

## Feature operational monitoring

### **EVA+ provides operational service monitoring**

HaslerRail's EVA+ software supports train operating companies during operations by providing operational information to the relevant team. The vehicle data can be transferred automatically into the EVA+ database and therefore can be analysed while the vehicle is in service or in any other location.

For certain alerts such as emergency brake on track, a message can be pushed to a mobile device, which allows the fastest possible reaction.

All recorded signals can be taken into account to judge the health of a vehicle. Fuel level, subsystem failures, speed, safety events, or environmental measures such as GPS, temperature or any other signal put forward to the TELOC®. A vehicle can be located on a map and highlighted based on signal values.

### **Features of the operational monitor**

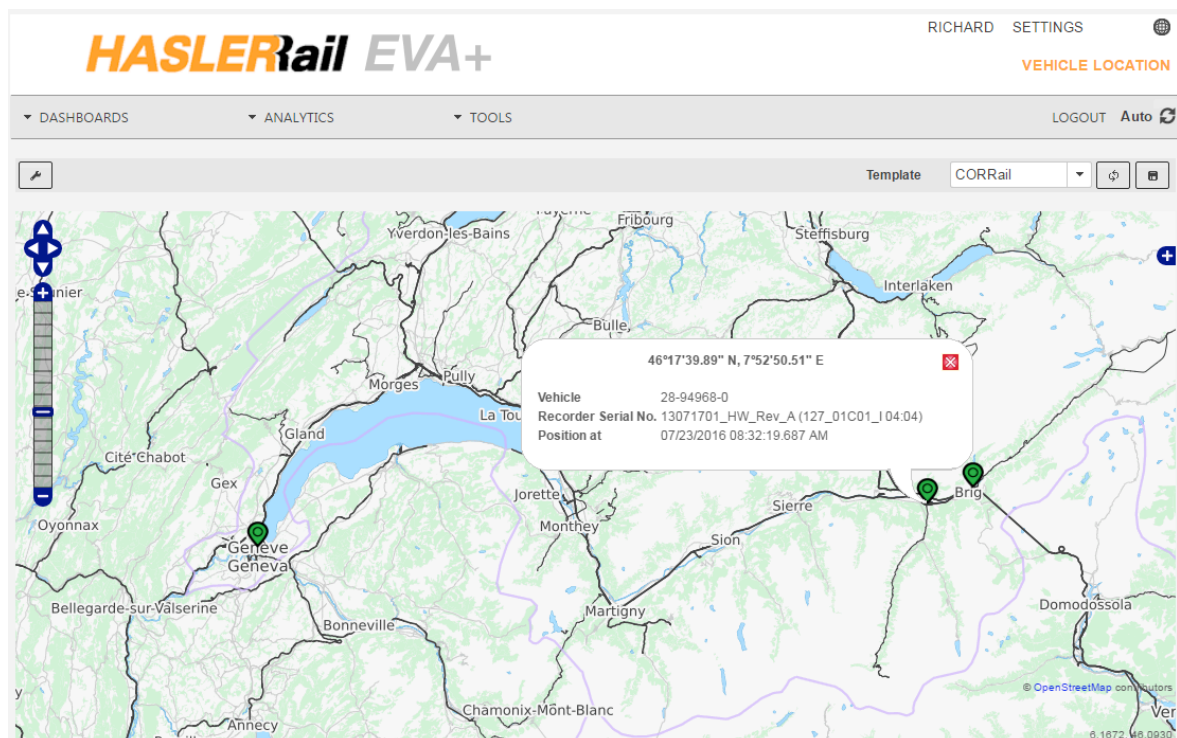
EVA+ provides a number of features in the context of operational service monitoring. These features support train operating companies or infrastructure managers in their daily business. The result of continuous measurement of the service is enhanced railway productivity. A selection of features is given below.

#### **Live fleet location services**

EVA+ makes train and vehicle location services available

- Search any asset directly on the map, or filter the map by fleet, vehicle class or train status
- See where the fleet is in operation, where it is idling or where problems occur.
- Observe when a vehicle has an issue as soon as it becomes an indication on the map

Let your operations team work proactively rather than reactively when it becomes necessary. Bookmark points of interest such as ends of mission, workshops or fuel stations to reroute trains efficiently in case of an incident. Geo-fencing features are also available.



#### **Verify timetable accuracy**

- Decision support for daily operations through automatic alerts when trains are not running according to plan. Delayed trains are automatically indicated on the live map view and alerts are sent to the relevant staff in order to take action and plan ahead
- Provide customer information about delays or about passage time at specific points of interests

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- Automatic reporting of departure and arrival time, delay time, km travelled, fuel and energy consumption, etc. as per traffic category.
- The operator is able to obtain coherent information on planned vs realised production and can analyse the traffic profitability, cost per km, fuel/energy consumption, fleet utilisation, availability and performance

