DEUTA RedCloud®
## Data overview in real time

DEUTA AMERICA
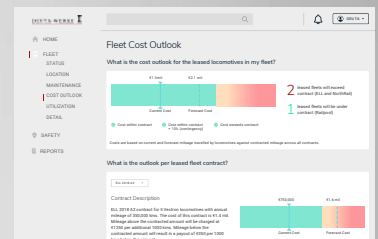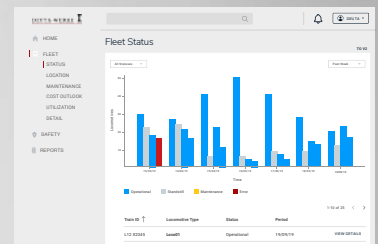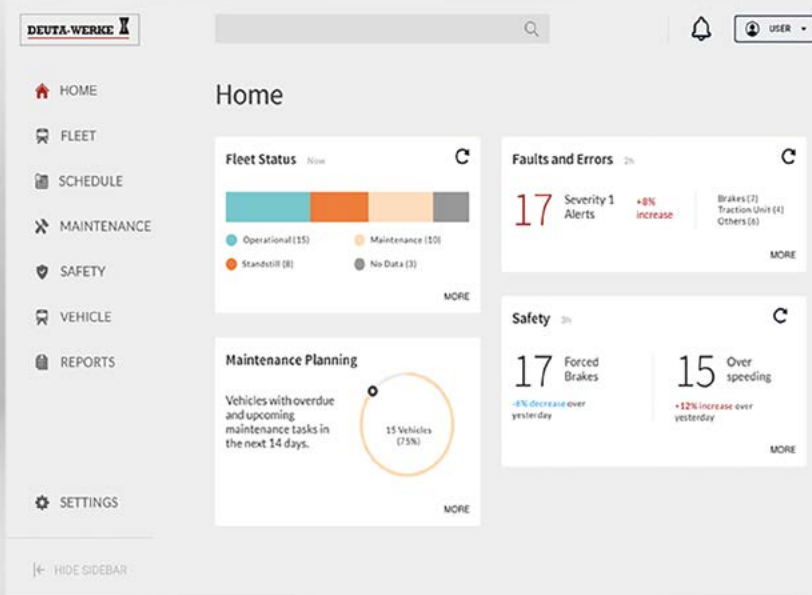
»DEUTA RedCloud® –
Processing, Analyzing, Planning«

DEUTA RedCloud®
DEUTA RedCloud® is a cloud-based software solution for real time acquisition, processing and analysis of event recorder and sensor data, improving efficiency of railway operations, proving compliance and supporting maintenance activities.

Our approach
We use Lean Product development with human-centred Design Thinking to develop our solution. We partner with potential customers to understand their goals, challenges, problems and pain points. We immerse ourselves in the world of our customers and users. We test user interactions using prototypes. We iteratively develop the solution, continuously testing after each iteration. This ensures we address our customer's most important problems and our solutions are intuitive and fit into existing workflows.

Your evaluation - and fleet data at a glance
The goal of DEUTA RedCloud® is to provide a fleet-level view by aggregating data from multiple trains and subsystems. This would provide insights into train use, operations and maintenance activities, which can improve uptime, reliability, safety and reduce cost.

