



Convincing cabling solutions

TelemaxX and R&M:
Turbo for the data highway.



TelemaxX is stepping on it. With R&M.

TelemaxX needed low-depth patch panels to create and extend its high speed network in the Karlsruhe technology region. The search soon ended – at R&M, the only supplier able to deliver on time and to specifications.

Point of departure

Deutsche Telecom used to be the only last-mile provider. Now the situation is changing as more and more regional last-mile providers join it. In the Karlsruhe technology region that provider is TelemaxX, established in 1999.



Connection to the data highway: TelemaxX people Marvin Bauer, Nadine Danhel and Frank Eberhardt (R. to L.) at a Karlsruhe outdoor distribution cabinet.

In the course of getting its «ETSI» area on its feet, the company needed low-depth patch panels. «We need active SDH-technology outdoor cabinets with passive fibre optic components», recalled Marvin Bauer.

The solution

TelemaxX first became acquainted with R&M in 1999 at a telecommunications fair – learning that we were the only ones able to supply what they were looking for, namely our UniRack, which allows depth adjustment in connection with the patching ring. This is how our association started in autumn 1999 and TelemaxX has been a satisfied customer ever since: «We seek long term relationships with our suppliers. We expect both our companies to grow as they



Under cover: Installing cables in the distribution cabinet.

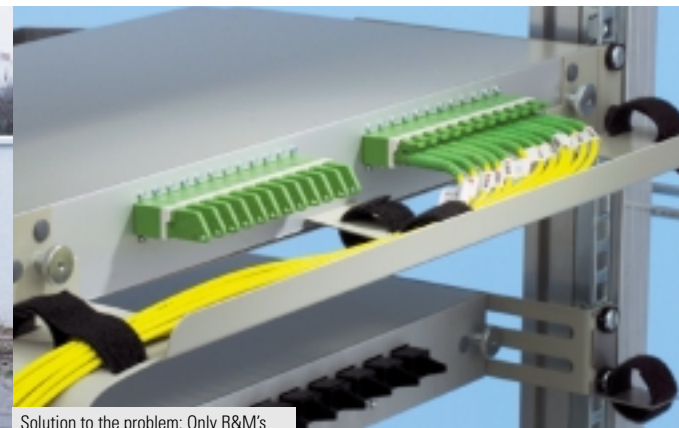
benefit from our market success», according to Frank Eberhardt. TelemaxX wants to continue working with R&M during subsequent expansion stages. Regional MDF's, new backbones and expansion of the city rings in TelemaxX's operating region, are on the schedule.



A handshake between Frank Arens (left) of R&M GmbH and Frank Eberhardt.

Why did TelemaxX pick R&M?

