



LYNX CCL

Local Remote Control for substations

Introduction

Applications developed by GILLAM-FEI in the field of remote control have first-rated competitive advantages, resulting from more than thirty years of developments.

The LYNX-Local Remote Control product is a software environment performing the supervision and control of the station's devices. LYNX-Local Remote Control allows information acquisition and processing as well as data archiving. Used hardware and software configurations allow to meet the most stringent requirements in terms of reliability and user interface.



These quality criteria allow to implement the system in the most hostile environments, on any means of transmission, with an exceptional usability. The LYNX-Local Remote Control software performs the whole process of local management of the station, the portion or one device, allowing to meet all the needs of electricity distribution networks managers.

Openess and modularity

- Object Oriented Technology (circuit breakers, transformers, relays, valves...)
- Possibility to manage several hundred thousands of objects/points
- Modular application / possibility to upgrade a release to a new one
- Interoperability with other relational database (Oracle, ...)
- Possibility to manage and import existing database
- Recovery of map files (in a DXF format) from Autocad
- Interface with market software modules (PRAO, software for network planning, Geographic Information System)
- WEB Interface Module with secured access to any SCADA/DMS function
- API's tools available for connecting Lynx to other application/programs
- Remote maintenance possibility



Remote control, support to the control

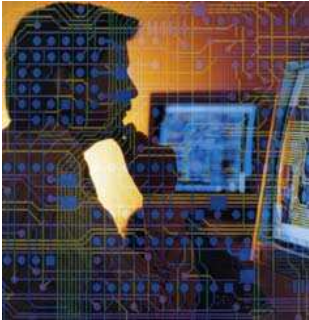
- **Users access rights** : the different modules as well as the multi-tasks have a high secured access.
- **Intuitive interface** : the drop-down menus of the banner call the main functions. A customized pop-up by type of object allows the actions.
- **Standard Lists** : All lists allow sorting, printing and export to Windows softwares. The content of these lists is configurable. Among these ones: Log book, black box, alarms, objects, stations, ...
- **User lists** : The software allows the operator to create its own user lists.
- **Analog input recording** : The AI are recorded and can be displayed either graphically or tabular.
- **Analog input real time display** : the AI can be displayed in real time in various formats : value, vu-meter, graph-bars, graphic or animated objects.
- **Alarms management** : The setting off the alarm starts up a buzzer, blinking and colours the concerned object in the drawing, increments the call button of the alarms list, logs the log book and the concerned lists with a 1/1000 seconds timestamping.
- **Navigation** : Very complete functions allow to navigate in the pictures : navigator, progressive zoom, call button, ...

Display available in LYNX-SubStation





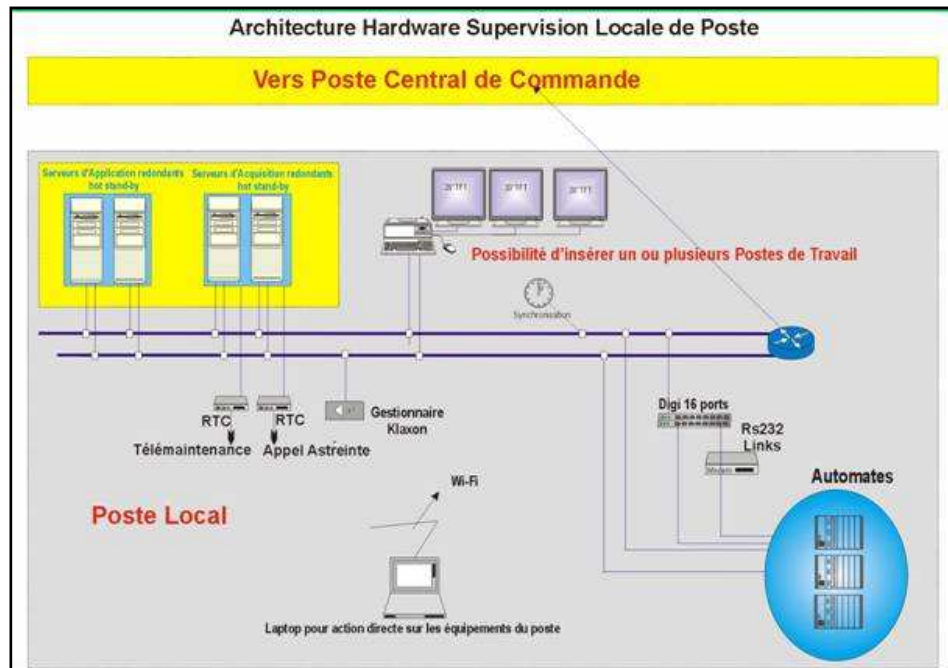
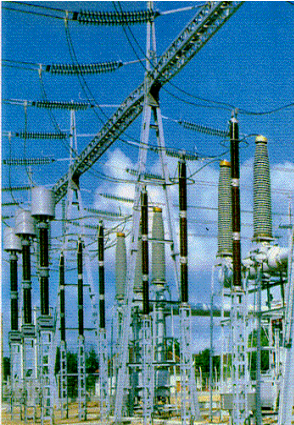
Progressive Hardware Architecture



