RailXplore EOO

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The energy-optimized operation app optimizes mass transit time tables, avoids power peaks, and uses the recuperation energy most efficiently.

RailXplore EOO (Energy Optimized Operation)

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Product Description

Limited transparency regarding energy consumption can lead to high penalties due to the exceed of contractual power peak, moreover, it does not allow to use the potential of the recuperation energy – **RailXplore EOO** is our answer to save resources. Good planning of railway operations and subsequent monitoring of the ongoing execution are the basic prerequisites for optimal operations. More than ever, the energy efficiency of a metro system is relevant for the operator and society. With **RailXplore EOO** we effectively reduce energy consumption within the metro system.

RailXplore EOO dashboard

- ✓ Energy-related timetable optimization
- ✓ Simulation of signaling and traction power system
- ✓ Live monitoring of metro operation
- ✓ Forecast of system status

RailXplore EOO implements algorithms to analyze operational data and provide different levels of insightful optimizations:

Product variants
- EOO Offline
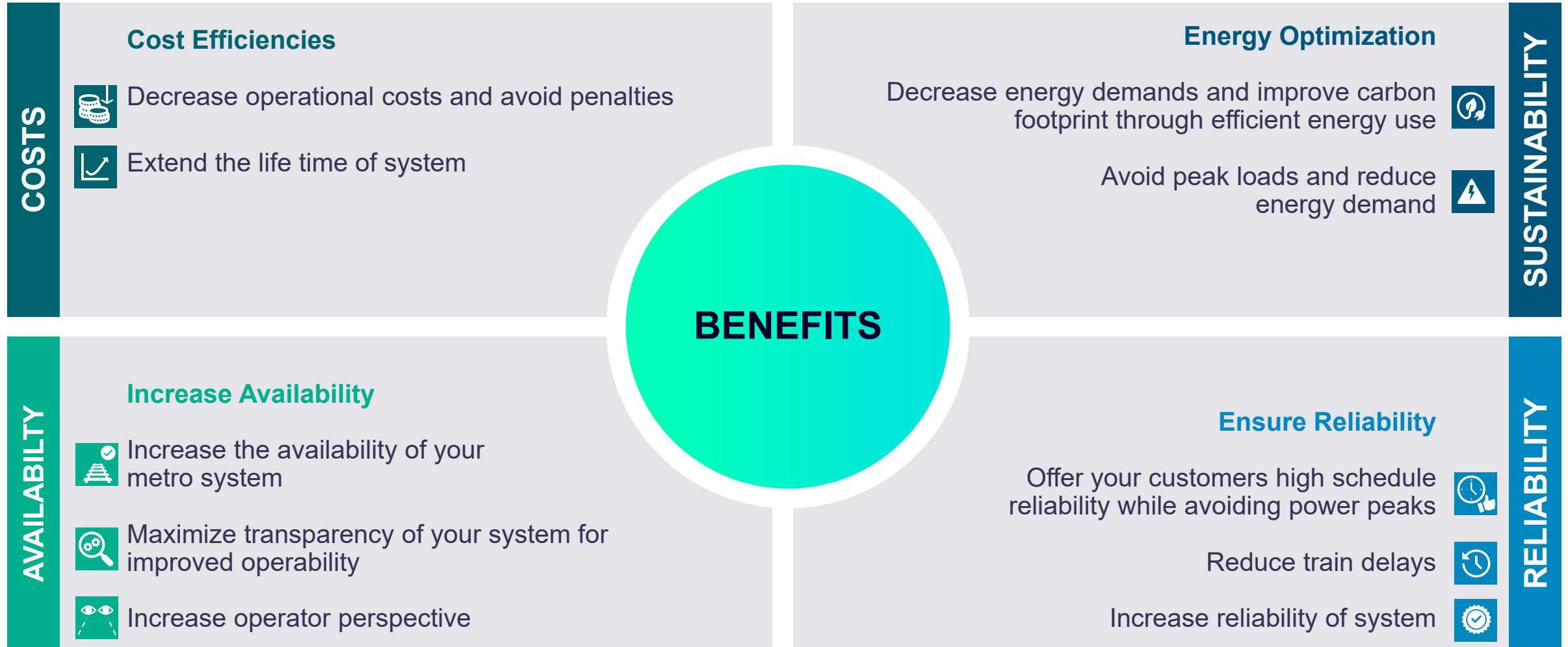- EOO Offline plus
- EOO Online

