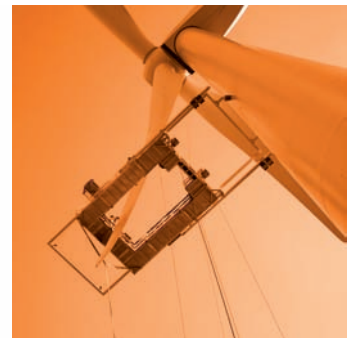
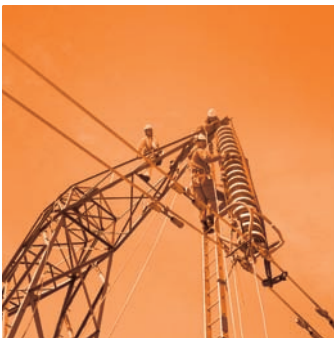


User Report



Reliable telecontrol at whatever distance –
UMUX in operation at Harz Energie GmbH & Co. KG





- Seamless substitution of a PCM system to UMUX
- Transfer of telecontrol data to VF telegraphy
- Multiplexer with analogue interfaces for two and four wire lines
- Hybrid data transfer via copper lines and fibre optics
- A one-stop solution for planning, installation and configuration

Introduction

At Harz Energie GmbH & Co. KG reliability, safety and customer orientation are top priorities. To achieve this objective, a fail-safe telecontrol network for supplying customers with gas, electricity and water is vital.

Harz Energie also uses a telecontrol connection between Goslar and Ilsenburg. As the previously-used PCM system was being phased out, Harz Energie modernised their transmission network with KEYMILE's Multi-Service Access multiplexer, UMUX. By taking such a step, this regional energy supplier found more than just a replacement for analogue technology, because UMUX provides substantial added value without additional investments.

The Task

To guarantee fail-safe supply of gas, water and electricity, energy supplier, Harz Energie GmbH & Co. KG has been using a PCM-30x system up to 2002. The measurement data from the stations were fed along the 30 channels of this analogue system to the main station and the control impulses back to the final control elements.

When a PCM path failed in 2002, Harz Energie was forced to take action: The PCM system had to be replaced!

Requirements on the new system came mostly from existing applications and existing lines: A multiplexer with analogue interfaces for the two and four-wire lines with hybrid technology, that apart from copper lines, also supports fibre optic lines.

A Solution was sought ...

Harz Energie were pleased with products from ke Kommunikations-Elektronik GmbH (in the meantime re-born as KEYMILE GmbH) and decided to get in touch with KEYMILE.

KEYMILE presented their products and suggested a solution for Harz Energie's problem focusing on Multiplexer UMUX.

UMUX provides Multi-Service solutions via a single node and can also function as a multiplexer at a 64 kbps level.

Apart from transmission interfaces for fibre optics and copper lines, the compact, sophisticated system provides a variety of data and voice interfaces – amongst others broadband DSL, Ethernet/IP and integrated SDH ADM functions.

As Harz Energie really needed to act quickly and UMUX seemed to provide a reliable answer, Harz Energie asked KEYMILE to draw up a quote and provide a rough blueprint.

Apart from the technical specifications, another condition was for the entire substitution of the PCM system to take place outside the heavy-usage periods in the autumn and winter months.

... UMUX is convincing!

A trial installation was carried out, where UMUX proved what it could do on the approx.

6 km long path between Goslar and Sudmerberg. Above all Harz Energie wanted to know if VF telegraphy was working with UMUX – otherwise this would have caused substantial further investments later on.

The four-week trial period convinced Harz Energie. UMUX fulfilled all the requirements completely and there were no obvious problems during the installation.

The KEYMILE system has a good price/performance ratio and the company can also provide a wide-range of support services, so Harz Energie chose UMUX.

