

On-board IT-architecture

Vendor conference 2017-18-04

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Ruter #

Dialogue meeting 2017-02-08

- Ruter wish prepare new vehicles for its NextGen IT-platform by adopting existing international standards for the on-board IT-architecture
- Ruter wish for the operator to take full responsibility for the vehicle – incl the on-board IT-equipment itself
 - Ruter would only specify functional requirement

The situation

- IT-systems on-board vehicles that are essential for Ruters business
 - Fare Collection System
 - Real Time Passenger Information System
 - Automatic Passenger Counting
 - Active Signal Prioritisation
 - Geographic Positioning System
 - Communication to/from the vehicle
- The systems that are in operation today does not meet future expectations in regards to modularity, interoperability and way of communicating with other systems

The situation

- There are additional systems on-board that perform important functions for the operators e.g Fleet Management (FMS)
- Certain functions are needed for both system categories
 - Information display for the driver
 - Geographic positioning
 - Communication between the vehicle and the backend

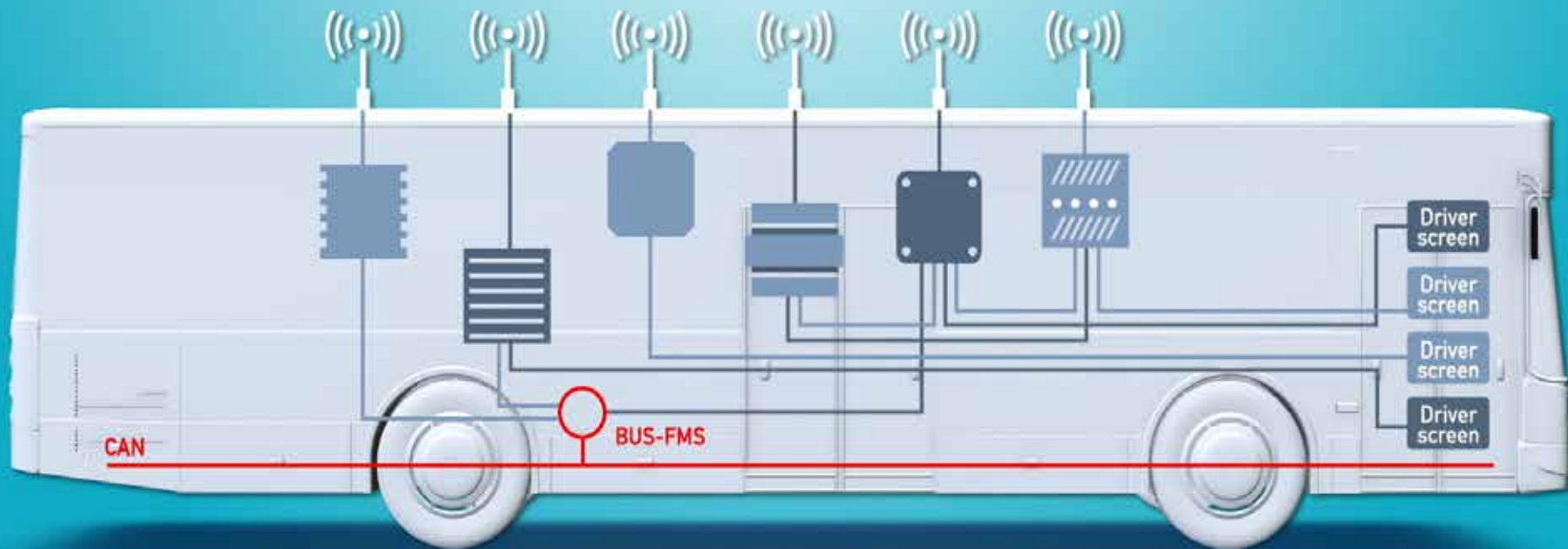
The current situation – summary

Most on-board IT-systems are proprietary and "dedicated"

The installations are complex and expensive
(both in regards to installation and operation)

