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Reference report

Ruhr-University Bochum

Smart cabling sets a precedent:

As a central service provider the computer centre of the Ruhr-University Bochum supports students, institutes and staff in all aspects of information technology. An increasing number of students, renovation measures and current developments in network technology constantly require a restructuring of the passive network structure. In order to tackle these upcoming expensive cabling projects in an easy and quick way, the tde - trans data elektronik GmbH from Dortmund developed a customized and patented trunk-patch-cable together with the Ruhr-University Bochum, which enables a sorted cabling in the data cabinet.

The Ruhr-University Bochum – human, cosmopolitan and powerful

Located in the middle of the Ruhr metropolitan region, the Ruhr-University Bochum employs more than 5600 members of staff in 20 faculties and ensures a high-quality education for more than 38,600 students from all over the world. All the major academic disciplines are united on one campus. Research and teaching are inextricably liked at the Ruhr-University with a special focus on the interdisciplinary nature of the various departments. As part of an ongoing campus reconstruc-

tion all buildings are fully modernized and adjusted to fit the current requirements. The aim is to provide an excellent study and research environment for students and scientists alike - also regarding the spatial perspective.

The data centre – at the service of research and teaching

The data centre of the Ruhr-University Bochum is a central facility of the University and its duties are set out in the statute. Not only does this include research and teaching in the field of information technology to develop a central IT competence, but also the provision of services in the information technology and the planning as well as the operation of the internal network connecting it to the external academic network and the internet. way, the computer centre also offers its own service centre as a main contact point. Students and staff can find help with questions regarding the services of the data centre and the IT on campus.

Restructuring of the campus network

There are more than 62,000 network ports on the entire campus of the Ruhr-University Bochum. Each workplace is equipped with up to six network connections. New Buildings and renovation measures often lead to a restructuring of the network. „The transformation of information and communication structures is nowhere more apparent than at a university, which advances technical developments in the field of information technology in a scientific way and practices it in everyday business operations", Norbert Schwarz says. As head of the university computer network at the Ruhr-University Bochum he is responsible for the passive infrastructure of the star-shaped campus network. According to Norbert Schwarz's estimates, there will be more buildings added to the campus, which are each going to be equipped with at least 10,000 connections.An immense cabling project, which brings along cer-
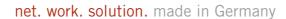
tain challenges: for example, data cabinets are very tightly fitted. 600 cables in one cabinet lead to space problems. Furthermore, the implementation of so many connections takes a long time thereby increasing expenses. The error rate of large cabling projects is also not to be underestimated: If technicians are busy with inserting plugs for hours plugs could be placed in the wrong location.

Easy, fast and orderly cabling

Norbert Schwarz wanted to have a patch cable management, which on the one hand reduces the space requirements in the server cabinets without restricting the cooling airflow. On the other hand, the solution should be easy to handle and form a decent picture after the implementation. For many years the Ruhr-University Bochum has been using cables from tde - trans data elektronik GmbH from Dortmund. „tde uses high-quality cables, which is important to us. Especially after having to replace about 3,000 cables from another manufacturer because they caused loose connections", Norbert Schwarz said. In numerous meetings with tde's experts the different optimization approaches were discussed and evaluated. Six patch cables are condensed in an overall cable jacket. A fan-out unit transfers the trunk sides in six whips with six RJ45 jacks mounted at their ends. The lengths of the whips are graded in such a manner that each patch cord exactly reaches the designated port. In order to achieve a reduction of the required space the cable material thickness was consistently reduced and the patch cables were grouped to one line. By adjusting and gradating the length of the whips it was possible to optimize the flexure and avoid inconvenient cable excess. The colour coded connectors form a consistent colour pattern after the installation. Thereby the laying work is three times faster than with single connection cables and plug errors are impossi-

ble. In this way, the final inspection is visualised, because if a connector has the wrong colour, it was obviously patched incorrectly. Using the tde trunk patch cables is also very time-saving. To patch a port with a conventional single wiring takes 60 seconds. With the tde trunk patch cables, the technician only needs 15 seconds for one plug in. „In addition, the cabling system causes a positive psychological side effect, because the result of the installation is neat and visually appealing. Thereby patching is a lot more fun compared to the traditional way when the cabinet's door can hardly be closed", Norbert Schwarz explains. During the installation all ports are already activated and connected to the respective electronic components. A timeconsuming additional patching becomes unnecessary. Every port is ready for use and can be activated based on software. It is common for many operators of computer centres to buy costs, the costs for electronics is no longer as relevant and are outweighed by the benefits of an immediate complete installation - once the wiring is done, the data cabinet stays closed. Another advantage: While conventional cabling is not auditable due to the fact that re-plugging a connection cable does not leave any traces in the system, software-based reconfiguration of the electronics can be tracked accurately. „The tde trunk-patch-cables offer special characteristics which make life easier. Besides the time and space saving aspect, the easy installation and the tactile quality of the cables convinced us. The trunk patch cable is a customized solution for us, but it may also be interesting for every user who has to deal with large volumes of cabling", Norbert Schwarz says.