

Fast Status and Failure Analysis

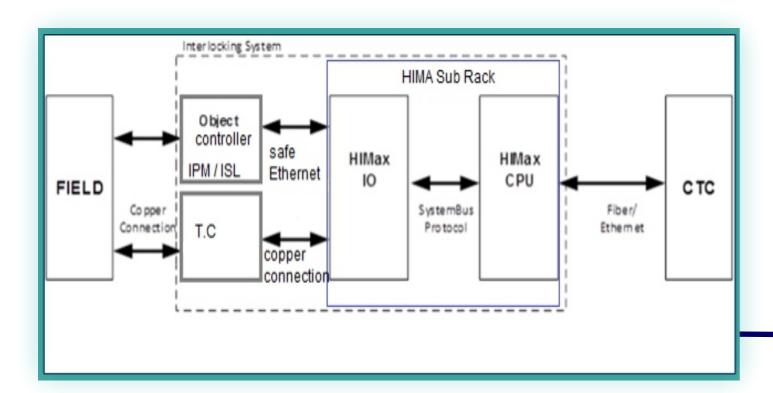
- Detailed information via LEDs
- Operating status: Run/Stop/Init
- Redundancy indication: red
- System bus status: Sys Bus
- Channel fault
- Differentiation between internal faults and field faults

Electronic Hardware

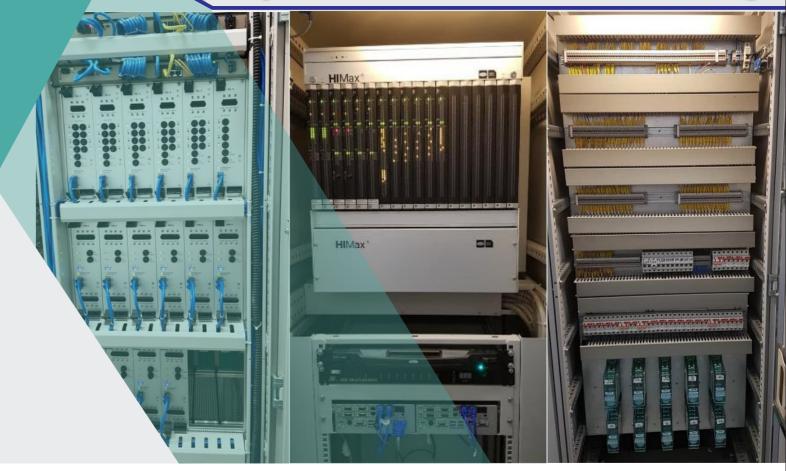
- Central Processor Module (CPU)
- Input Modules

- Object Controllers
- Operator Interface Unit)VDU)

• Output Modules



Rajman Kabir- Electronic Interlocking



• SIL 4 Certified Electronic Interlocking

• The EI System is SIL4 certified Controller with Local HMI on the EI Cabinet.

- Adaptable Interfaces with different Field Equipment
- Secure Communication
- Cyber Security Certification
- SIL 4 Certified System

- Scalable redundancy and NONSTOP operation
- Flexible
- Highly Available
- Evolution...Cutting Edge Technology



HIMA STANDARDS

No.	Standard #	Rilway Application
1	EN 50126: 1999	RAMS, SIL4
2	EN 50129: 2003	Communication, signaling and processing systems - Safety related electronic systems for signaling, SIL4
3	EN 50128: 2001	Communication, signalling and processing systems - Software for railway control and protection systems, SIL4
4	EN 50159: 2010	Safety-related communication in transmission systems
5	EN 50122-1: 1997	Fixed installations - Electrical safety, earthing and the return circuit - Part 1: Protective provisions against electric shock
6	EN 50124-1: 2001	Insulation coordination - Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment
7	EN 50125-3: 2003	Environmental conditions for equipment
8	EN 50121-4: 2006	EMC
9	EN61131-2:2007	Pollution degree II Protection class III

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Object Controllers

- The IPM is a railway safety technology control card for point machines
- of types of Siemens, Voestalpine and ...
- The IPM has a SIL4 safety assessment
- The ISL signal interface card forms the connection between the interlocking system and the signal lamps
- The interface card ISL 4 (4 lamps controller) and ISL 8 (8 lamps controller) has a SIL4 safety assessment





HIMA Hardware Specifications

- > Most powerful safety platform ever invented
- ➤ Replace module without disturbing I/O or power wiring
- ➤ Up to 20 COM modules per system
- ➤ 12,800 Inputs & Outputs per system
- ➤ Proof tests according to IEC 61508 and IEC 61511