The responsibility for the systems are spilt
between the operator and Ruter

today

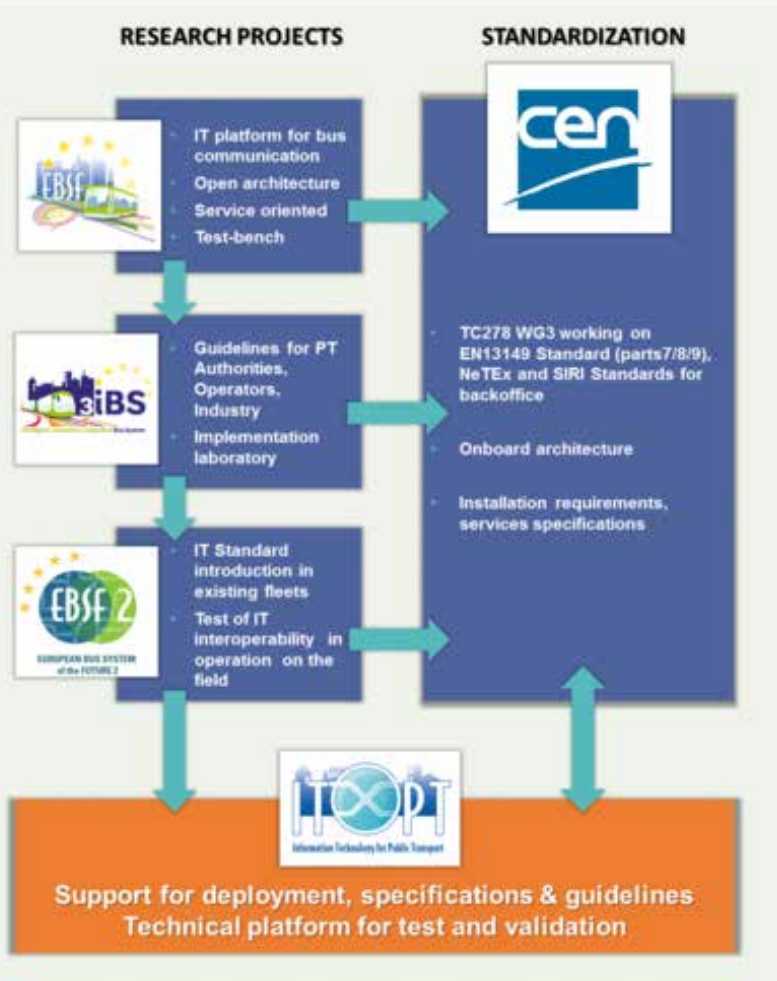


Future solution

- Ruter wish to adopt international standards as quick as practically possible such that they can be implemented in the vehicles commencing operation towards the end of this decade
- Ruter is an active contributor in the standardisation efforts
 - ..nationally
 - SNK175 (CEN/TC 278, ISO/TC 204)
 - SVV (Håndbok xxx)
 - .. internationally
 - ITxPT (Executive Board, Various WGs)