The innovative user interface of the DEUTA RedCloud® presents all data clearly at a glance: speed, analogue and digital tracks and train control data are displayed at the same time.
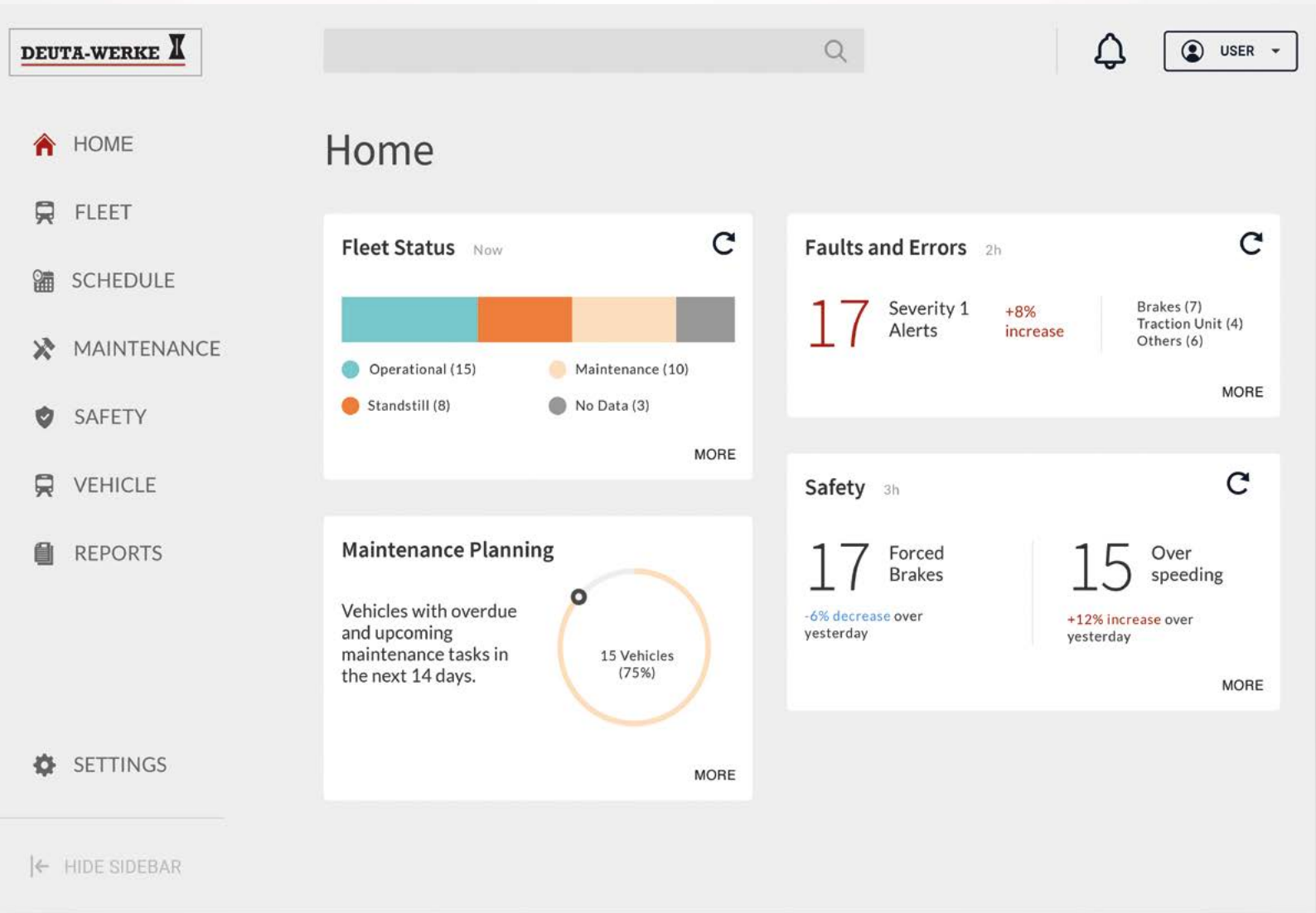
»The Basics«

1. Remote Data Acquisition
Data remote acquisition from Deuta and third party recorders and sensors on board passenger, freight, and city transit trains to DEUTA RedCloud®.

2. Secure Cloud
Recorder and sensor data stored and processed on a secure cloud. Standard APIs to import/export data to other systems.

3. Modular Applications
Modular applications for Fleet Management, Maintenance Planning, Real-time alerts, Data Insights, Compliance, Energy Use. Accessible on all devices.