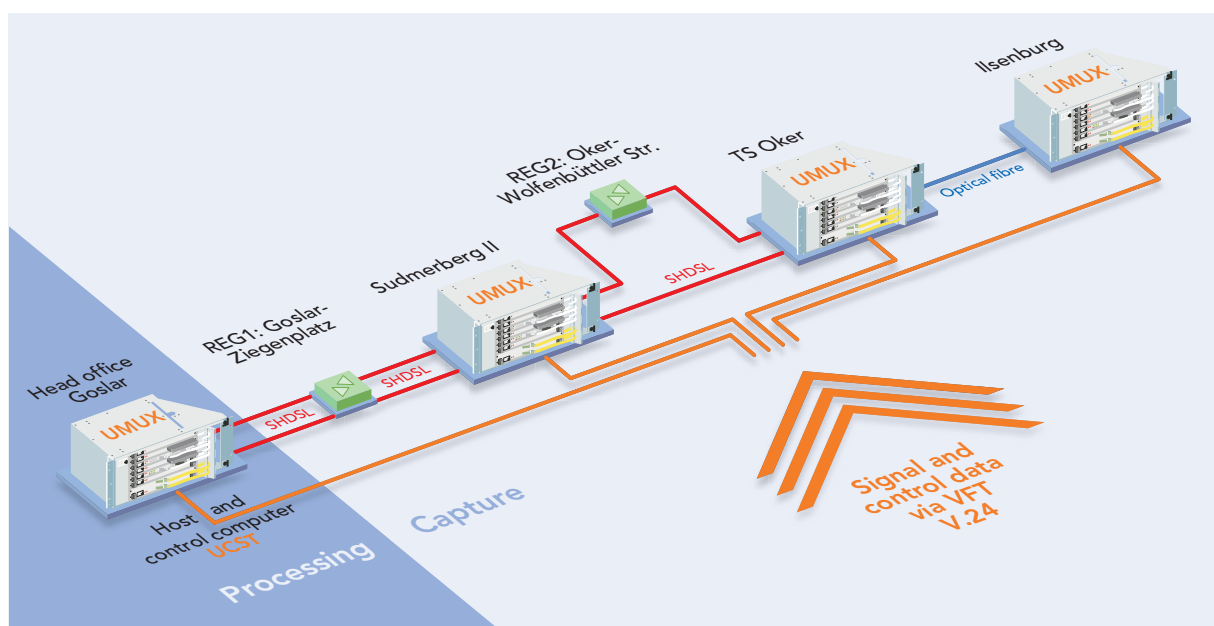
The actual installation of the system then took place during normal operation, parallel to the old PCM system.

It transpired that the 4,000 m and 8,200 m long copper telecommunications lines used for operation, showed a much higher level of attenuation than those used in the trial installation.

The installation of two repeaters solved the problem reliably and ensured smooth operation. The approx. 15 km long fibre-optic connection between the Oker substation and the gas receiving station at Ilsenburg went into operation without a hitch.

Despite the extra installation required, the UMUX system started operating regularly on time and has been running reliably and smoothly since then.

For safety reasons, the original plan was to run UMUX initially for a transition period, parallel to the PCM system. But then all of a sudden the PCM system failed and could not be re-activated because there were no spare parts. This meant that UMUX now had to bear the full load.



The network structure

Positive Experience

Engineer Werner Coordes, head of transmission technology at Harz Energie took stock after the positive experience with UMUX:

„To date there have been no problems with UMUX. Our decision to choose the KEYMILE system has proved to be spot on. Apart from reliability, it provides a good price/performance ratio and is substantially less expensive than the PCM system. KEYMILE can also offer us 24-hour service, seven days a week. This increases reliability, should there be a failure and saves us extra training courses for our personnel.

All in all KEYMILE did excellent work in such a short time. We are totally satisfied with the system“.

At the moment Harz Energie is only using some of the functions UMUX has to offer. But spare capacity means the company can react quickly to changing demands.

With its modular system and the network management system UCST/UNEM which is part of the package, UMUX is extremely flexible and can be expanded at low cost.

Glossary

ADM	Add&Drop Multiplexer
ATM	Asynchronous Transfer Mode
DSL	Digital Subscriber Line
IP	Internet Protocol
PCM	Puls Code Modulation
REG	Regenerator
SDH	Synchronous Digital Hierarchy
SHDSL	Single Pair High bit rate Digital Subscriber Line
TS	Transformer Station
UCST	UMUX Configuration System
UMUX	Universal Multiplexer
UNEM	UMUX Network Element Manager
VFT	Voice Frequency Telegraphy

Harz Energie GmbH & Co. KG

Energy supplier Harz Energie GmbH & Co. KG merged in 2001 from the Licht- und Kraftwerke Harz (Osterode), the Westharzer Kraftwerke GmbH (Oserode) and the Nordharzer Kraftwerke GmbH (Goslar).

Harz Energie is a member of the Thüga Group, the largest network of local and regional energy suppliers in Germany. The highly efficient, regional corporation provides 110,000 households and 10,200 companies, plants and public facilities with innovative, inexpensive solutions in supplying electricity, natural gas and water.

The network region includes a large part of the Harz, the Harzvorland and the Eichfeld and is situated in the German states of Lower Saxony, Saxony-Anhalt and Thuringia.

KEYMILE

KEYMILE, specialises in access solutions, already supplying leading products for Multi-Service Access with seamless migration to package convergence (ATM or IP) and Next-Generation Network architecture.

With headquarters in Vienna, Austria, KEYMILE has subsidiaries world wide and customers in over 100 countries.

For more information see www.keymile.com.

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