

## Solutions for Research Facilities

# Ilmenau Technical University: Innovative Building Automation for Science

### The requirement – innovative building services management from a single source

With its extensive clean rooms, laboratories and installations, the ZMN centre for micro and nanotechnologies of the TU Ilmenau offers the ideal conditions for successful research in cooperation with industry and fundamental research in micro and nanotechnology. The processes and experiments in the ZMN are normally carried out over long periods of time, and reliable

power distribution is therefore an absolute necessity – as well as the exact air conditioning of the clean rooms and laboratories. A failure of any of these systems that is unnoticed can very quickly cause more serious problems in the laboratory area. Integration is therefore the key requirement to ensure optimum availability and flexibility at the same time.

In other words, the networking of all components and the provision of a central monitoring and control system. Moeller offers single sourced and fully developed building services management systems that are modular and scalable. These systems not only offer reliable and precise power distribution but also central and convenient access round the clock.



**The solution – intelligently networked power and building services management**

The entire electrical infrastructure of the ZMN building complex at Ilmenau was created with Moeller solutions – the components and systems at all levels are single sourced, from the low-voltage power distribution to the control system. A standard networked system enables all the air conditioning systems, laboratories, office and conference rooms, as well as the low voltage power distribution, to be monitored, controlled and regulated. The entire system was designed and implemented by Moeller Systems in cooperation with the Erfurt-based company Cegelec.

**The details – safety and transparency at all levels**

Due to the special power distribution and building services management requirements involved, more than 7,000 data points were implemented and networked for HVAC and process control and a further 1,500 data points



Control panels for heating, ventilation, air conditioning with integrated TFT touch panel operation

for the power supply, lighting, shutter control and blinds.

A powerful software was required to handle all the data involved, from the system level to the management system, in order to monitor and control this sophisticated technology. This collocation, distribution, control and visualization of data was handled by the iFIX SCADA software – a scalable Windows-based system with interfaces to the

electrical engineering, to the Control/DDC technology and to fire alarm systems. iFIX was developed by Intellution, a company that has worked in cooperation with Moeller for several years.

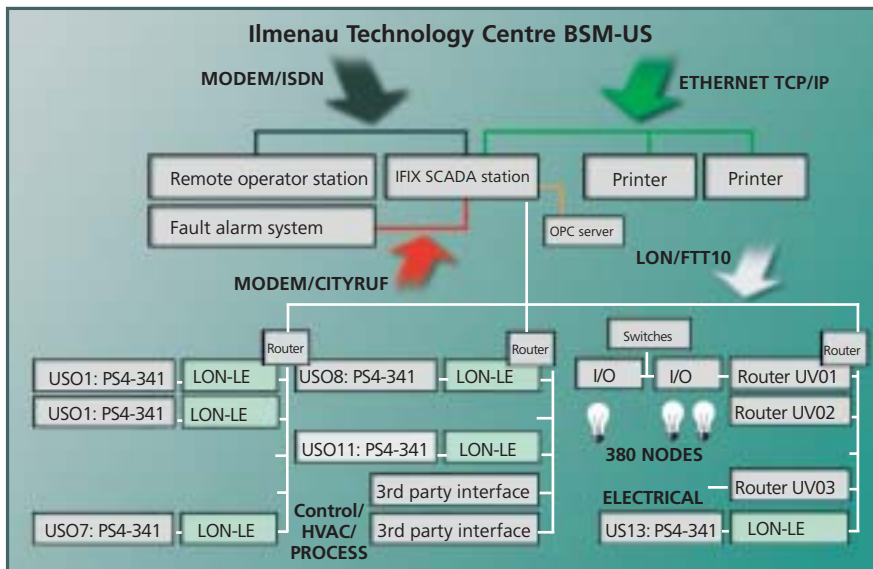
Within the scope of this cooperation and using iFIX as a basis, Moeller developed the comprehensive and open WinBC building services management system which is also used in the ZMN at the Ilmenau Technical University. This system provides central access to all building services related functions. The “central control technology” allows access to the areas of HVAC, carrier and process gas supply, high-purity water and waste water systems, safety management, lighting and shutter control, blinds, as well as a fault alarm system that uses the Cityruf paging system.

**The result – an optimum level of integration for trouble-free research**

The entire building services management system was integrated and implemented virtually from a single source within a very short time, thanks to the cooperation of the partners involved. Despite the complexity of the system, an optimum level of reliability and availability could be achieved, combined with a high degree of transparency and ease of operation.

**The technology used**

- Low-voltage power distribution system
- Moeller DDC technology using the PS4-341-MM1
- iFIX software system
- LONWorks modules and integration
- Control panels with MV4 TFT touch panels



Complex building services management – integrated simply with Moeller technology

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