»Fleet Management«

The Fleet Management module provides a view of operational status across the entire fleet. It provides details on fleet location, standstill, upcoming scheduled maintenance based on mileage or operating hours, and the ability to drilldown into the details of a single locomotive.
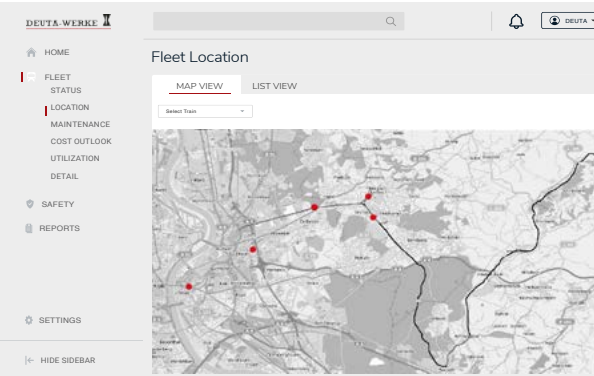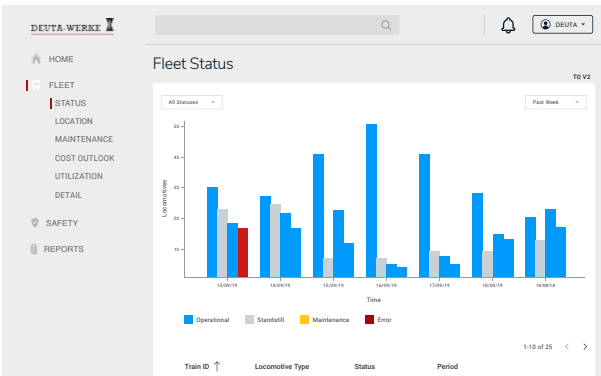
The Fleet Management module includes algorithms to estimate dates for planned maintenance based on past mileage (for mileage-based maintenance) and operating hours (for operating hours-based maintenance). The module also allows modelling maintenance dates by increasing/decreasing utilization.
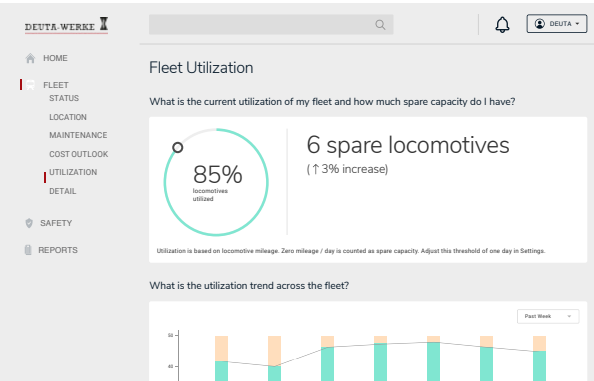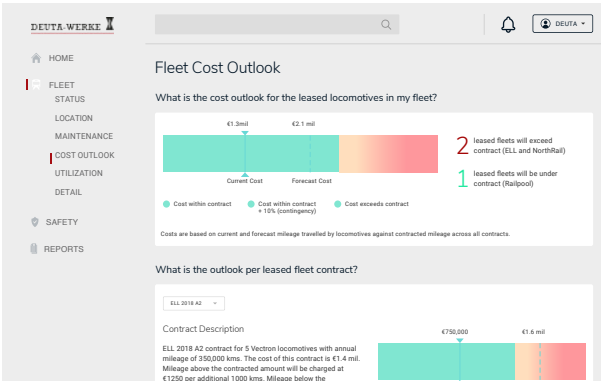
»Maintenance Planning«

