



AŽD Praha s.r.o.

AZD solution for On-Board Train Integrity (OTI)

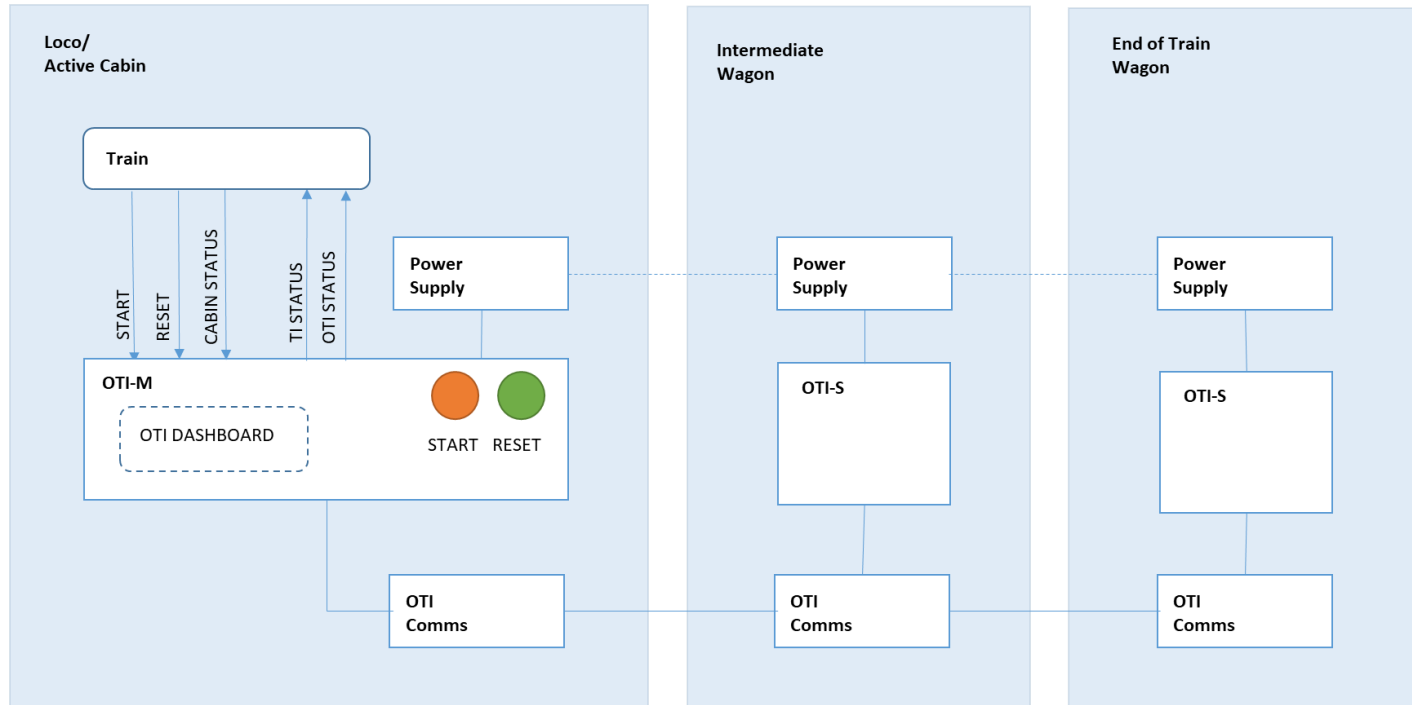
AŽD Praha, Czech Republic

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BACKGROUND

- Autonomously verify completeness of the train, while the train is in operation
 - In case that the completeness of the train cannot be confirmed, the loss of train integrity, will apply the defined actions and as consequence will inform the ETCS Radio Block Center (RBC).
- AZD solution
 - Fully compliant with Shift2Rail TD 2.5 specifications, thus following ETCS Change Request 940 (SUBSET-026 v3.6.0).
 - Allows full ETCS Level 3 operations.
 - Implements safe Train length function with automatic train data entry to ETCS OBU.
 - AZD solution is primarily developed for regional lines with flexible retrofit options.

AZD ON-BOARD TRAIN INTEGRITY ARCHITECTURE



- Reliable, cable-based communication system
- Providing the train driver with full system control and overview

AZD ON-BOARD TRAIN INTEGRITY COMPONENTS

- OTI Device - Main Component
 - HW device reconfigures itself automatically based on its role within the OTI architecture (OTI-MASTER, OTI-SLAVE, OTI-END OF TRAIN).

