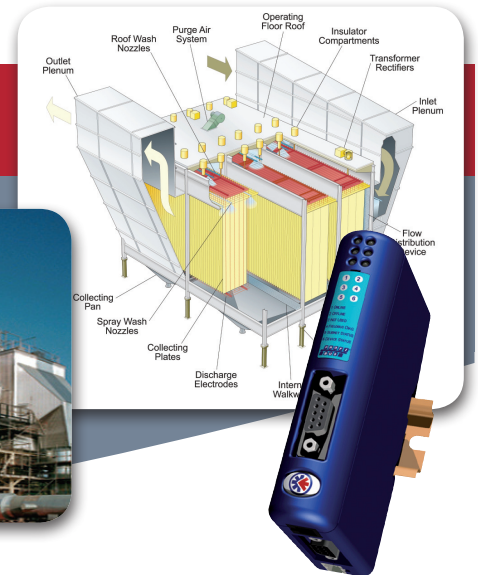


## CASE STUDY: POLLUTION CONTROL SYSTEMS

**Solution:** Communication gateways  
**Country:** India  
**Company:** FLSmidth  
**Summary:** Anybus<sup>®</sup> Communicator enables communication between FLSmidth's air pollution control equipment and Profibus/Ethernet/IP.



### The effects

- ✓ Compatibility with several networks.
- ✓ Re-usable for future network connections.
- ✓ Lowered costs.

## Easy integration of remote monitoring system for FLSmidth

FLSmidth, a world leader in Electrostatic Precipitator (ESP) technology, develops advanced pollution control systems in order to comply with the stringent industrial standards. Particle removal efficiency is controlled in real time by sophisticated micro processor based voltage controls. FLSmidth decided to integrate HMS's communication gateways to inform their users of the status of the air pollution control equipment.

### How FLSmidth technology works

The electrical field collects the dust on collecting plates. Automatic plate-rapping systems and hopper-evacuation systems remove the collected particulate matter while on line, theoretically allowing ESPs to stay in operation for years at a time.

In the steel industry, where HMS equipment has been implemented, air pollution control equipment must be able to collect a large variety of pollutants. Because ESPs can collect very fine, dry particles, abrasive and corrosive particles, it is often a preferred solution in this industry. ESPs have to cope with two phenomena which decrease the efficiency. First is the spark effect: this is a short circuit between the plates inside the ESP. No dust collection is possible during this period. The second is the back corona effect: positive ions are produced in the dust layer and can be emitted back into the gas.

The ESP implemented by FLSmidth is a very high-tech solution. It integrates the newest COROMAX<sup>™</sup> pulse power supply system which is the most advanced high voltage system on the market. COROMAX<sup>™</sup> differs from traditional DC power systems by offering unique control on electrical particles which are charged during 75 microsecond impulsions at 140 kV, while the mean voltage is 40kV. Currents can also be controlled. By applying very short electrical pulses, COROMAX<sup>™</sup> enables the reduction of sparks. Because there is no current, the back corona effect is also reduced.

*“This implementation is a success. We can use the HMS solutions for our future projects.”*

Deepa Kirubakaran, Technical Manager for FLSmidth in India

Sophisticated, proprietary microprocessor high voltage controls respond quickly to process variations, or upset conditions. This control system enables fast response controls and it ensures outlet emissions remain low even under challenging process conditions. Electrostatic Precipitator Performance is capable of achieving less than 5mg/Nm<sup>3</sup> emission.

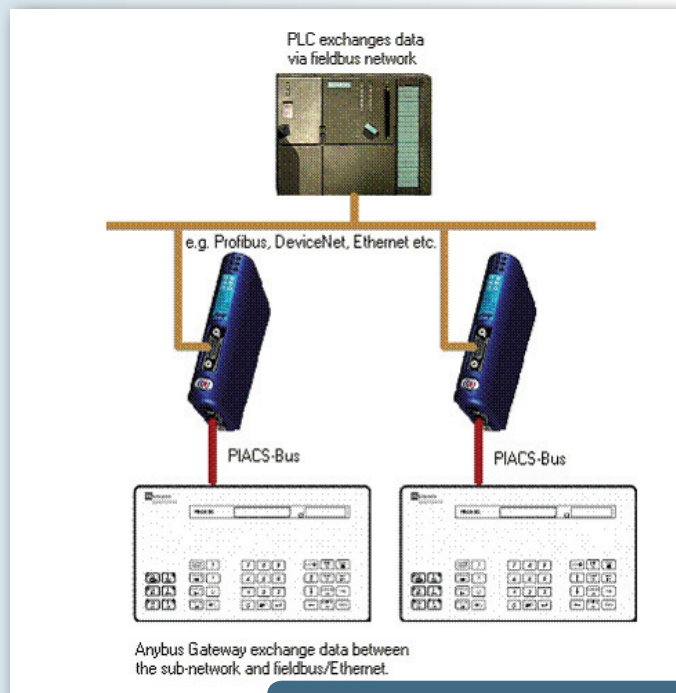
By applying pulse systems, existing ESPs can be improved without physical enlargement while reducing the power consumption at the same time. New ESPs can be installed with smaller dimensions than ESPs with traditional DC power supplies.

### Real-time monitoring system

“For such an advanced control system, it is critical to inform the final user. This is what HMS products do”, explains Deepa Kirubakaran, for FLSmidth in India. HMS products enable the communication of all information concerning the equipment status and the real time emission control system.

Deepa Kirubakaran adds: “We have chosen HMS, because we found a standard product which is very simple to integrate and very compact. The key issue is that with only one module, you can handle all the signals”. Products utilized were a Java version of Serial to Profibus Gateway and a Java version of Serial to Modbus RTU Gateway.

HMS Industrial Networks is distributed in India by UL Electrodevices Pvt. which is based in Pune. Umesh Sakle, who brought the technical support, explains: this gateway, Anybus<sup>®</sup> Communicator, can connect almost any automation device with a serial communication interface to fieldbus and industrial Ethernet



*HMS's gateways enables communication between the FLSmidth controller and the end-user interface.*

networks. The Communicator performs an intelligent conversion between the serial protocol of the automation device and the chosen industrial network. It is compatible with all leading PLC manufacturers and almost no programming is required! Another great feature with the Communicator is the Save/Load function. Once you have completed your serial configuration for one network, you can easily re-use the configuration for another Communicator supporting a different industrial network.

“This implementation is a success. We can use the HMS solutions for our future projects”, concludes Deepa Kirubakaran.

Learn more on [www.anybus.com](http://www.anybus.com) or [www.flsmidth.com](http://www.flsmidth.com)



### Anybus Communicator Gateways

Anybus Communicator gateway family can connect almost any automation device with a serial communication interface to fieldbus and industrial Ethernet networks. The Communicator performs an intelligent conversion between the serial protocol of the automation device and the chosen industrial network.

HMS Industrial Networks develops and manufactures state-of-the-art hardware and software for industrial communication. Products are marketed within the categories Embedded Solutions, Gateways and Remote Management. HMS was founded in 1988, is headquartered in Halmstad, Sweden and is listed on the NASDAQ OMX Nordic Exchange in Stockholm, ISIN-code: SE0002136242.

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