The Maintenance Planning module provides details on all upcoming scheduled maintenance and past completed maintenance operations faciliating more efficient planning. The module also provides the ability to store the log of maintenance tasks performed ensuring all information is accessible in a single place.
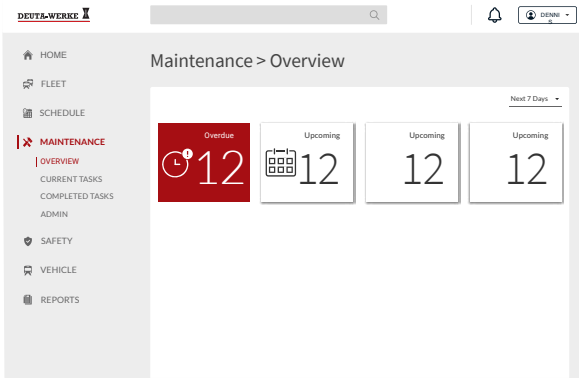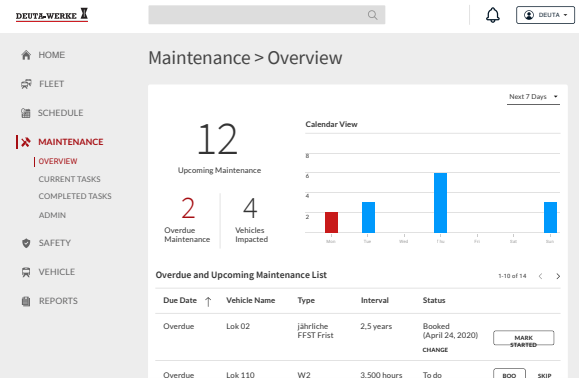
»Safety and Compliance«

The Safety and Compliance module provides automated reporting and alerting on common safety topics such as overspeeding, signal overruns / forced braking. The Reports module automatically extracts reports from Deuta juridical recorders for evaluation.
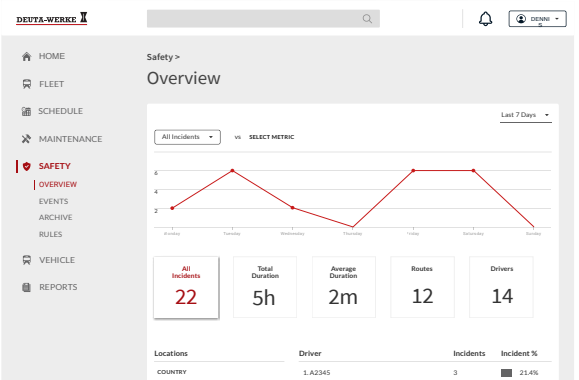
»Driving data evaluation«

The innovative user interface of the DEUTA RedCloud® presents all data clearly at a glance. Speed, analogue and digital tracks and train control data are displayed at the same time. You have the choice of viewing the data chronologically (time based) or over a certain stretch of the track (route based). The table display shows decoded signals and messages chronologically. Additional items of information such as vehicle number, owner and data scope are also provided.
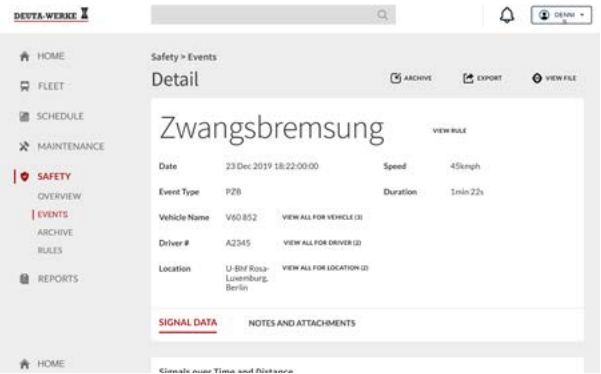
»Customizable Dashboard«

View all your important information in a single dashboard with one click access to fleet, maintenance and safety information. The Dashboard integrates alerts and notifications and is customizable by employee role.

»Other Modules«

The Energy Management module provides a view of total energy (and fuel) consumption across the whole fleet for both electric and diesel locomotives. It allows setting thresholds for consumption, tracking differences by location, locomotive and driver, and monitoring variances from "ideal profiles."