- Client—Server Architecture
- UNIX/LINUX operating system
- Hardware from state of the art manufacturers (HP, Dell) : servers, workstations, laptops, laser printers, dot-matrix printers
- Relational database used: POSTGRESQL (without any associated licence cost)
- Data transfer through ODBC links between LYNX and Office standard applications
- Multi-screen operator stations
- Redundant acquisition and application servers (hot stand-by mode), Archiving server
- Redundant LAN Ethernet network
- On the field laptops for maintenance crew
- Remote operator workplace
- Interface with other remote control systems
- External synchronisation (GPS, DCF77, ...) Standard design possibilities
- Possibility of managing multiple standard/proprietary protocols
- Complete solution
- Open and modular application
- Easy interfacing with existing data
- Upgradable hardware architecture



Hardware Architecture Available for LYNX CCL



Standard / Proprietary Protocols Drivers Available

- Standard protocol drivers : ISO/IEC 60870-5-1, ISO/IEC 60870-5-3, ISO/IEC 60870-5-4, DNP 3.0, Modbus, HNZ PA4, PA20, JBUS time stamped or not, S-BUS, SNMP, TCP/IP, ...
- IEC 61850 Interface
- RTU supplier protocol drivers : TELEGYR (TG709, TG800, TG809), SIEMENS, ABB, SAIA
- Exchanges between control centres : ICCP Tase 2 and TCP/IP



Credentials in Local Remote Control Systems

Installation of a local Control-Command System for the HV/MV SubStation (using Digital Technology) of Chartres South

The project « Chartres South » is deployed at present in the neighbouring areas of the RTE station of Chaunay, along the Chartres bypass. RSEIP has decided to build a 225kV/15kV electrical transforming substation. This project realizes three main functions:

- Connection site with the transmission network managed on the whole territory by RTE (Réseau de Transport d'Electricité—Electricity Transport Network), it allows to lower the voltage for a use of the electricity in distribution (15 or 20 000 Volts).
- It distributes the energy on several « feeders » to transport the power to consumption areas.
- It realizes the protection of the network and third parties, by rapid elimination of possible faults (short-circuits), and prevents the propagation of these faults upstream and the perturbation of the transmission network.

This type of installation is the most sensitive part of the network, due to its technicality (numerous automatic controls) and the impact of a possible failure (several thousands of clients can be de-energised).

The RSEIPC has 4 main substations : Luisant, Mainvilliers, Gellainville and Phélibon (Courville-sur-Eure). The specificity of « Chartres South » shall be to be fully designed in digital technology for its control, and that it will be supplied in 225 000 volts instead of 90 000 as the other substations of the department.

Supply in 225 000 V from the RTE station of « Chaunay » (located on the district of Luisant) shall be performed through two underground cables of great capacity, that will emerge in the district of « Chartres South » to connect to an overhead grid.

The LYNX application consists in the design, supply and installation of the Local Supervision Station of the digital station. The system architecture is based on a multi-screens fixed server in Master/Slave mode which is interfaced in IEC 104 with the PACIS network of AREVA. The LYNX local control command has the specificity of behaving as the slave of the main regional control center the whole network in case of failure of the latter.

SCADA TREATMENTS

- SCADA treatments
- Trouble analysis
- Archiving
- Dynamic coloring (voltage follow-up)
- Detection of loops in the MV network
- Edition of events sequences
- Power calculations for each main substation + recording + Pmax

Other credentials in SCADA Local Remote Control

- SCADA installation of two Local Remote Control systems within a Schneider Electric PCCN (numerical substation) through Modbus protocol for West Colmar Vialis.
- Installation of one Local Remote Control system in the Boisy PCCN (numerical substation) at the Services Electricité de Lausanne (SEL) with Siemens devices through IEC 61850 protocol.