CASE STUDY

INTEMPORA
MULTISENSOR SOFTWARE SOLUTIONS
A dSPACE COMPANY

TRX R6

Quickly Get Started with Big Data for Autonomy and Vision System R&D on the Journey to Driverless Trains

Overview

Quickly get started with the validation of the train vision sensor stack.

Challenges

- Integrating sensors
- Sensor speeds and data volumes
- Ease of identifying corner cases

Solution

With Intempora RTMaps* running on TRX R6, developers can efficiently get started and access key R&D data with tagged corner case scenarios from RTMaps.

Benefits

With RTMaps running on TRX R6 out of the box, developers get a jump start on their R&D programs, by eliminating the hassle and time spent installing, configuring and debugging access to the train sensor stack.

* Requires Intempora license

Executive Summary

In partnership with Intempora - a dSPACE company - RTMaps is available as a certified appliance for data logging on the TRX R6 EN compliant compute gateway, enabling developers to easily and quickly get started with validation of the autonomous train sensor stack.

With RTMaps turnkey support of many sensors from the market, its numerous built-in features and its graphical development interface, developing and maintaining data logging solutions for onboard vision systems and object detection is much easier.

Developer Requirements

TRX R6 is an open architecture compute platform, on which developers can deploy and integrate their own software stack alongside RTMaps for the continuous integration and delivery of autonomous driverless train functionality on the journey to GoA4.

With minimal time and effort spent on setting up the development environment and integrating to the train sensor stack, developers can focus on the core objectives of delivering the next generation of driverless train capabilities.

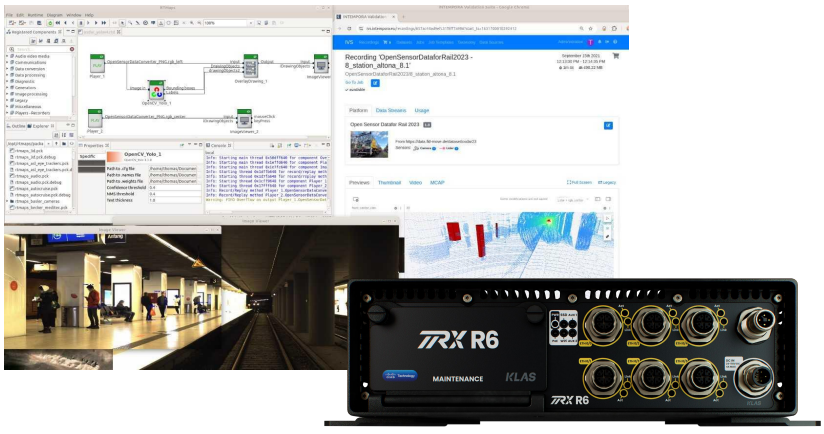

Figure: TRX R6 is an EN compute gateway, enabling ease of connecting RTMaps to onboard IT services and sensors.

KLAS

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EN Compliant Compute for R&D Data Logging

TRX R6 is a compute cellular gateway, underpinned by the KlasOS Keel operating system, supporting virtualization and secure connectivity over mobile networks.

With RTMaps running as a service on the TRX R6, and secure remote access to the cloud, quickly gain access to R&D vision systems as part of the journey to GoA4 - driverless trains.

In addition, Keel supports pass-through of serial peripherals e.g. USB, CAN, MVB to the hosted RTMaps service, allowing users to efficiently collect and store data locally on the TRX R6.

Furthermore, TRX R6's SSDs are removable, enabling technicians to efficiently transfer the logged data from the train, for ingest to local developer workbenches, HIL/SIL, or transfer to the cloud.

RTMaps

RTMaps™ is a versatile software tool that enables end-to-end development and testing of perception systems and obstacle detection algorithms in autonomous trains; from integration and prototyping; software and algorithms development; execution and processing testing; to recording and validation of your autonomous system.

RTMaps streamlines the development process for autonomous train perception systems, allowing engineers to focus on algorithm design and performance optimization rather than low-level software integration tasks.