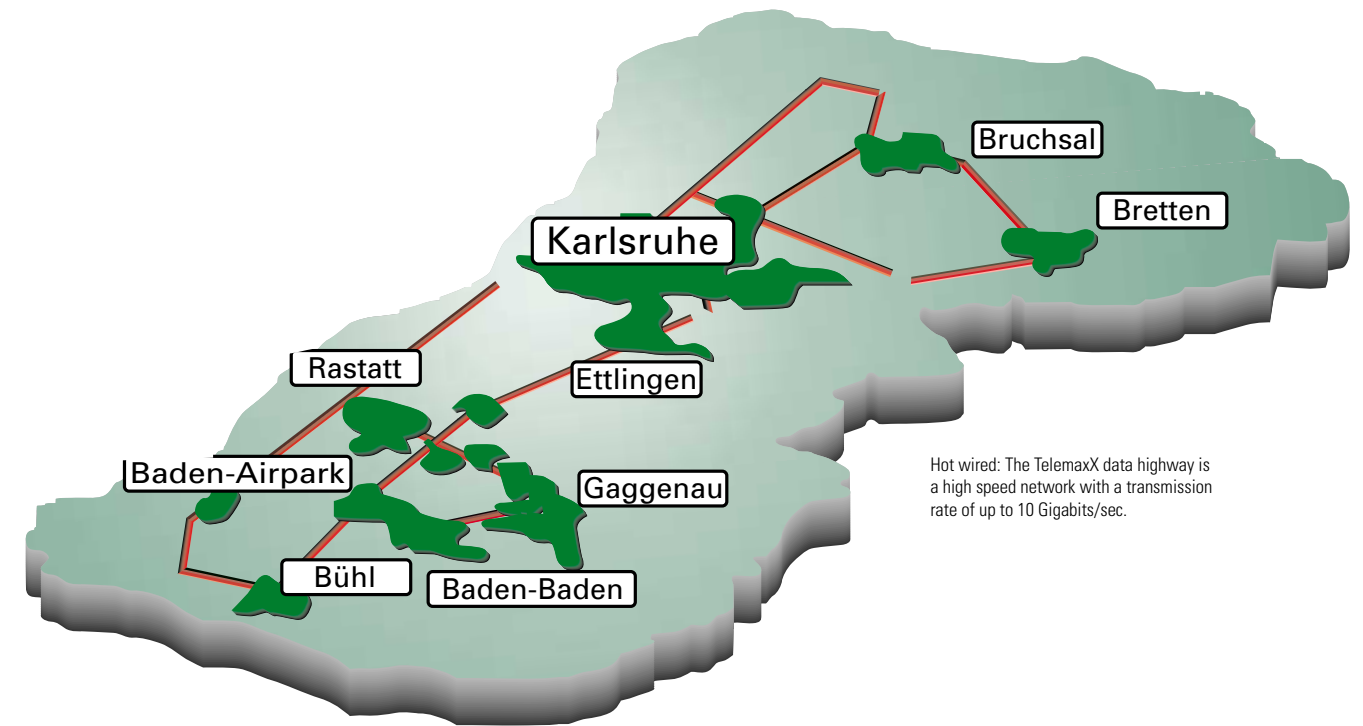
«Much spoke and continues to speak in R&M's favour – flexibility, superb product and service quality, as well as an outstanding price-performance ratio and exceptional service. To detailed



Solution to the problem: Only R&M's UniRack satisfies TelemaxX's depth adjustment requirements.

questions R&M reacted to our full satisfaction, quickly and in an uncomplicated manner. We also value the ability to deliver: In our business time is money. Knowing this, R&M offers short delivery times from its Frankfurt warehouse. A close relationship based on mutual trust has developed over time and our purchasing agents appreciate the helpful, competent advice from R&M's technical staff.» (Frank Eberhardt, TelemaxX)

The way to get things done.



Hot wired: The TelemaxX data highway is a high speed network with a transmission rate of up to 10 Gigabits/sec.

TelemaxX's 400 km-long fibre optic backbone, with up to 10 Gigabits/sec and with direct connections for voice, data and video transmission, links all of the Karlsruhe technology region.

Network architecture

TelemaxX has close ties to the region's public utilities. That is how TelemaxX came to dispose of a 30 km fibre optics and copper wire network of its own from the moment it was first established. Today, the TelemaxX fibre optics network links all of the region's commercial areas with a fully redundant ring network for maximum operating dependability. Local utilities support TelemaxX technicians if problems arise, guaranteeing immediate response and thus, greater availability.

High-tech on the road

In expanding the network, placing the active components of the SDH (Synchronous Digital Hierarchy) backbone used to connect customers on the last mile was a considerable challenge. Climate-controlled, 100 percent-sealed, outdoor distribution cabinets proved to be the breakthrough. They bring access to the data highway to the customer's front door and survive the worst kind of attack (even bullets) undamaged. That's real data protection.

Key figures

Transmission technology:

- STM4 (in the regions) by Marconi
- STM16 by Siemens
- STM64 (parallel) by Siemens

Access technology:

- AON 2.5.5 by Marconi ONU

R&M technology in TelemaxX's network

- R&M FO 19" 1U and 2U UniRack with unique patching ring depth adjustment
- R&M FO adaptation of 19" to ETSI
- R&M FO splice holder
- R&M FO splice protection cover
- R&M FO 19" 1U patch cord tray II
- R&M FO 19" patch cord guide 110 mm
- R&M FO LSH plugs (E-2000™)*
- R&M FO LSH adaptor (E-2000™)*
- R&M FO LSH patch cable with all connector types and lengths (E-2000™)*

* LSH produced under licence by Diamond SA, Losone (Switzerland)



This is how the interior of an outdoor distribution cabinet looks.

