CUSTOMER CASE STUDY

MENDER

SIEMENS Mobile

KEY BENEFITS

- Secure and robust software updates for digital cab radios over LTE R

WHY MENDER

- Supports Yocto Linux image updates
- Offers both management server and client for OTA updates

Railway Forum Berlin

Company Biography

The Engineering team at Siemens Mobile Communications is working with Network Rail in the UK to enable secure and robust provisioning of over-the-air (OTA) software updates to digital cabin radios on its train fleet. It is anticipated that over 11,000 trains will have their cab radio software components and critical software patches upgraded in this way.

Challenge

The Siemens Mobile Communications Engineering team needed to perform OTA software upgrades at scale with this large device fleet. They wanted to be able to see which software versions were running on which radios, perform remote diagnostics including the recording of anomalies from tracks through the cab radio to indicate possible need for maintenance checks, and access performance logs.

Solution

Each cab radio is fitted with a custom module which combines a board based on a Freescale IMX6 Quad processor, and a QNX board connected via Ethernet. Yocto is used as the custom Linux distribution for managing the SOM operating system in a streamlined manner.

The updates must be performed over LTE-R. LTE-R (Long Term Evolution-Railway) enables the delivery of stable voice and data communications on trains running at speeds in excess of 500km/h. Live tracking of a train and transmitting railroad information to engine drivers is facilitated by LTE-R technology.

It also facilitates multimedia-based group calling and SMS services on top of voice call services. Furthermore, it enables real-time group/individual communication between train engineers and control centres.

Benefits

Mender offers a secure and risk-free OTA update management server and client solution for Siemens. Thanks to A/B partitioning, and automatic roll-outs, the risk of a device bricking in the field is minimised.

Security was also a prime consideration, and a fully encrypted communication channel supported by two-factor authentication, Mutual TLS handshakes, PKI public key encryption and the zero trust architecture adopted by Mender, makes Siemens able to comply with the IEC 62443 Security standard target of Level 3.

Siemens benefits also in terms of control and flexibility in managing updates achieved by features like device grouping and filtering, and the possibility of phased rollouts.

Learn more at Siemens.com

MENDER

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