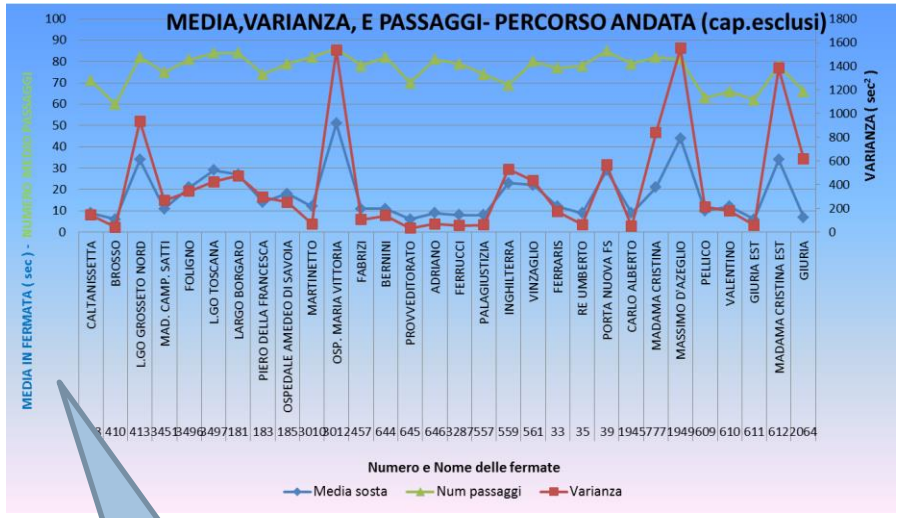
OpRa Use Cases (2/2)

2. **Contractual reporting.** This use case group covers data exchange where the actual service must be accounted **towards the local, regional or national administrations body** responsible for providing public transportation. **It requires some representation of the accounting of undertaken services.**

3. **Providing data for Quality-of-service analyses and processes.** Based on the planned timetables and the exchanged data, quality-of-service (QoS) analyses may take place, including delays and cancelled vehicle journeys.

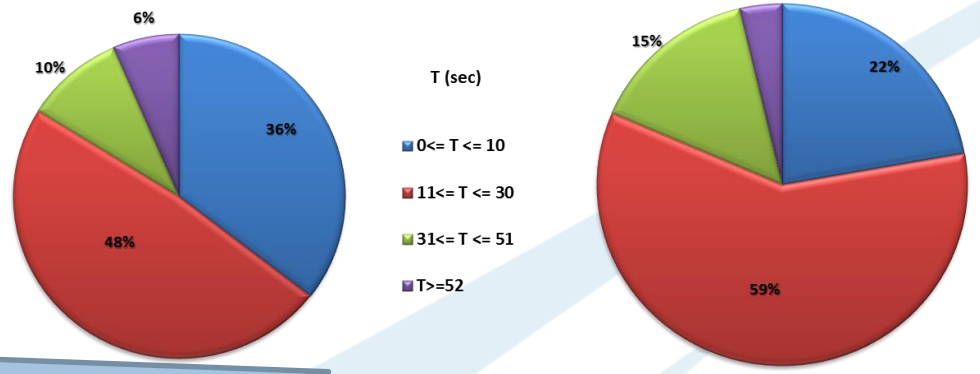
NOTE: **OpRa** will not carry actual quality-of-service information, but only the input data from which such indicators can be computed.

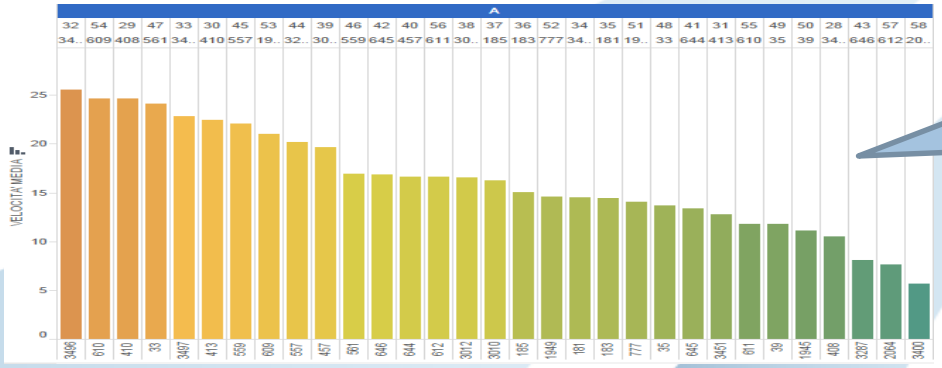
Examples data that could be exchanged using OpRa



Time spent at STOP_POINT (mean, variance)

Time spent at STOP_POINT distribution (ona per line basis)





Measured mean speed between STOP_POINTs

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Thanks for your attention !

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