R&M in the TelemaxX Telehouse.

Not only does TelemaxX provide its customers with a state-of-the-art network, it includes a comprehensive service package – even professional telehousing.

TelemaxX is more than an Internet provider: In Karlsruhe the company operates a well-equipped telehouse which, next to the UUnet POP (Point Of Presence), accommodates other Internet providers. They all benefit from the high performance of TelemaxX-owned optic fibre links to well-known network operators. Companies that have installed their own server systems in the Telehouse enjoy a direct Internet link on the high speed backbone. TelemaxX is tops regarding security, too: meeting the most stringent security demands, its Telehouse is located on top of the Karlsruhe power station.

Services

A basic Telehouse package comprises climatization, intrusion protection, fire detection and fire extinguishing systems, around-the-clock access, Ethernet ports with 10/100 Mbit/sec, 24-hour hotlines, network link with up to 32 public IP addresses and non-interruptible power supply, backed by a 220 Volt emergency power generator.

TelemaxX also provides a wide range of optional services, including central server monitoring by the TelemaxX support centre for IP connectivity (PING); breakdown notification by SMS or email, firewalls with customized hardware access rules; 24/7 support for simple maintenance by TelemaxX technicians or direct, password-protected access to data traffic statistics on the TelemaxX website.

Keyword Telehousing

Telehousing is facility management, that is, making available space and equipment to local telecommunications companies in need of a POP (point of presence). Telehousing customers rent space or entire systems to save on hardware investments and the cost of expert personnel of their own.

TelemaxX-BasixX for server operation

- BasixX 5: 5HE in 19" cabinet plus access
- BasixX 10: 10HE in 19" cabinet plus access
- BasixX 20: 20HE in 19" cabinet plus access
- BasixX 40: 40HE in 19" cabinet plus access
- BasixX Square with 60 x 60, 60 x 80 and 80 x 80 cm areas



TelemaxX – Karlsruhe's rising star.



Karlsruhe is the optimal location for network operators such as TelemaxX. The only regional last-mile provider, the company offers Germany's silicon valley a traffic-jam-free data highway and custom-tailored services.

TelemaxX was established in 1999 as a subsidiary of regional and communal supply and service companies. The ten owners include city and township utilities and service providers, as well as Baden Airpark. Conditions were optimal: The region sports Germany's highest density of high-tech companies, the infrastructure was largely city-utility-owned and there is sufficient space at the company's Karlsruhe domicile. In 1999 TelemaxX was started with two employees. At the end of 2001 that number will have exceeded 30. About one fifth of them are ex-city utility employees, the rest come from other network operators and telecommunications providers. TelemaxX is a rising star in turnover, too, doubling the first year's DM 5 million in the second fiscal year. TelemaxX has Internet links through the backbones of major Internet providers, such as a direct link with Frankfurt's DE-CIX. On its customer list are companies with considerable broadband needs from industry, IT centres, banks, savings banks and insurance companies.

TelemaxX's services

Data services:

TelemaxX provides direct transmission links for voice, data and video between two or multiple locations; the lines can also be used to create private networks. Transmission rates can go up to 10 Gigabits/sec. And supraregional direct connections are possible through links with TelemaxX's partner data network in Frankfurt, Kaiserslautern, Mannheim and Stuttgart. Fully redundant SDH (Synchronous Digital Hierarchy) technology services include dual lead-in and around-the-clock service.

Internet:

TelemaxX offers its customers direct Internet links with speeds up to 10 Gigabits/sec and redundant links through the fibre optic backbone to the 50 POPs in the region (as of May 2001), for up to 99.5 percent availability over any given year, reaction times under one hour and guaranteed breakdown service response windows of less than eight hours. Next to Internet links from 2 Mbits/sec, TelemaxX also provides web hosting, web design, firewall/proxy services, as well as SDSL solutions, including for private customers.

TelemaxX corporate key figures

Employees	30
Total network laid	400 km
As of	June 2001

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