»Advantages«

Independent Solution

- Manufacturer independent solution
- No vendor lock-in
- Operators can pick the least expensive offer on the market
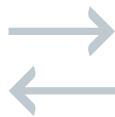
Third Party Integration

- API-First architecture allows easy integration with existing systems and products

Security by Design

- Designed from the bottom-up with security, access control and governance principles
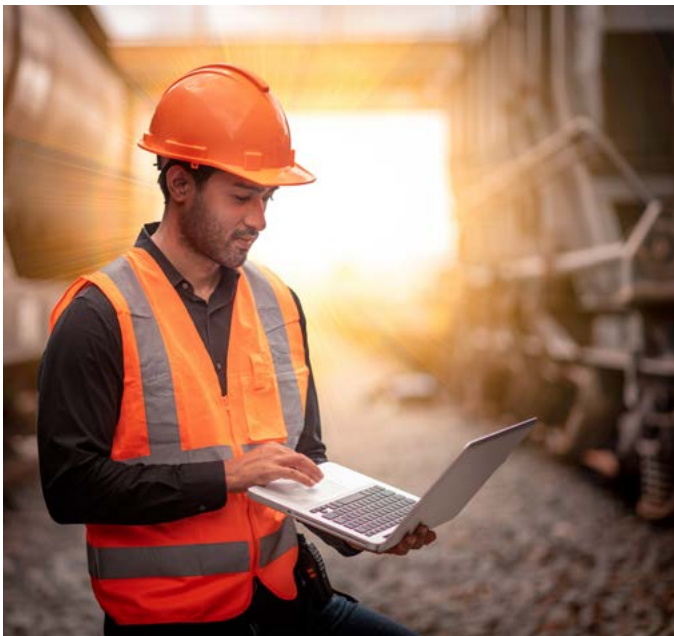
Modular Architecture

- Customers can pick and choose modules that fit their needs instead of a single lock-in solution

Flexible Customizable

- We work with our customers to build solutions tailored to their needs

Operational Efficiency

- Real-time location of fleet
- Mileage" (kms, operational hours)
- Journey analysis and fault alerts

Improve Safety and Compliance

- Reports on signal overruns
- Reports on overspeeding
- Driving profiles
- Automated analysis of juridical data

Maintenance Planning

- Plan maintenance based on actual events - kms, operating hours
- track and view maintenance plan and activity

Reduced Energy Costs

- Real-time data on energy use
- Historical analysis to optimize planning and reduce cost
- Machine Learning algorithms to derive "ideal" driving profile

Improved Reporting

- Detailed insights into performance of vehicles and compare across multiple variables
- Rich visualizations of analysis and trend information

Case Study: Maintenance Schedules

Railway operators with maintenance schedules based on "mileage" (operating hours, kilometres, running hours) lack the capability to determine exact mileage across their fleet in real time. Using a manual process does not scale across large fleets. Using 'rough' estimates results in rolling stock sent for maintenance too soon or too late. It can also result in congestion at the maintenance depot. DEUTA RedCloud° addresses this pain through its fleet management module. The module will provide operators with real time view of mileage across their fleet along with estimated date when maintenance will be required (based on algorithmic analysis), ensuring rolling stock is sent for maintenance check at the right interval.

Case Study: Fleet Status

Fleet status is a recurring problem for both operators and leasing companies. Which locomotives are available? Which ones are at standstill? Where (in what location) is spare capacity? Are there any locomotives out of operation due to high severity actionable faults / errors? What percentage of the fleet is in maintenance? When will locomotives be back from maintenance.

RedCloud answers these questions by integrating data from a veriety of sources into a single, unified view of a railway operator or leasing company's fleet. The fleet status allows drill-down into individual locomotive detail and provides comparison over past time periods to see trends on availability, standstill, actionable faults and errors.

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