TECHNICAL FACTS
RaSTA

HIMA SMART SAFETY.

#safetygoesdigital

Independent Open Integration

Safe Railway-Digitalization with HIMax and HIMatrix

Seamless integration into any automation environment is one of the major product benefits of HIMA systems. With the safe communication standards RaSTA (Rail Safe Transport Application), HIMA is expanding their range of protocol options. RaSTA can be used on its own or as a safety, re-transmission and redundancy layer in EULYNX. Use of the open standard allows integration of any compatible RaSTA devices available on the market.

Thanks to its independence from the physical transmission layer, RaSTA also supports future-proof use in the FRMCS (Future Railway Mobile Communication System) alongside other protocols – always with SIL 4 quality in accordance with DIN EN 50159.

The Highlights

Simple: RaSTA runs on the CPU modules' operating system.
Consistent: Identical configuration of HIMax and HIMatrix.
Safe: RaSTA is processed in the SIL4-CPU and, using the black-channel principle, is suitable for applications up to SIL4.
Secure: All measures, such as "Defence in Depth", can also be used in RaSTA networks.
Scalable: RaSTA networks (as well as Ethernet networks in general) are suitable for any project size.
Flexible: RaSTA supports dynamic configuration and easy expansion.
Robust: Ethernet has sustainably proven its reliability in the industrial environment.
Digital: RaSTA can run on any communication infrastructure.
Centrally viewable: Unaltered forwarding of data from the field to the enterprise level. Visualization, (predictive) maintenance, optimization, as well as big-data analysis and asset management are made more efficient.
High-performance: Max. 440 active connections, with the option of modifying connections at runtime.
EULYNX: RaSTA enables SCI communication. The various variants (SCI-CC; SCI-P; SCI-LS etc.) can be customized as needed.

The high degree of **flexibility** offered by RaSTA applications provides tailored benefits in the development of the respective solution.

Key Applications: Static

1 **Static Configuration:**
A fixed installation in which all communication connections are permanent and do not change at runtime.

2 **Dynamic Configuration:**
An installation in which all possible communication connections are known, but they can be established and removed as required because they are temporary.

To ensure **reliable** operation, all connections can be monitored and controlled during operation. **Configuration** can be automated via an API in SILworX to ensure maximum efficiency, even with large communication networks.

HIMA offers **training and consulting services** so that you can exploit the full range of benefits offered by RaSTA for your individual application.

Technical Features

RaSTA implementation in accordance with the DIN VDE V 0831-200:2015 pre-standard

Nodes: Max. 440 active simultaneously
Data volume: 1100 bytes per connection
Speed: 100 Mbps
Update: Event-driven
(a heartbeat occurs without changes)
Connection: Switch 4 × RJ45
Configuration: Fully and clearly implemented in SILworX
Redundancy:
HIMax: Use of 2 CPUs
HIMatrix: Separation via logical ports
Additional redundancy: Can also be set up with corresponding infrastructure components at the network level to increase availability.

