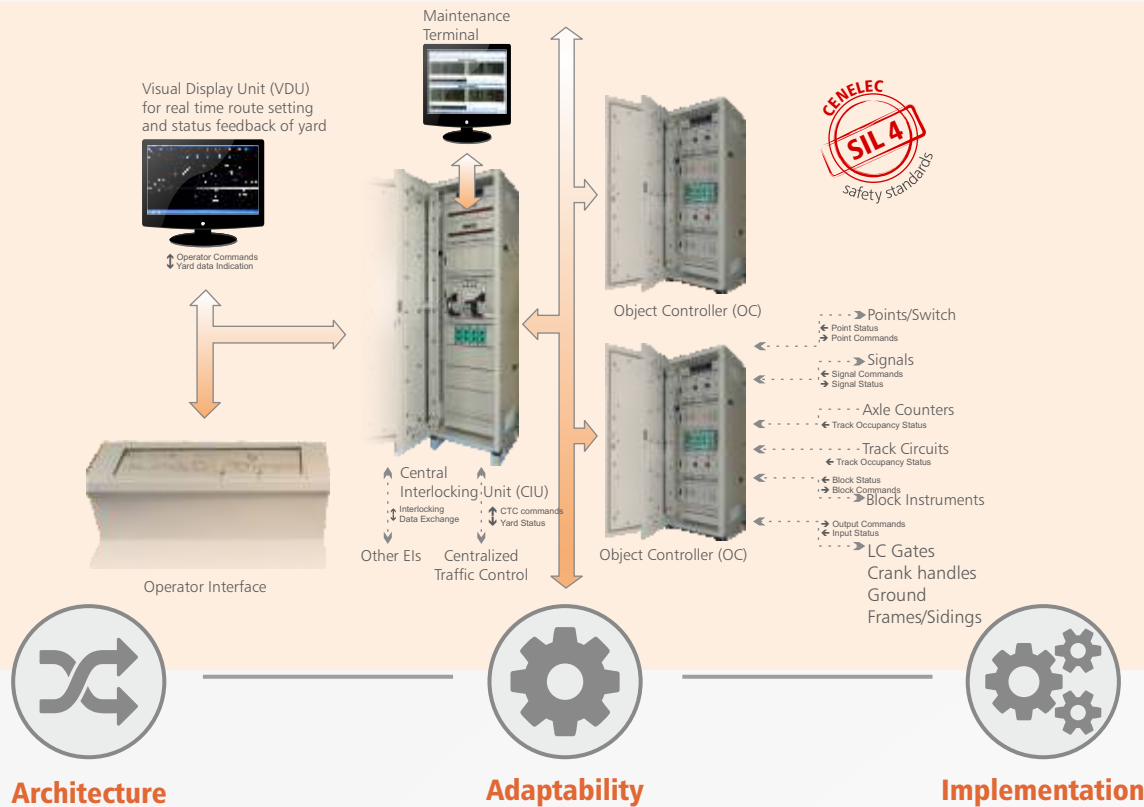# Electronic Interlocking System
for Signaling

Medha's Electronic Interlocking System is a modular, fail safe and configurable signaling system which meets CENELEC SIL4 safety standards.

System has large vital I/Os capacity and can be installed on a small or large station as a centralized or distributed installation with option to have centralized control to control multiple stations in a line section.

Vital OFC communication between vital sub-systems can cover a range of upto 120 km, without needing repeaters.

Medha's signaling system can interface with other systems such as ATP, CTC and other station equipment such as axle counters, data loggers etc.

Maintenance Terminal

Visual Display Unit (VDU) for real time route setting and status feedback of yard

Operator Commands
Yard data Indication

CENELEC SIL 4 safety standards

Object Controller (OC)

- Points/Switch
  - Point Status
  - Point Commands
- Signals
  - Signal Commands
  - Signal Status
- Axle Counters
  - Track Occupancy Status
- Track Circuits
  - Track Occupancy Status
- Block Status
- Block Commands
- Block Instruments
- Output Commands
- Input Status
- LC Gates
  Crank handles
  Ground
  Frames/Sidings

Central Interlocking Unit (CIU)
Interlocking Data Exchange
CTC commands Yard Status

Other EIs   Centralized Traffic Control

Object Controller (OC)

Operator Interface

Architecture

2oo2 architecture with 100% hot standby and automatic changeover

Includes all interlocking features such as route setting, route release, point operation, track occupancy monitoring, overlap protection, crank handle operation, level crossing gate operation, block working etc.

Fixed and faster response time for all operations, irrespective of station size or complexity

Adaptability

Modular and highly flexible system for easy adaptation to different types of station lay-outs, configurations and signaling norms

Single system capable of controlling yards upto 800 routes

Even bigger yards can be controlled by cascading more interlocking units

Modular architecture offers easy scalability and faster upgrades

Implementation

Option to select between Centralized or Distributed system layout to suit yard conditions

Redundant, optical fibre communication between CIU and OCs

Short commissioning time

No maintenance requirements

MEI 634 - a modular Interlocking system which can handle from 64 to 2200 vital I/Os. Can be installed as wayside equipment in the yard or for bigger system in the Station Equipment Room.

- Low initial investment even with different station sizes

- Modular design for ease of maintenance and expansion

- Improved safety and efficiency of railway network with system capability to handle heavy traffic

- Customer friendly desk type panel processor or PC based Graphical User Interface

- Online fault and event logging with troubleshooting guidance through maintenance terminal and remote monitoring

- Technical training, offline and online after sales support and other user friendly, service support packages

- Interlocking based on Boolean logic leading to faster design, verification and easier alteration

Features

Communication and Interfaces

The communication between all the sub-systems on redundant OFC channels for ensuring high availability even in harsh railway environment

Provision for interfacing with any new sub-stystem with open protocol interface

Safety Features

Vital processing by safety proven microcontrollers microcontrollers

2oo2 (two-out-of-two) architecture with full redundancy

Primary and secondary negation of faults

Additional features/capabilities

Direct Lamp driving

Direct Input reading

OC (object controller) placement near point of control in case of distributed functions

Extensive Fault Diagnostics and Data analysis

Each and every fault is identified and indicated to the maintainer, along with the suggested corrective action

Networking of Maintenance Terminals

Counter Box
to record emergency
cancellations done manually

Yard Signaling Control Room
(at station)

Simulator Panel for
Route Setting
(lab model for testing)

Lightning Arrester
ESE Type