Future solution

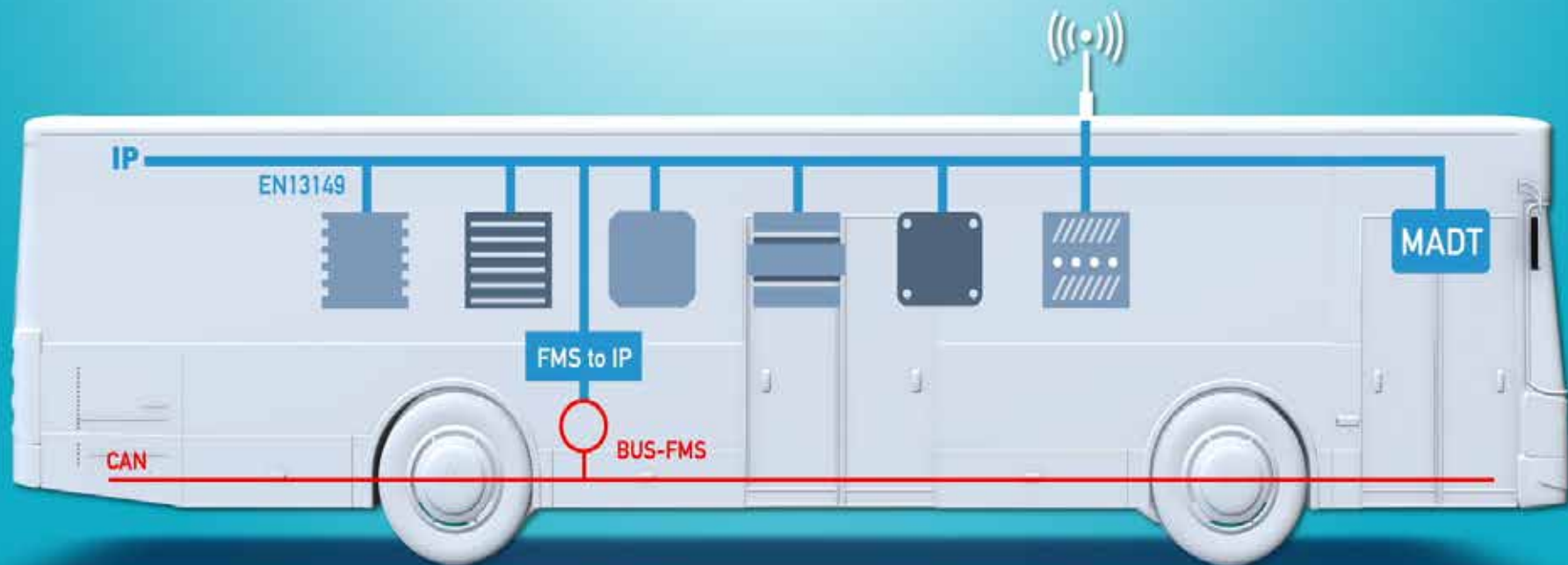
- ITxPT builds upon
 - EBSF Project (European Bus System of the Future)
 - 3iBS Project (Intelligent, Innovative, Integrated Bus System)
- The purpose of ITxPTs
 - Support the implementation of standards and to provide an arena for sharing experiences within «plug & play» IT-solutions on-board vehicles
 - Contribute in the development of EN 13149-7/8/9 through thight collaboration with CEN/CENELEC (TC 278 and relevant WGs)



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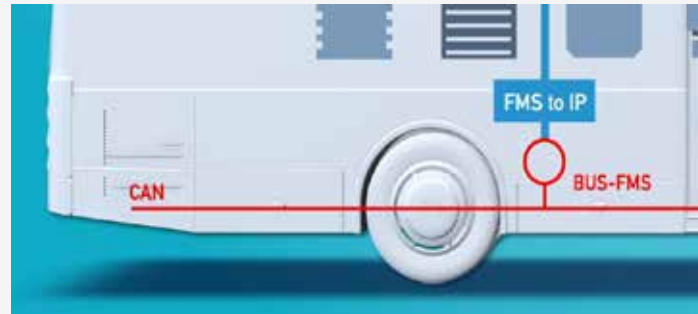
Ruter#

future



Future solution

- Vehicle-specific networks are not IP-based
 - CAN = Controller Area Network (bus)
 - TCN = Train Communications Network (tram)
- «BUS-FMS interface» and «FMStoIP gateway» will ensure that the vehicle-specific systems can connect to the new IP-network thus allowing resource-sharing



Future solutions – summary

- Ruter wish to mandate the use of standards in the coming tenders
- Ruter wish to specify only functional requirements and data formats
- Ruter request you feedback in regards to
 - Implementation of ITxPT standards
 - Feasibility of operator takes full responsibility of the on-board IT-systems (e.g. acquisition, installation, operation and support)
- Ruter will continue to assess the maturity of standards, off-the-shelf systems and organisational readiness and conclude before the tender documents for Romerike are issued

