Feature ETCS monitor

EVA+ as an ETCS monitoring system

On-line system monitoring is a growing trend within the rail industry. Whenever a JRU (juridical recording unit) is installed on a vehicle according to ERTMS/ETCS specifications (TSI CCS / Subset-027), the JRU data can be analysed live with EVA+. Furthermore EVA+ is capable of analysing any ETCS message which is recorded and/or sent to the EVA+ system. This makes EVA+ an ERTMS/ETCS monitor for the supervision of daily operations or the assessment of special missions like testing, commissioning or other investigations.

Data collection process:

EVC	JRU	Communication	Offboard
ETCS on-board unit	ETCS recorder	GSM, WiFi, manual, …	EVA+ system

The evaluation of the recorded data is performed automatically by the EVA+ server. Depending on the event definition the event generator "searches" the data for signals constituting such an event. Alerts can then be pushed or pulled by the system in order to inform the right stakeholders.

Features of the ETCS monitor

EVA+ provides a number of features in the context of ERTMS/ETCS monitoring. Those features support train operating companies or infrastructure managers in their daily business. The result of continuous measurement of the operational performance in ETCS is enhanced productivity of the railway service. Within the ERTMS domain analysis can be done on almost any parameter of the system. A selection is given below.

Balise Group Error Check

Locate balise groups (BG) which report an error message when a train is passing. The BG's location can be displayed on a map or with GPS coordinates in a table. BG ID and other information can be passed on in order to prepare the maintenance staff to take action.

Odometer Quality Check

Odometer accuracy and performance is still a big challenge for daily ERTMS operations. To assist with this issue EVA+ can evaluate the odometer performance by using the relevant information from the confidential interval given from the ERTMS/ETCS system.
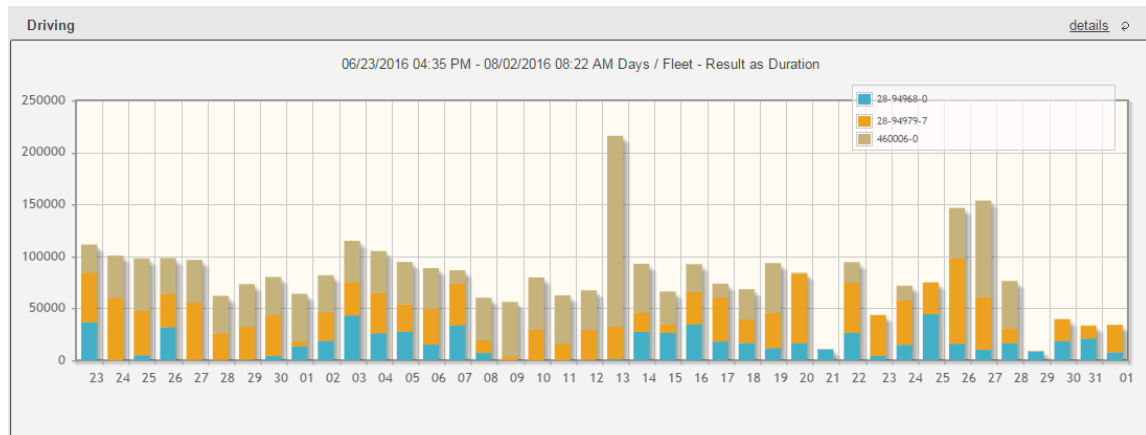
Evaluation on system performance

Today's reliability and availability of railway vehicles is a key for success when providing a high quality service. Calculation of those parameters is possible and related reports are showing the necessary information to check if the requirements are met.

Mileage calculation for ERTMS operations

Railway infrastructure managers have the possibility to charge different track access fees depending on the operational mode in which a railway undertaking is using the network. Data analysis with EVA+ allows the calculation of the operated distance for each operational situation. Therefore the travelled distance when ERTMS was active can be calculated.

Example of mileage statistics over a fleet (3 vehicles)

Key benefits

Enhanced customer experience
- Minimise delays for passengers with smart and self-learning tools for timely maintenance actions
- Integration with 3rd party systems enables operators to deliver accurate information on service changes, delays and connection updates to passengers on time.

More business insight
With EVA+ the system owner can use data analytic features to gain new insight into reliability and availability versus targets and objectives, supporting smart, evidence-based decisions. It will become evident that system performance is a crucial KPI for strategic planning.

Streamlined operations
EVA+ allows streamlining the operations based on an accurate and real-time view of service disruptions and degraded situations for the technical availability of the ERTMS environment.

Service monitoring
EVA+, with its different views of services in the GUI, can be tailored to be based on geographical areas, onboard systems, infrastructure assets or other customised dimensions.

Scalability
EVA+ is suitable for all types of operators. Solutions can be easily scaled and customised to meet the needs of small or large, urban or regional, passenger or maintenance operators and infrastructure managers.

Lower TCO
As an overall result EVA+ can reduce operational costs with its functionalities delivered on a single, cost-effective hardware and software platform or in the cloud as a fully service based approach (SaaS).

Author	J. Richard	22/07/2016	**Content Haslerrail Portal**		
Reviewed	S. Dietiker				
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