

## German Research Network, Deutsches Forschungsnetz, Deploys Videoconferencing Services to over 550 Facilities with RADVISION's Videoconferencing Infrastructure Solutions

### Highlights:

Client:	Deutsches Forschungsnetz (DFN)
Product:	RADVISION ECS Gatekeeper RADVISION viaIP-400
Number of sites:	550 facilities in Germany
Application:	Allows videoconferencing and data collaboration between institutions for joint research, distance learning and virtual university programs, between staff and associates.

### Why DFN Chose RADVISION:

Cost/performance ratio for product offering, high scalability and reliability, and excellent management tools.

### Introduction:

The Deutsches Forschungsnetz (DFN) is a national communications network in Germany for institutions of higher learning, public and private research groups, and government facilities. DFN broadband research network is designed for telecooperation between institutions for joint research, distance learning and virtual university programs, communications between staff and associates, and data transmissions.

DFN provides voice, video and data communications services and global Internet access to its 550 member facilities. The entire network is monitored and managed by RADVISION Enhanced Communication Servers (ECS) advanced gatekeeper technology. Multiple ECSs manage traffic flow, service delivery and equipment status throughout the system. Also distributed in the network are the RADVISION *viaIP* multi-service conferencing infrastructure products, providing the bridging for multipoint conferences, gateway functionality for communication between IP and ISDN networks, and data collaboration capabilities.




**Challenge:**

The DFN initiative was developed as part of a non-profit organization, DFN-Verein, in 1984 for the promotion of computer-based communication and information services between universities, technical colleges, research and private sector bodies. Support for the organization came from the member bodies as well as the German Federal Ministry of Education and Science with an aim to develop new applications and services in the scientific community and later, the global Internet.

The organization soon recognized the need for high-quality communications infrastructure to support the R&D efforts as well as internal and external communications of its members. This was the impetus for the DFN to launch the Gigabit-Wissenschaftsnetz (G-WiN), a gigabit pure IP network. In the summer of 1998, the organization set-up two pilot programs for their new gigabit highway and reached some specific conclusions that would impact the growth and development of the network and its services. Their findings showed:

- The amount of network data traffic showed an annual growth rate of 2.2: within five years, the traffic would be 50 times its current volume.
- New applications, particularly in multimedia, videoconferencing and supercomputer sector, were substantially boosting the present traffic volume.
- International traffic was growing at an exponential rate.
- There was a growing demand for quality of service and services integration, like voice over IP.

These findings prompted the organizers to bridge their G-Win research network with the extensive Internet2 initiative in the United States This brought another 100 universities and research facilities to the direct reach of DFN. Now the organizers turned to find the network infrastructure that would manage these complex and far-reaching connections as well as provide bridging capabilities for the growing number of collaborative research projects that had blossomed under the auspices of the DFN. Since the DFN system served as a backbone for so many disparate networks and a hybrid of endpoints and devices, the solution needed to be highly interoperable, flexible and scaleable to meet the rapid growth of the network.



**Internet 2** is a consortium of over 180 universities working in partnership with industry and government to develop and deploy advanced network applications and technologies, accelerating the creation of tomorrow's Internet. Internet 2 is recreating the partnership among academia, industry and government that fostered today's Internet when it was in its infancy. The primary goals of Internet 2 are to create leading edge network capability for the national research community that enable revolutionary Internet applications and to ensure the rapid transfer of new network services and applications to the broader Internet community. (See associated RADVISION on ViDeNet, an Internet 2 videoconferencing network powered by RADVISION technology)

**Solution:**

The first issue that the DFN needed to resolve was how to manage and monitor traffic and services throughout the network to its members. With over 550 member facilities and more than 10,000 network devices, there needed to be an intelligent gatekeeper that could track and supervise which entities received access to specific services and when. At the same time, the system needed to give priority to certain types of time-sensitive traffic or mission critical applications. For this task, DFN chose the RADVISION Enhanced Communication Server (ECS) advanced gatekeeper application.

