

## Reference report

**tde - trans data elektronik GmbH wires Rheinbahn AG's new data centre****Structured cabling saves time and money**

Rheinbahn AG seized the opportunity of building a new data centre to set up a completely new cable system. It was supposed to be well thought through, structured and scalable right from the start. Rheinbahn found a suitable project partner in tde – trans data elektronik. Together the local transportation company and the network specialist installed tde's own tML cabling system with FO and TP modules. Rheinbahn operates the public transport in North Rhine-Westphalia's capital Düsseldorf, the district of Mettmann, the Rhine district of Neuss as well as in six further municipalities in the region. On weekdays, approximately 720,000 passengers are transported in 735 vehicles on 110 lines by roughly 2,900 employees. This makes Rheinbahn one of the largest employers in the region. Two data centres on different sites ensure that the busses, trams and city railways as well as the commercial IT processes operate smoothly. Since one of the locations is supposed to be moved in the medium run Rheinbahn decided to build a new data centre. Since early 2014 the construction of the new data centre has been completed. By the end of the year all preparations for the relocation of the server landscape will be finished so that it can gradually be moved from the previous location to the new building.

**The new data centre: an opportunity**

"Since we were presented with the unique opportunity of a 'new beginning' we wanted a clearly arranged cabling with defined structures. The new construction of the data centre presented us with the opportunity to prevent the disorder, which usually sneaks in, in advance. Of course, we didn't want to miss this chance," Marcel Lellau, head of the IT department at Rheinbahn, explains. Marcel Lellau knows what he is talking about: so far the racks in both data centres were manually wired within as well as between the individual systems. This resulted in cluttering. "Over the years, it led to downright uncontrolled growth," Hardy Klatt, network technician at Rheinbahn, adds. "It was often very time-consuming to change or trace a cable, especially because the labels of many cables had dissolved or were no longer legible."

**Step by step towards the perfect solution**

In the first planning step the IT team around Lellau determined the cabling of the racks. "We all agreed that free cabling would in the long run be too obscure and prone to errors and in the end would only mean more administrative effort," Lellau explains. After the IT experts at Rheinbahn had defined the quantity structure, they contacted different providers who were shortlisted as partners for the installation of a structured cabling solution. During the product presentations of the individual network experts the tML – tde Modular Link system convinced Rheinbahn due to the best price-performance ratio. "There were two further competitors, but after the presentation of the products we felt good about tde. The components are simply of better quality," Lellau explains the decision to choose tde. Also in comparison to the other competing products the tML system offered a higher packing density in one rack unit (RU).

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### FO and copper connectors in one

After tde had determined the exact quantity structure on site Rheinbahn ordered the network components. As general contractor tde planned and installed the passive network infrastructure for the new data centre together with Rheinbahn. In the eight racks of the first server row tML systems with FO and TP modules are used together. The FO/MPO module is fitted with 6x and 12x LC-duplex ports, the TP module with 6x RJ45 ports. Up to 96x LC duplex or 48x RJ45 ports can be fitted into one rack unit (RU).

The tML – tde Modular Link system designed in modules consists of the three main components module, trunk cable and module rack. "The pre-assembled and tested system components guarantee a plug-and-play installation within a very short time. FO and TP modules can be used together in a module rack with a very high packing density", André Engel, tde's CEO, explains the very own solution. The core of the system is the rear-mounted MPO and Telco cable, which can connect at least 6 ports with 10 GbE or GbE performance at once.

### Cabling with short path lengths

The tML system was installed within three days. Also, according to Lellau, the tde technicians perfectly handled the

problem that the cable inlet was somewhat too short in terms of the entire server cabinet. Rheinbahn is completely satisfied now that the project is completed. The local transportation company now has a sturdy and well-structured cabling system. The IT employees only have to wire additional modules within the racks. For the tML cabling systems tde offers standard migration options for 40/100 GbE via FO. In this way, Rheinbahn is well-equipped for future high-speed transmissions. Quick amortisation

The new cabling structure simplifies administration and considerably reduces the susceptibility to errors. Subsequent cabling and future cable exchanges can be carried out quickly and easily. In the long run this leads to substantial savings and the return on investment (ROI) will be quickly achieved.

"We are sure to have found the right partner for the cabling of the racks in our new data centre," Lellau sums up. In the medium run the cabling of the second rack row will follow. In the long run Rheinbahn is also planning the new cabling of the fall back data centre, whose racks are still freely wired. "After the certainly positive experiences we will of course address tde again," Lellau says.

### About Rheinbahn AG

Rheinbahn, founded in 1896 as Rheinische Bahngesellschaft AG, is the local transportation company of North Rhine-Westphalia's capital Düsseldorf. Under the management of the board spokesman Dirk Biesenbach and board and employee relations director Klaus Klar it provides transportation services in Düsseldorf, the district of Mettmann and the Rhine district of Neuss (Meerbusch, Kaarst, Neuss) as well as in six further municipalities in the region. With 735 vehicles on 110 lines Rheinbahn transports roughly 720,000 passengers on weekdays in a service area of 570 square kilometres with more than one million inhabitants. The local transportation company and its services rank fifth in the federal territory. With 2,875 em-

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ployees – including 114 trainees – from 31 nations Rheinbahn AG belongs to the largest employers and training institutions in the region.

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[www.rheinbahn.de/unternehmen](http://www.rheinbahn.de/unternehmen)