Advanced MicroGrid Optimization
AMIGO Mono Island

Software solution providing remote off-grids with coordinated management of distributed energy resources, storage systems, demand response units and local volt/var control


AMIGO M ISL key features

- Reliable remote off-grid control system
- Operates both in automatic and semi-automatic (decision support) modes
- Fulfills energy costs continuous optimization
- Provides demand response and Load Management
- Generates income from ancillary services
- Vendor-independent software

System overview

- The consumer and prosumer loads or distributed power generation and utility company's power generators controllers are metered, meter readings forming a dataflow.

- Multiple data flows are aggregated and transferred to the control level (AMIGO Edge). The aggregated values are stored in the system database allowing to provide analytical services.

- Based on stored data, the system provides operational (1 minute), short-term (1 day) and long-term (up to 1 year) load and renewables output forecasts

- To implement fuel and moto-hours economy and renewables output, the system automatically activates the economic optimization feature that manages distributed power generation, storage, load etc.

- To implement demand response service, the system receives information on the amount of load to be shed and distributes this amount optimally between consumers.

- When the set load limits are not met, the system sends additional load shedding commands.

Utility Island Infrastructure
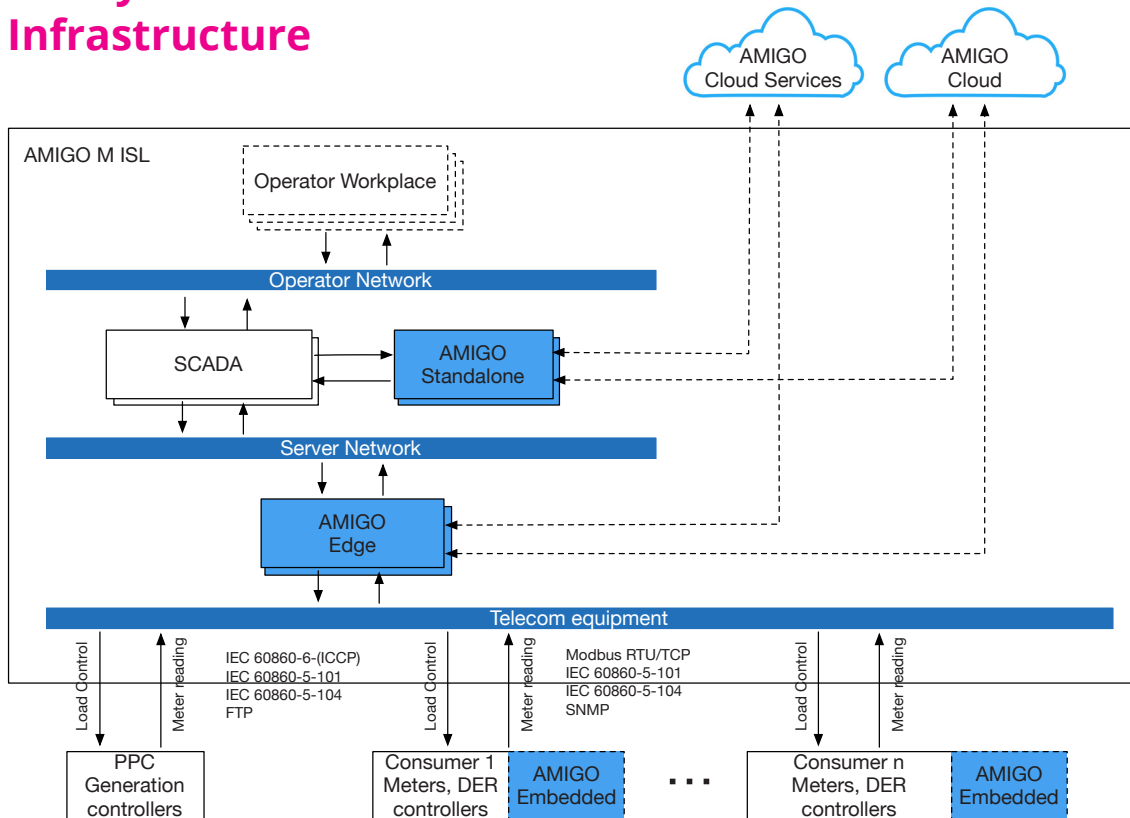
The system comprises four main levels:

- **AMIGO Embedded (optional)** – Local controllers providing monitoring and management of individual devices within the framework of a microgrid (field power generation, storages, controllable loads and others).

- **AMIGO Edge** - Provides redundant interfaces for load and power generation data collection, interaction of system agents: power generators controllers, consumers' 1– n meters, AMIGO Embedded, etc. AMIGO Edge supports multiple protocols.

- **SCADA (optional)** – Provides the necessary human-machine interface for loads and power generation management and telecontrol commands.

- **AMIGO Standalone (optional)** – Provides automatic or automated functioning of the following algorithms: deviation management, load shifting, peak shaving, demand response.

- **AMIGO Cloud Services (optional)** – Implemented to provide unlimited scalability and redundancy and minimize infrastructure costs.

- **AMIGO Cloud (optional)** – Utility Island management system installed on a RTSoft cloud system. AMIGO Standalone full or partial functionality available on Server hosted by S&T Smart Energy.

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