Sitras Sidytrac Live

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Create transparency of your traction power supply network in real-time. By reducing the complexity by means of live data analysis you can avoid failures before they occur, and utilize the system more efficiently while saving energy.

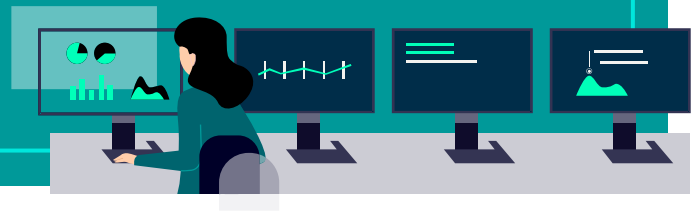
Sitras Sidytrac Live

Product Description

The growing challenges on traction power networks and day-to-day operations call for a system that constantly provides an upcoming state to take the right actions at the right time. **Sitras Sidytrac Live** offers forecast simulations in real-time, by giving an outlook on potential errors and detailed information for prevention. **Sitras Sidytrac Live** is tailored to each customer´s operating state, allowing a broad control over maintenance activities to consistently drive efficiency rate up.

Sitras Sidytrac Live application

- The Digital Twin of the real railway and traction power supply system
- Analysis and precise forecasts in combination with related subsystems
- Simulations in live or preview mode for decision support
- Wide information for optimization



Sitras Sidytrac Live includes various modules and allows connections to related subsystems:

Train operation

- Traffic Management Systems (TMS)
- Transfer of actual status and current timetable

Power supply

- SCADA
- Transfer of actual status

Protection Stability Check

- Verification after change of switching state

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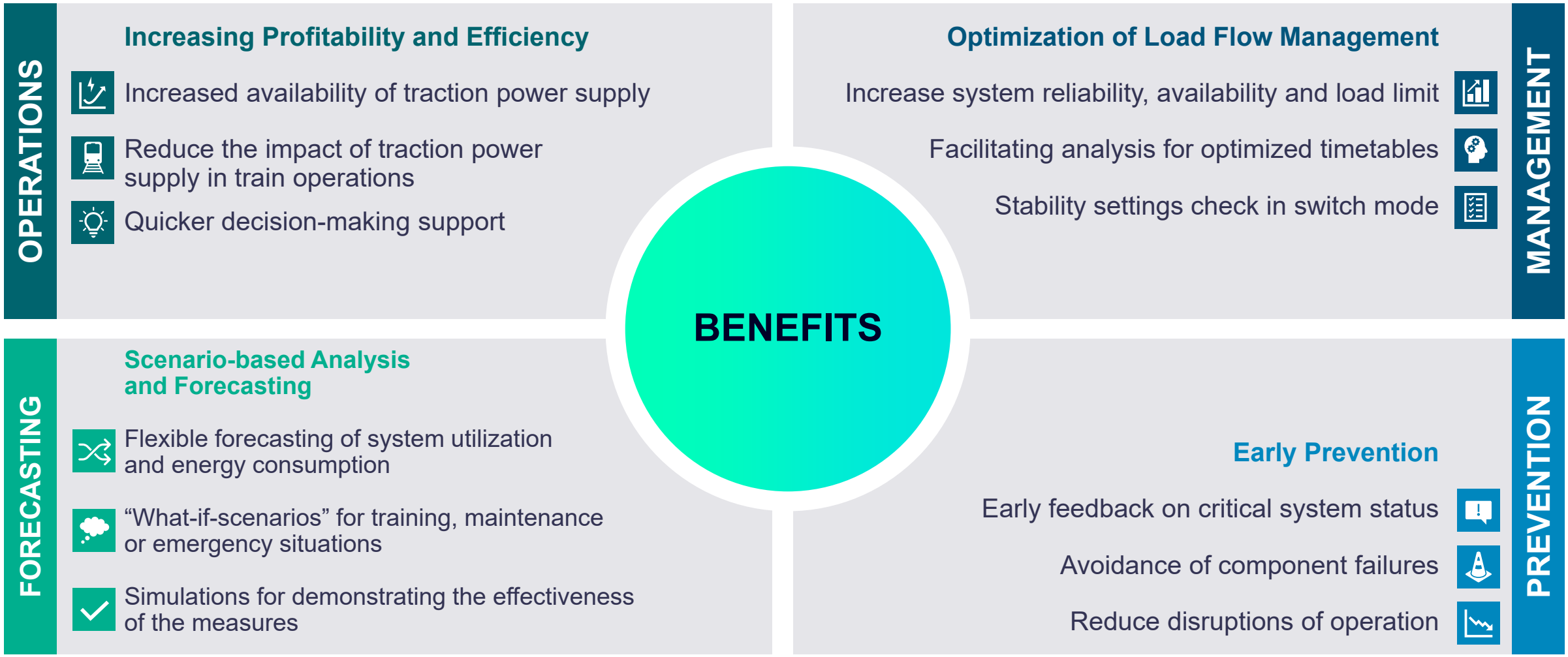
Benefits of Sitras Sidytrac Live