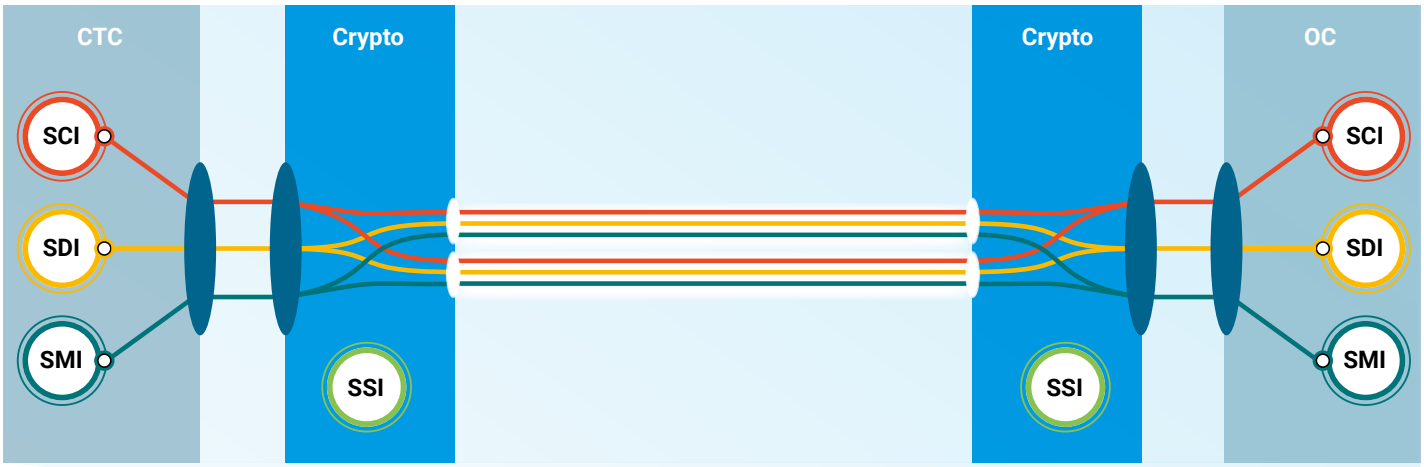
Context for EULYNX

One of the aims of the open EULYNX standard is to define interfaces to enable cross-border traffic. Not least among the objectives is harmonizing the signaling systems to promote further technical development and improve efficiency, especially in densely built-up areas that do not allow further large-scale rail network expansion.

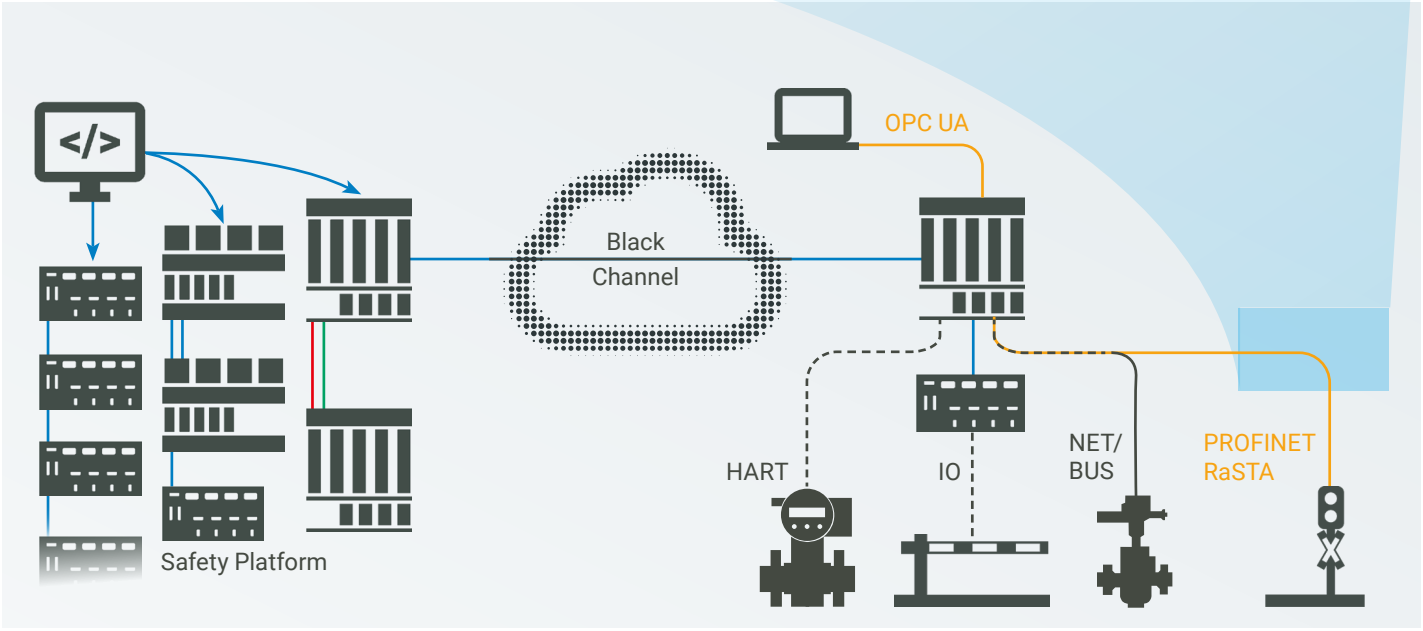
RaSTA provides a secure basis for **EULYNX** and is thus an essential building block for future rail projects (such as ERTMS/ETCS).

RaSTA is available for **HIMax** and **HIMatrix.** With **SILworX**, it can be tailored to your individual needs.

HIMA offers a wide range of integration options. In addition to standard bus systems and networks (including PROFINET/PROFIsafe and OPC UA), RaSTA is now also supported. OPC UA is used for data transfer to higher levels and for supplementing EULYNX.



SCI: Standard Communication Interface
SDI: Standard Diagnostic Interface
SMI: Standard Maintenance Interface
SSI: Standard Security Interface
RaSTA
OPC UA



SafeEthernet
Systembus
Classic communication
IO-based communication
Future-oriented communication

As a leading supplier of safety-related systems in the rail sector and process industry, HIMA is setting yet another milestone with RaSTA to facilitate independent open integration – and to empower you to implement the best possible individual solution.