Data collection
- Train location, energy, and weight
- Operation timetable
- Status of traction supplying system (P-SCADA)

Controlguide® Falko
- Siemens application for constructing and simulating operative railway timetables

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Benefits of RailXplore EOO

COSTS

Cost Efficiencies

- Decrease operational costs and avoid penalties
- Extend the life time of system

SUSTAINABILITY

Energy Optimization

- Decrease energy demands and improve carbon footprint through efficient energy use
- Avoid peak loads and reduce energy demand

BENEFITS

AVAILABILTY

Increase Availability

- Increase the availability of your metro system
- Maximize transparency of your system for improved operability
- Increase operator perspective

RELIABILITY

Ensure Reliability

- Offer your customers high schedule reliability while avoiding power peaks
- Reduce train delays
- Increase reliability of system

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Key Functionalities

Save Energy Cost

- Saves energy due to efficiently used recuperation potential
- Consider technical properties of the traction power system

Improve Operation Quality

- Prove that planned operation fits with the technical setup
- Avoid system shutdown through gentle operation of the components
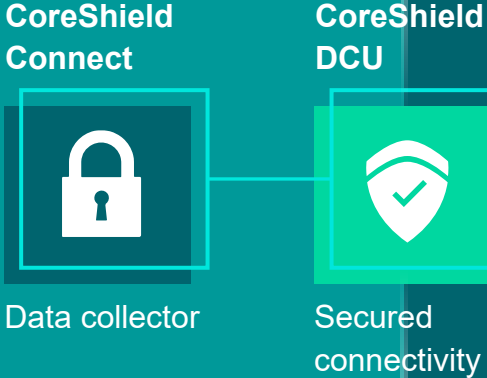
Raise Operation Transparency

- Prove operational actions before executing them
- Insights into a live system health status and taking action based on knowledge
- Explore dependencies between metro operation and power-providing system

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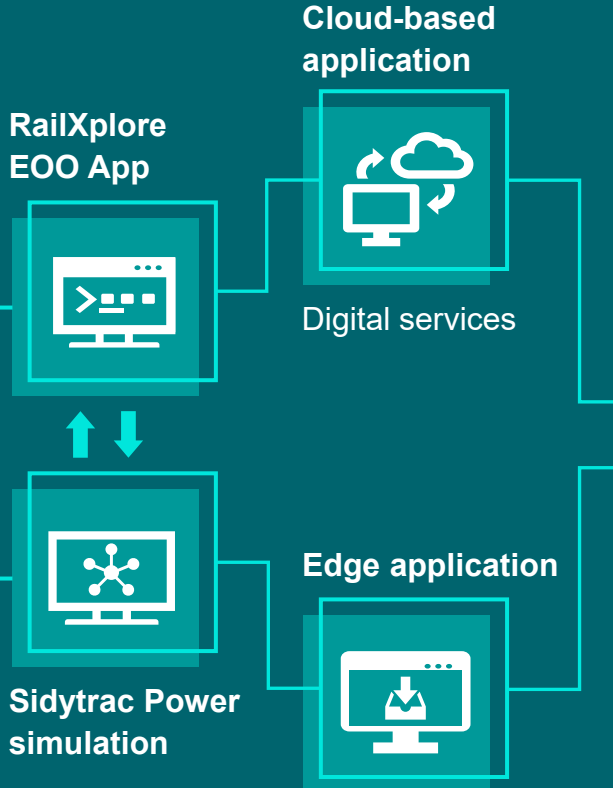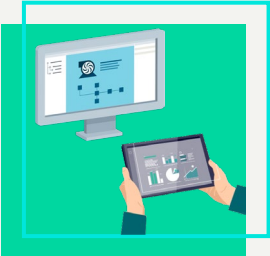# System Architecture

Data sources
- SCADA
- ATS
- IXL
- Trains
- Power SCADA

System connectivity

CoreShield Connect
— Data collector

CoreShield DCU
— Secured connectivity

Data processing

RailXplore EOO App

Cloud-based application
— Digital services

Sidytrac Power simulation

Edge application

Output front end

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References

PoC Energy Optimized Operation

Hong Kong

The proof of concept running in Hong Kong is validating the innovation of **RailXplore EOO** based on real data. The validation itself is done by a metro operation company with a loT of operation experience.

RailXplore EOO is optimizing the timetables taking into account all operational requirements and the technical properties of the traction power-providing system.

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