

## *Customer Success Story*



# *Hardened*

*Ethernet switches  
serving the environment*



# Hardened Ethernet switches serving the environment

Provided by:



**MODELEC**  
Data-Industrie

Industriële Datacommunicatie

*The Lynx range of WESTERMO Ethernet switches has been selected to manage the monitoring, control and supervision data of the Seine Grésillons SIAAP (Paris conurbation inter-departmental sanitation agency) plant in Yvelines, to the west of Paris. This is a wastewater treatment plant inaugurated in February 2007 capable of operating with a small number of personnel. The WESTERMO switches have made the difference, thanks to their performance in severe environments, their reliability and their recovery time of less than 20 ms.*

The Seine Grésillons treatment plant is one of the most modern in the world. In the event of an alarm, the technicians can connect locally at any point of the network by wire or WiFi link to the same production management interface to obtain an initial diagnosis. The entire plant is managed by a redundant ring Ethernet network. All production data are fully archived and stored in real time.

At weekends the plant operates with on-call personnel only.

The Seine Grésillons treats effluents from 18 municipalities in Yvelines and Val d'Oise, covering a population of more than 300,000, using the most advanced physicochemical and biological processes. Lead contractor for plant construction was STERAU, which selected ETDE for the electricity, automatic control and supervision work packages. The first construction phase was completed in October 2006, providing a treatment capacity of 1.16 m<sup>3</sup>/sec, or 100,000 m<sup>3</sup> per day. Capacity will be increased to 300,000 m<sup>3</sup>/d in 2013.



One of the technologies employed is attached growth, in which effluents are treated by physicochemical lamellar settling followed by biological treatment in three biofiltration stages. The modularity of the biofiltration provides reliability and flexibility of operation, thus optimising reagent use.

The resulting sludges are dried, substantially reducing their volume. The plant does not emit any odour: all the steps in the process are contained hermetically, and the air is fully treated before being released odour-free.

Water treatment is among the most demanding processes. It requires real-time monitoring of a very large number of equipment units. The first part of the plant already involves over 4500 physical inputs/outputs and 25,000 variables, all handled on industrial Ethernet networks from the control room to the inputs/outputs. All plant management operations are controlled through a single production management interface, available both in the control room and to on-site operators. Procedures are guided and taken into account in real time over the entire operating system, making the reliability of the switches used of prime importance.

“At the time of the call for tenders in 2002 the hardware and automatic control systems were not specified, so we examined the best solutions on the market. For the switches we needed proven, highly-resistant units with short recovery times. After evaluation, we selected Westermo”, we were told by Louis Claire, ETDE Automatic Control and Supervision project manager. 18 Westermo Lynx redundant-ring switches were chosen. This range has the switch with the shortest recovery time on

## Application

the market. The switches manage all the monitoring, control and supervision data of the plant and are linked directly to the six controllers. Their reliability and their rapid reconfiguration are crucial to ensuring optimum operation of the plant.

The Westermo Lynx Ethernet switch family is certified for all demanding environments, including industrial, process, marine, railway, military (M12 connector) and electricity substation, for all network topologies and management modes: simple, redundant ring with recovery time less than 20 ms, SNMP, IGMP, VLAN.



The Lynx Ethernet switch range includes a total of more than 90 products with unrivalled technical characteristics: redundant 19-60VDC power supply, working temperature from  $-40$  to  $+70$  °C, IP40 protection, 150-metre long cable specification (Cat5e), reconfiguration in 20 ms after ring break (recovery), support for up to 200 switches per ring, management of four priority queues, auto-negotiation for each port, watch-dog; all implemented in a very robust, reliable metal case.

Determinism provided by layer 2 and 3 priority support enables use for real-time or voice over IP applications when latency times are critical and must be guaranteed. It is the only product on the market to feature such specifications at an extremely competitive price given its performance.



## A product range to meet every demand

Westermo provides a full range of data communication solutions for such demanding applications as railways, aeronautics, defence, water treatment, substation automation, roads and tunnels. The staff at Westermo can provide the highest levels of service and technical support to help our customers to choose, configure and install the best solution for each specific application requirement. Our knowledge goes far beyond our own product range; we have a unique competence regarding your environment whether it is on a train, in an aeroplane, on the seabed or in a substation. To ensure a close relationship with the customer, Westermo has a local presence in more than 35 countries. The Westermo product line includes more than one thousand different types and versions of our modems, switches, routers, time servers and converters.

### Lynx Series – Compact high performance switch

The Lynx is a family of switches with different function levels and approvals. The switch can be configured with either 100 Mbit or Gbit transceivers offering transmission ranges up to 120 km. The Lynx is managed with four priority queues and features like Head of Line to blocking prevention ensure that the data is deterministic. The 400 and 1400 models are also equipped with the FRNT and RSTP redundancy protocol.

- ⌘ Real time Ethernet
- ⌘ Priority queues and priority scheduling
- ⌘ FRNT/RSTP redundancy protocol
- ⌘ Extensive line protection
- ⌘ Wide temperature range (-40°C to +70°C)
- ⌘ Galvanic isolation and transient protection