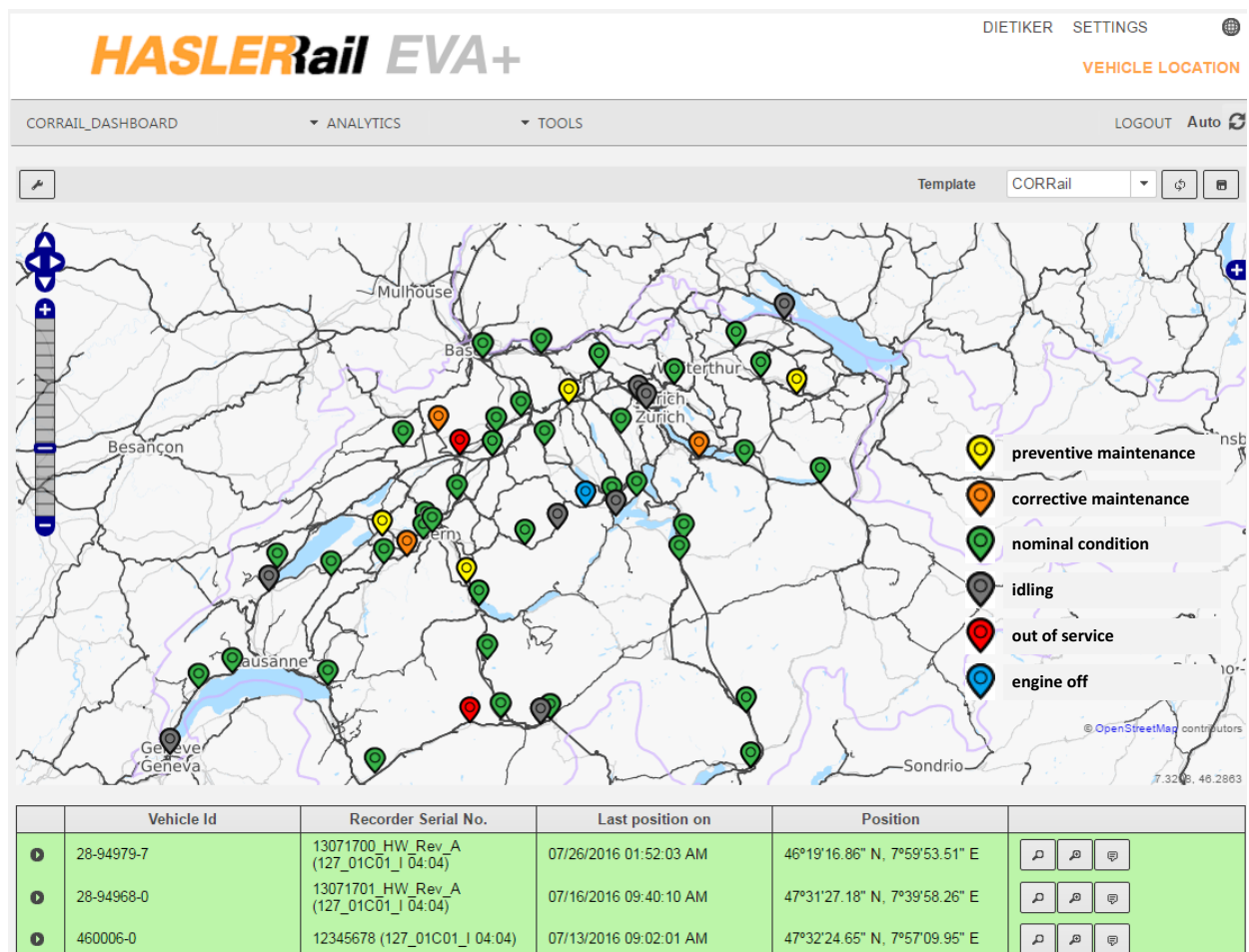
>> Bild zu Data integration

### Direct driver support

A Helpdesk may receive the vehicle data on a driver help request in order to minimize downtime of vehicles in service. For certain alerts such as emergency brake on track, a message can be pushed to a mobile device, which allows the fastest possible reaction.

### Proactive fault management

- Be alerted automatically when the battery voltage drops low on a parked train and avoid train cancellation costs.
- Plan refuelling events without surprises by knowing when the fuel level runs low.
- Act swiftly on high coolant temperature alerts to avoid catastrophic in-line failure.
- Automate alerts to be immediately informed when the train enters and leaves the workshop.



### Monitor availability & reliability

- Capture crucial availability and reliability information in a few clicks
- Inform the operations and maintenance teams immediately
- Manage disruption efficiently

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- Identify costs, penalties and downtime generated by failures

Managers finally have a reliable source of information in order to perform improvements in fleet performance.

>> Bild zu availability

### Key Benefits

#### Reducing downtime

Reduction of reaction time on system failures on track can influence delays directly. Improve the uptime of your services and become more productive.

#### Reducing maintenance time

Maintenance activities can be planned ahead of a vehicle arriving at the workshop. This significantly lowers the workshop time to fix the vehicle and reduces the overall downtime of the vehicle.

#### Operational accuracy

EVA+ leads to improved operational information since this is based on real (recorded) data instead of planning information. This reduces the tolerance of vehicle usage and therefore optimises the maintenance cycles or improves the service quality due to decisions based on better information.

#### Mileage reminder

A so-called mileage reminder could be used in many ways. As a static value for reoccurring maintenance work on the vehicle, mission calculation in order to hit the maintenance slot or to support the operational planning of the vehicle while in service.

#### Customer friendly

EVA+ supports operators becoming more customer friendly. For instance, a company that is using EVA+ can tell a customer exactly where their vehicles are, which allows them to understand what has happened in case of an incident.

#### Informative capability

Questions regarding vehicles can be answered anytime without complicated investigation by, for example, calling and distracting the driver.

#### Business Control

By having detailed information on the location of all vehicles and drivers, executive managers are far more in touch with their business operations, meaning they have greater levels of control over their company and an improved business insight.

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