

# CASE STUDY

Security / Government

German Federal Ministry Of Health (BMG), Berlin

## SITUATION

The German Federal Ministry for Health (BMG) recently moved into their new headquarters at Friedrichstrasse 108 in Berlin. From February to July 2006, the building interior was completely renovated and updated. In order to achieve a uniform communication system for the entire BMG office complex, the goal was to install a convergent multi-service



network for speech, data, and video based on future IP technologies. The project consultant, K. Dörfinger Gesellschaft für Elektroplanung GmbH, received the order to plan the implementation and realization of the requests made by the ministry in accordance with the functional performance specifications.

The technologies to be installed had to correspond to current and future technologies. The infrastructure must be viable for the next 10 to 15 years, without requiring existing components to be replaced. High demands were placed on the flexibility, availability, and security of the multi-service network to be

implemented. The installer mvk Infrastrukturservice GmbH implemented the project for the general contractor, Altmann und Böhning GmbH, with products from Corning.

## DESIGN

The convergent network was installed as planned and was connected by more than twenty Corning IPOC® splice boxes in the backbone to a star-shaped, high availability system using Corning single and multi-mode InfiniCor® fibres. Data communication was implemented via a data centre, in which the core switches connect to the access switches on the various floors of the building. One hundred percent availability of the data network is guaranteed by the fibre-redundant design. Corning developed fibre-optic cables (SMF28e® single-mode fibre and 24x Laser Optimized® InfiniCor-® SX+ 10 gigabit multi-mode fibre) in accordance with the demands of the bid.

The access area was cabled in accordance with the standard EN 50173 (2002) as well as the latest version of ISO/IEC 11801. The values of the Category 6 Class E specifications up to 250 MHz are reached on all pairs via a four module link system. This enables gigabit Ethernet (1000 Base TX), Fast Ethernet (100 Base T), Ethernet (10 Base T), ATM 655 MBit, as well as ISDN and analog telephone communication.

## TRANSFER NETWORK

For the communication area, a high-capacity and high-quality passive network infrastructure had to be created that would meet the standards and large room requirements of this building. A hierarchically structured distribution design of approx. 600 m of fibre optic cable and around 100 km of Category 7 four-paired, shielded Corning cables were employed for the data network.

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The connection of work stations from the sub-distributors were all connected uniformly and with identical technology (single modular RJ 45 Category 6 Class E). The outlets were installed in the cable conduits, wall flushes, and in floor boxes. Each work station was equipped with two to four RJ 45 ports (one to two double outlets) with the quality requirements of Corning for type FutureCom E, Category 6. The implementation of the network infrastructure in this structure is based on the most modern national and international standards.

The network installation was designed to supply the work stations with the highest availability and was structured so minimal administration is required for telephone and computer equipment. The installer carried out the installation 100% according to instructions and the building inspection found no faulty installations.

## CONCLUSION

"At its office in Berlin, Friedrichstraße 108, the BMG has a modern multi-service network and can face the demands of all activities today and into the future," said Werner Pries, IT-Manager for the BMG. "The passive network from Corning is highly efficient, scalable, and extremely reliable."



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