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Key Functionalities

Flexible Displaying of Information

- Adaptation of the dashboard to specific operational roles
- Availability of relevant information at anytime
- Customization of the analysis and KPIs according to the operation needs

Adjustable Train Operations

- Adjustment of train operations, e.g. timetables
- Adjustable forecast time window for the setting of the simulation duration as desired
- Different types of display of KPIs when running simulations (two display formats, table, and diagram)

Overview of Relevant Events

- Display of the most important KPIs and curves of relevant parameters with track accuracy and for defined sections
- Preview window to see at first glance the location of problems in the network

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Key Functionalities

Supply Voltage

- Calculation of voltage supply quality for the forecast time window
- Representation of minimum and maximum voltage in a diagram
- Identification of which size range the voltage is within a line section

Component Load Window

- Display of the thermal load of all relevant components (e.g. transformers, rectifiers, cables)
- Prediction of tripping of protective devices with calculated potential peak loads

Protection Stability Check

- Check of all current protection settings and the overcurrent shutdown conditions of the traction power supply system
- Evaluation of all possible short-circuit currents by the system
- Monitoring of the protection stability of the system by revising the operating peak currents against the protection settings

System Architecture

Data sources

Information to OCC Traction Power

- Status electrical network
- Status train operation
- Online train schedules
- Static data infrastructure and rolling tocks

System connectivity

Real-time input processing

Simulation model

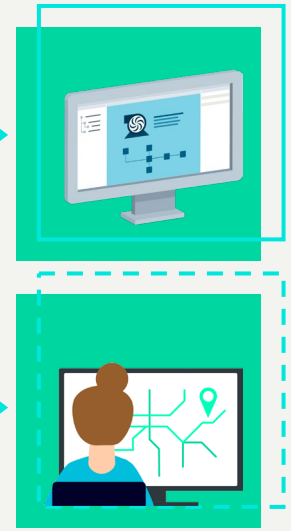
Data processing

Software Kernel for simulations

- Dynamic drive cycle calculations
- Multitrain simulation and load flow calculation
- Data processing for results of electrical network e.g. currents and voltages

Output front end

Information to OCC Train Operation



Information to OCC Train Operation

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References

PoC – as part of RailXplore EOO
with SMO RI MT for East Rail Line in Hongkong

Sitras Sidytrac Live is tested in a day-ahead operations planning and optimization of one train line, with the aim of finding energy saving potentials. RailXplore EOO is used to minimize energy losses.

ÜSTRA

Customer
ÜSTRA Hannover – Germany

Sitras Sidytrac Live is installed as training system for the operations staff of the traction power supply. This makes it possible to visualize the system's behavior (e.g. voltages, powers, currents) as a result of switching operations or changed schedules. It results in better trained personnel, who is capable of utilizing the complete system more efficiently.

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