

secure control for smart energy and utilities

Lynx is an advanced multipurpose SCADA system that offers sector-specific functionalities

Atos Worldgrid's Lynx is a multipurpose product including specific advanced functionalities dedicated to energy and utilities sectors. It is already used in more than 150 sites around the world and is recognized as the exactly fitted solution for utility companies to have access to real-time information for improved surveillance and control. Its generic kernel covers the needs of a number of industrial processes in the sector, including power distribution and transmission networks, gas distribution and transportation networks, drinking water product plants, waste water treatment plants, and hydroelectric production plants.

Lynx allows utility companies to monitor and control networks devices and plants infrastructures' electromechanical equipment. The SCADA Lynx kernel fulfills all required functions and provides operators with user-friendly dialogs for displays and data configuration for network operation. Lynx is a reliable and safe control system that calls on powerful IT monitoring functions and métier applications, and thereby provides the most appropriate support to the operator. It offers innumerable functionalities, including:

- ▶ Highly secure and flexible access rights (per site, per function, per user, etc.).
- ▶ Easy navigation within windows, using zooming, panning, decluttering and drag & drop between windows.
- ▶ Individual or sequential commands, preprogrammed or programmed by the operator.
- ▶ Configurable lists and analog input recording with either graphical or tabular display.
- ▶ Post-mortem analysis of events based on recordings after an outage has occurred, allowing the operator to replay the sequence.
- ▶ A simulation mode that allows events to be simulated in order to evaluate operators' reactions in a training environment.
- ▶ Maintenance planning elaboration based on archived statistics extracted from the database and management of trouble tickets in case of outage.
- ▶ Tools to facilitate data migration from an existing control system.
- ▶ A trace function that allows up-stream and down-stream propagation on the network to be followed by circuit.

A highly customizable solution

While these generic applications and functions cover all utility segments, Lynx can also be customized to include specific functionalities for electricity, gas and water.

Electricity

For Electricity, Atos Worldgrid's Lynx system adds in the EMS (Energy Management System) and DMS (Distribution Management System) modules for real-time and security analysis as required for the introduction of a Smart Grid. Lynx also facilitates the management of global power generation and the individual control of hydropower plants. Specifically for electricity, Lynx offers:

- ▶ The dynamic coloring of feeders to easily identify energized and de-energized circuits, taking voltage levels and feeding transformers into account.
- ▶ Fault detection, location, isolation, and restoration which help reduce customer supply downtime and Outage Management with complete statistics reporting (SAIDI, SAIFI criteria).
- ▶ Loss minimization and load balancing for optimized energizing configuration of the grid.
- ▶ Load shedding on a frequency drop basis for the transmission network and on an overload basis at distribution level.
- ▶ Secure decision making process for operators using load-flow calculation, short-circuit analysis, state estimation, security analysis, etc.
- ▶ Production, hydraulic, and hydrological management (HMS - Hydropower Management System)
- ▶ Load forecast and renewable energy generation forecast.
- ▶ Volt-VAR control

The most appropriate, fully integrated system

Gas

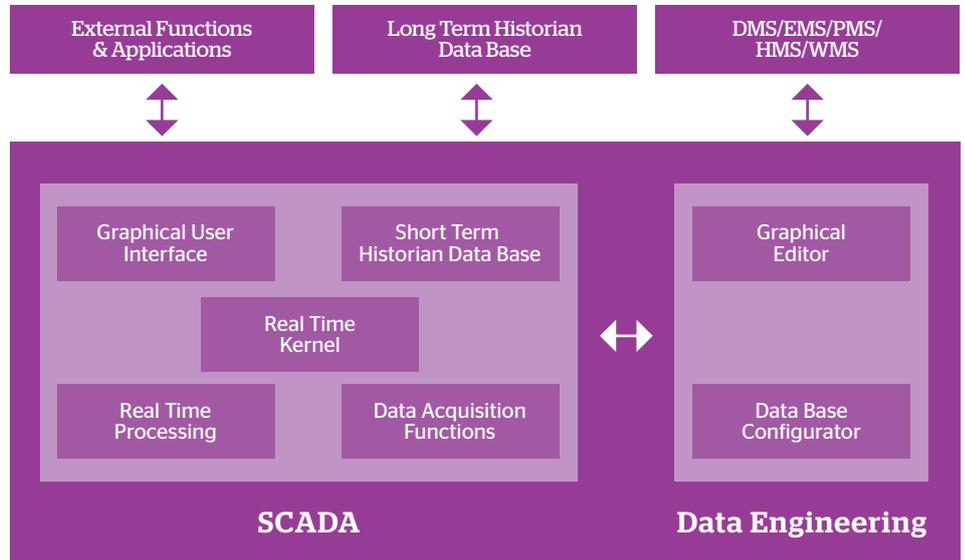
For Gas, Atos Worldgrid's Lynx adds in PMS (Pipeline Management System) calculation modules for the optimized management of pipelines. These modules are for display units using international and imperial systems. The calculation is the result of a simulation that compares planned, acquired and estimated values. Specifically for gas, Lynx offers:

- ▶ Line-pack calculation.
- ▶ "Pig tracking" with an estimation of arrival time based on velocity of gas.
- ▶ State reconstruction with estimation of pressure and flow at any point on the network, even where there is no acquired measure.
- ▶ A look-ahead function to anticipate gas behavior in the pipeline in the coming hours.
- ▶ Compressor management to adjust supply to meet demand.
- ▶ Economic optimization of compressor usage.
- ▶ Consumption forecast.

Water

For water, Atos Worldgrid's Lynx offers control of drinking water production and waste water treatment plants, and the management of reservoirs along the distribution network (WMS - Water Management System). An efficient warning system informs operators of incidents. Specifically for water, Lynx offers:

- ▶ Calculation of pressure in the network according to input flow.
- ▶ Automatic management of reservoirs and pumping stations taking water moves and electricity tariff constraints into account.
- ▶ Automatic management of storm water retention facilities.
- ▶ Consumption forecast.



Why Atos Worldgrid?

Atos Worldgrid has more than 30 years' experience of systems integration specifically using the Lynx system in all utility sectors, all around the world. Atos Worldgrid's Lynx is exceptionally easy to use and easy to customize to fit any specific environment, as a result it can be implemented at a site extremely quickly. Lynx features a library of communication protocols, process objects, and schematic graphics that facilitate the rapid set up and customization of the system and enable to show utilities exactly what the system could do for them. The varieties of applications and functionalities that can be added to Lynx make it the ideal system to address any project, no matter how large or small. And because it is priced on a modular basis, utilities pay only for the size and the functional scope of his system: number of input and output points being managed; the number of functions implemented, number of servers and workstations, etc.

In addition to our long experience in the utility sector, our professionals not only know the Lynx software extremely well, but are also expert system integrators, skilled at integrating the Lynx SCADA system with other IT components, such as Customer Relationship Management (CRM) systems or Geographic Information Systems (GISs) at the customer site. In today's connected world, these systems need to be able to share data with the SCADA system and by integrating all IT components, information only need to be entered once, increasing efficiency and reducing the risk of errors. With Lynx, utilities can be convinced that they have the most appropriate, fully integrated system to address their specific requirements, now and for the future.

Lynx is just one component of Atos Worldgrid's comprehensive portfolio of Smart Grid solutions including Smart Metering and Demand Side Management systems.

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