

Seamless Migration of ISDN Services to IP wilhelm.tel, Germany

City Carrier Operates Legacy TDM Switch over MPLS Network

RAD solutions concentrate various circuit-switched voice channels onto a packet-switched backbone

Challenge

Offer traditional ISDN connections in new expansion areas where no SDH or copper infrastructure is available. Migrate TDM services to packet-switched networks while maintaining consistent Quality of Service.

Solution

Connect the ISDN switch to the backbone using RAD's hub-site pseudowire access gateway. Customer premises equipment is connected using RAD's IPmux TDM pseudowire access gateways.

The city of Norderstedt is located only a few kilometers north of the German metropolis of Hamburg. In 1999, shortly after the European telecommunications market was liberalized, the public utility Stadtwerke Norderstedt established its own communications company, cleverly named wilhelm.tel GmbH. Using this network infrastructure (of up to 100 Mbps), the company is able to offer the best value telephony services for the money, including free voice mailboxes, call forwarding, secure high-speed leased lines for Internet connectivity, and a wide range of analog and digital television programs.

While wilhelm.tel has rolled out IP/MPLS/Ethernet infrastructure in new expansion areas, many customers expect the city carrier to continue to maintain their existing ISDN services. For such customers, a solution was



"RAD gateways, equipped with TDMoIP technology, perfectly match our requirements. With RAD's partner, Pan Dacom Direkt GmbH, we have a supplier by our side that provides excellent support and possesses extensive know-how for problem solving and installation."

Sven Lange, assistant team leader for access and transmission technology in wilhelm.tel's field equipment group.



required that transmits traditional, circuit-switched services over a packet-switched infrastructure – a classic business model for TDMoIP® technology, developed by pseudowire pioneer RAD. TDMoIP creates a “virtual tunnel” through the IP/MPLS/Ethernet infrastructure over which the legacy traffic is transported.

Migration of existing TDM switching technology has been another challenge. Software adaptations and upgrades are no longer available for the platform that is in place, and the supply of replacement parts, or even the possibility to repair existing parts, is limited. Therefore, a decision was made to gradually convert the voice platform into Voice-over-IP (VoIP) based architecture. During the period of transition, the traditional ISDN switch and the softswitch will be operated in parallel. For that reason, the new solution had to support conventional as well as softswitch solutions.

“Together with Pan Dacom Direkt, a local RAD partner, we developed a perfect solution to be able to offer ISDN services in areas without an SDH network,” says Sven Lange, assistant team leader for access and transmission technology in wilhelm.tel’s field equipment group.

The solution proposed by Pan Dacom Direkt is based on RAD’s hub-site pseudowire access gateway at the central location, complemented with IPmux gateways. The TDM voice platform and softswitch are connected to the hub-site device and, from there, to the backbone over redundant Gigabit Ethernet interfaces. On-site at the customer premises, IPmux units send the TDM traffic over IP. This combination allows transmission without compromising any ISDN feature. Because all new RAD equipment belongs to the same product family, wilhelm.tel has acquired a fully seamless solution. The gateways located at both central sites and remote locations can be configured and monitored using a single management system.

“The modular hub-site pseudowire access gateway installed at the headquarters allows extensions on demand at any time. So no unused ports are in operation, as would be the case with a non-modular alternative.”

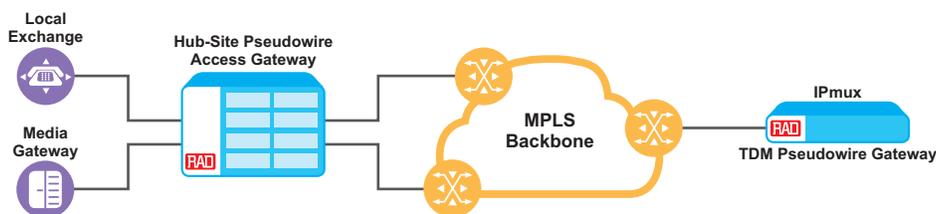
Markus Förster, team leader, product management at Pan Dacom Direkt.

Features

- Seamless end-to-end solution
- Proven pseudowire technology
- Modular design
- Central management

Benefits

- Quick and easy deployment
- Transparent transmission of all ISDN features
- Extensions available on demand
- Configures and controls all components



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