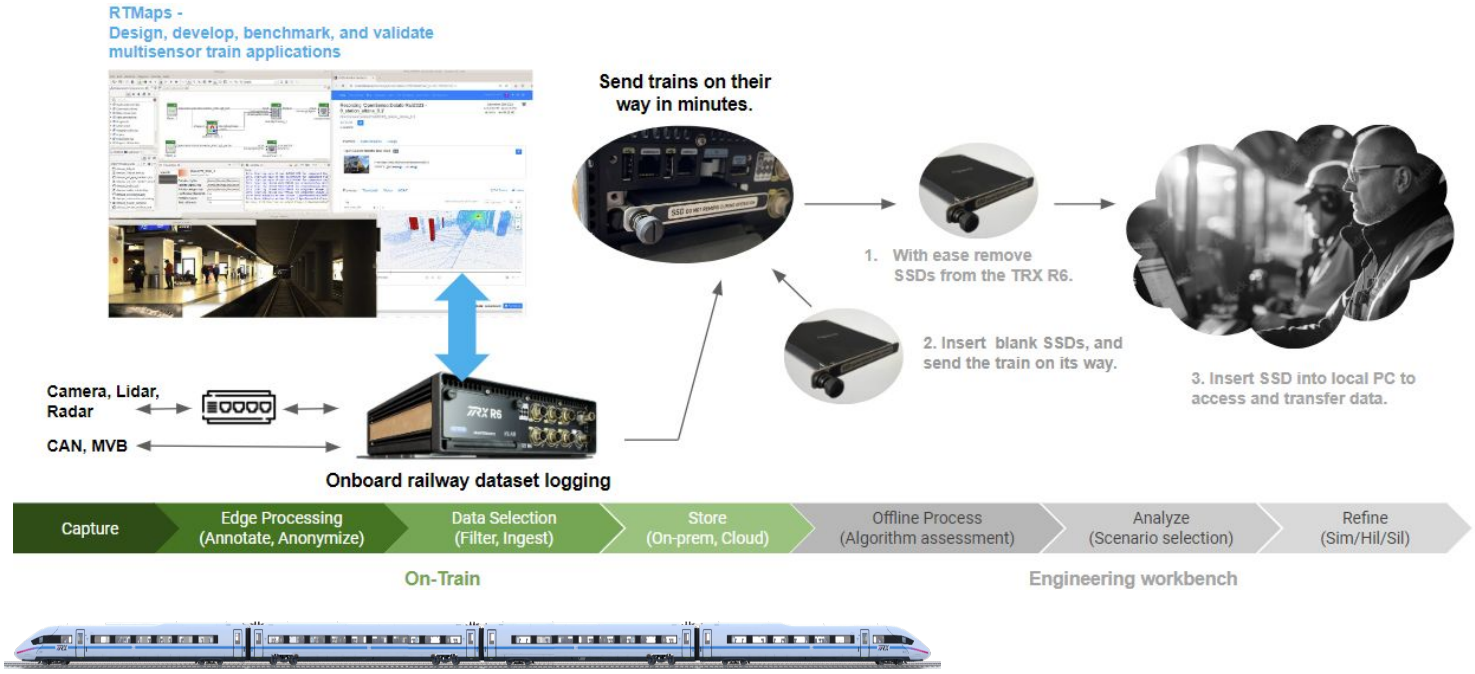

Figure: RTMaps running on TRX R6 enables efficient R&D data capture of driverless train corner cases for developers.

Conclusion

The holistic solution of the TRX R6 EN compliant compute and RTMaps running in trains, allows developers to quickly get started with:

- Multi-sensor data capture with accurate timestamping
- Data logging including support for multiple file formats
- Smart data logging (event based triggered recording, pre-triggered recording)
- In-line processing & application diagnostics
- Tagging & monitoring of the logging and software status

For more information on Intempora RTMaps, visit:
https://intempora.com/products/rtmaps/

For more information about Klas visit:
www.klasgroup.com/transportation/

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