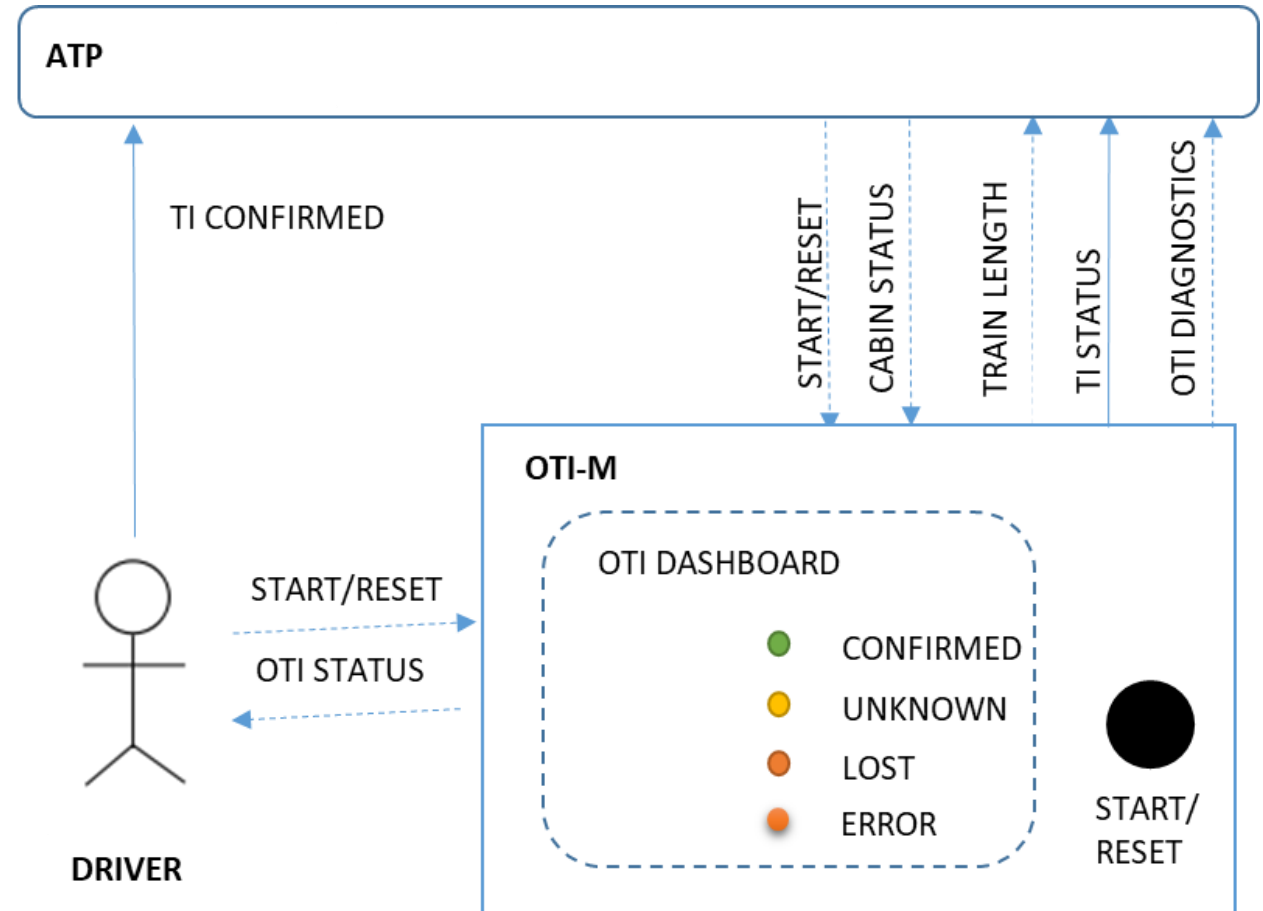
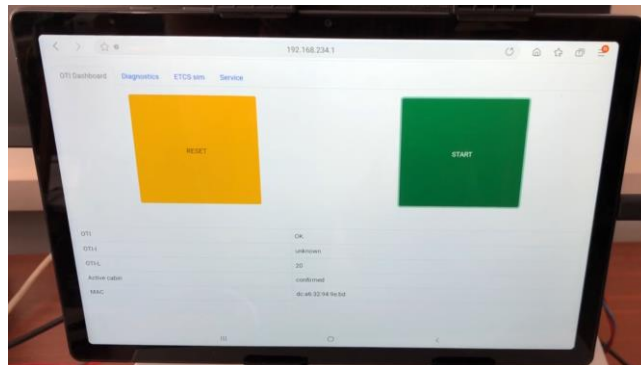
- OTI Network
 - ETHERNET based cable connections, using standard components (military grade connectors with mechanically resistant cables).



AZD ON-BOARD TRAIN INTEGRITY COMPONENTS

■ OTI Dashboard

- Driver operates the OTI system depending on operational scenarios (typically SoM)
- Allows reconfiguration of the system once the train composition changes.



AZD OTI ON-SITE TESTS

- Practical on-site tests – Summer 2022
 - Practical system deployment with minimal required changes to the existing train vehicles
 - Functional testing during the full train operation
 - Train joining and splitting scenario
 - Loss of train integrity scenario
 - Automatic Safe train length function
 - Automatic System recovery after temporary loss of communication network



Thank you for your attention

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