Each ECS could provide videoconferencing services for up to 400 simultaneous participants and manage over 12,000 devices on the network. In addition, multiple ECSs can work in a hierarchical fashion to provide a single point of configuration and management that would update the dispersed ECSs throughout the network.

“We chose RADVISION’s solution after extensive evaluations,” said Klaus Ullmann, director of DFN, “The cost/performance ratio for their product offering, high scalability and reliability, and excellent management tools made RADVISION the clear choice for this kind of extensive deployment for videoconferencing.”

The second issue to be resolved was to allow members of the DFN not only to communicate amongst themselves, but also with organizations outside of the network. If an organization was not connected through dedicated IP connection, then a gateway had to be used to provide connectivity to ISDN-based organizations. DFN chose RADVISION’s multi-service platform, the *viaIP*, to interwork between IP and legacy ISDN systems, multipoint conferencing for three or more parties to participate in a single conference, and data collaboration functionality in one highly scaleable and flexible solution.

**Results:**

Implementing the RADVISION solution enabled the DFN to intelligently manage the IP telephony and multimedia communications on its network. The ECS allows network managers to set policies and control network resources, such as bandwidth usage, to ensure optimal implementation. This scaleable solution was also flexible enough to accommodate the growing needs of the DFN’s continuously changing and expanding networking environment. By providing complete functionality for defining and controlling voice and video traffic management over the network, the DFN could provide services at various levels to its tiered membership.

**Enhanced Communication Server (ECS)** – The RADVISION ECS is an advanced management application with H.323 gatekeeper functionality that is essential for the management of IP telephony and multimedia communication networks. The ECS can set policies and control network resources, such as bandwidth usage and traffic direction, to ensure optimal performance.

**viaIP Multipoint Conferencing Unit** - Renown for its high-density, unlimited scalability, and its proven performance, the viaIP MCU bridges conferences for voice, video and data between three or more endpoints.

**Data Collaboration Server** – The DCS is a dynamic and scalable solution for data collaboration enhancing conference capabilities by enabling application sharing based on the T.120 standard.

**viaIP Gateway** –The RADVISION viaIP Gateway provides connectivity between IP and ISDN networks. The Gateway allows organizations with legacy ISDN-based videoconferencing systems to communicate with IP-based systems for voice, video or data communications.



The deployment of the RADVISION *viaIP* chassis gave DFN members the ability to conference with three or up to four hundred participants in a single videoconference. This system can also work in tandem with additional *viaIP* chassis if the DFN network growth demands an increase in conferencing capacity.

Equipped with the RADVISION Gateway, the *viaIP* also enabled DFN members to use their own legacy ISDN videoconferencing equipment or patch in non-DFN members with ISDN equipment of their own. The gateway provides seamless communication between IP- and ISDN-based systems.

The RADVISION solution provided the DFN with the management tools and functionality it needed to provide a robust service offering to its members. As the DFN network continues to flourish, the RADVISION solution can grow and expand along with the network to provide the high quality of service and features that its members have become accustomed to.

#### **About RADVISION**

RADVISION (Nasdaq: RVSN) is the industry's leading provider of high quality, scalable and easy-to-use products and technologies for videoconferencing, video telephony, and the development of converged voice, video and data over IP and 3G networks. RADVISION has two distinct business units. RADVISION's Networking Business Unit (NBU) offers one of the broadest and most complete set of videoconferencing network solutions for IP- and ISDN-based networks, supporting all end points in the industry. The company also provide businesses and service providers with integrated solutions that deliver converged IP-based video telephony applications to employee computer desktops and residential broadband homes worldwide. The Company's Technology Business Unit (TBU) provides protocol development tools and platforms, enabling equipment vendors and service providers to develop and deploy new converged networks, services, and technologies. For more information please visit our website at [www.radvision.com](http://www.radvision.com).

For more information about DFN, please visit [www.dfn.de](http://www.dfn.de)

