Communication and components overview

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The described architecture is one of the several possible within the eSI concept, offering the simplest though complete functionality.

All-in-one communication gateway (COM600)

COM600, the station automation device of ABB, is an all-in-one communication gateway, automation platform and user interface solution for utility and industrial distribution substations. As a user interface solution, COM600 accommodates web technology-based functionalities providing access to substation devices and processes via a web browser based human machine interface (HMI).

Communication interface module MLink

The communication interface module MLink serves for the serial gateway interface to higher level systems which communicates through the internal bus to all MControl modules.

MControl - Motor starter control unit

The MControl is a powerful and modular platform for communication, control, data processing and protection functions. The main control board is based on a microprocessor platform and includes memory for application and process data and a fast communication interface to MLink.

615 series protection and control

Packaged with the latest protection technology and featuring native support for the prevailing IEC 61850 substation communication standard, ABB’s 615 series protection and control IEDs are the clear choice for the protection and control of utility and industrial power systems. The in-depth implementation of the IEC 61850 substation communication standard in 615 series IEDs covers both vertical and horizontal communication, including GOOSE messaging and parameter setting according to IEC 61850-8-1. The 615 series is part of ABB’s Relion ® product family.

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Electrical System Integration (eSI) leverages and maximizes ABB’s portfolio from both low voltage (LV) and medium voltage (MV) power systems, providing a robust control monitoring system for our customers. eSI utilizes the most current and internationally recognized communication standards. The eSI solution is suited for applications in the oil and gas, petrochemical, mining, pharmaceutical and semiconductor industries.

Electrical System Integration eSI provides critical control communication through a non-intrusive and dedicated system between ECS (Electrical Control System) and DCS (Operation/Engineering) systems. This makes it more efficient to transfer only the required information such as diagnostic data or control data to the relevant systems.

Total accessibility eSI allows a miles plant, making it possible to access plant information remotely. Experts are not required to physically present to rectify and evaluate the condition of the equipment in the plant.

Higher process availability eSI allows the plant to monitor and control its full range of electrical and control systems. This helps to optimize the plant's availability and prevent unplanned downtime.

Enhanced operator safety Programmable alarms and the level of predictive actions are available to guide on-site plant operators to take correct actions. Maintenance can also be budgeted and planned according to the needs of the equipment.

Maintenance can be budgeted and planned according to the needs of the equipment, not only according to the time. With such flexibility, plant maintenance becomes organized and cost-effective. This is particularly effective for motors, which need special attention in maintenance.

Efficient engineering eSI maintains a single engineering tool, the Station Automation Builder 600 (SAB 600). This minimizes integration times between MV and LV devices using system integrators during the commissioning and start-up stage. The described architecture on next page is one of the several possible within the eSI concept, offering the simplest though complete functionality.

Streamlined communication solutions The modern Ethernet-based communication solution enables fast process communication using standardized equipment. The communication network can be remotely supervised and controlled, enabling a high uptime for the process as a whole. The data modeling for LV and MV equipment is according to the new IEC 61850 standard, which makes it possible to freely add new standard compliant devices with minimum additional engineering effort.