Case Study

Excellence in KVM and Video

ZDF equips new studio with Draco tera enterprise for HD signal distribution and switching

Photo: Rico Rossival, ZDF

The Customer

ZDF (ZweitesDeutschesFernsehen), located in Mayence in Germany, is one of Europe's major public service broadcasting organizations. The company transmits a bouquet of prime ZDF channels as well as several special interest channels for culture, information and younger target groups. In addition, ZDF holds interests in other public service broadcasting alliances including the news and information channel, Phoenix; and 3sat, the German-language community TV channel of German, Austrian and Swiss broadcasting organizations. ZDF produces many popular programs, including the "heute" newscast and several entertainment shows.

The Challenge

A full refurbishment of a studio area in the ZDF headquarters was recently undertaken. This required the installation of a KVM matrix switch solution to manage all input and output devices in the broadcasting production workflow; including computers, video servers, video and audio editing devices and control systems. The studio is responsible for the production of a variety of different program formats such as entertainment shows, sports programs and TV magazines.

The initial requirement called for a KVM matrix switch that could handle the centralized switching of 50 computers and 55 consoles and accommodate future expansion of the system up to a possible doubling in switching capacity. Each user workstation comprises a keyboard, mouse and dual screen displays and has individual access to two dedicated computers. In addition to regular PCs, the studio also deploys a number of different systems for video and audio technology, including special EVS video servers with LSM controllers which require RS422 ports. For live program viewing and monitoring, real-time transmission of digital DVI-D signals at a resolution of 1920 x 1080 is necessary. To ensure robust and reliable operation power supply and critical component redundancy was also required.

The Solution

The decision was made to deploy IHSE's Draco tera enterprise. The 288 port matrix switch supports all relevant computer signals and is equipped with multi-level redundancy features.

The Draco tera enterprise matrix switch incorporates IHSE's dynamic Flex-Port technology, which allows any port to be designated as either an input or an output. The matrix switch also includes the Smart Connect function, enabling automatic recognition and mapping of sources and peripherals without manual reconfiguration whenever cables are removed and re-inserted. This will enable expansion in the future without the need for additional reconfiguration.

In a live broadcast environment, access to sources and information is required by users without delay, no matter where they are located in the building. The Draco tera enterprise provides near-instantaneous switching from each console to any connected computer within a few milliseconds. High-definition video and audio material is transmitted throughout the system without any perceptible delay or loss in quality.

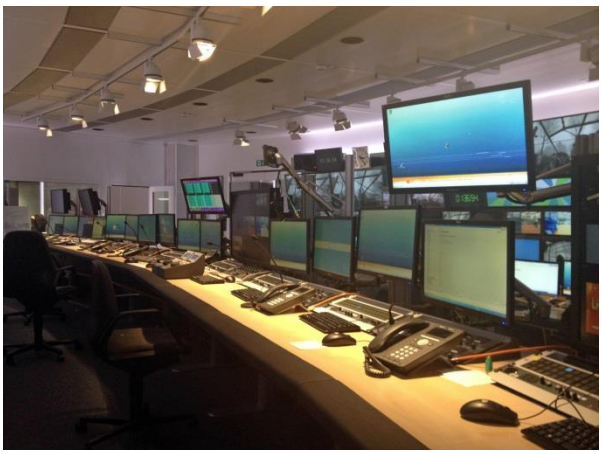
A further factor in favor of the IHSE system was its comprehensive system management control. Administrators are able to define fixed assignments of consoles to remotely located sources with managed access rights and rapid system reconfiguration whenever a set of computers is required by a different production team.

System reliability and resilience is ensured by three redundant PSUs working in load-sharing mode; each one is individually powerful enough to provide all required power in the event of failure of the others. Redundant extenders at the source end increase transmission safety of computer signals by providing a secondary link for CPU access over an additional matrix.

It was of particular importance for ZDF to be able to access the German-based development and support teams at IHSE: a matter of course for IHSE. The teams consist of engineers and developers who are fluent in both German and English, who can offer the highest levels of personal support and consultancy for customers throughout office hours.

The collaboration between IHSE and ZDF has been very constructive from the very start. Requests and requirements made by ZDF for new features were received well, developed and transformed into practical solutions.

ZDF newscast studio



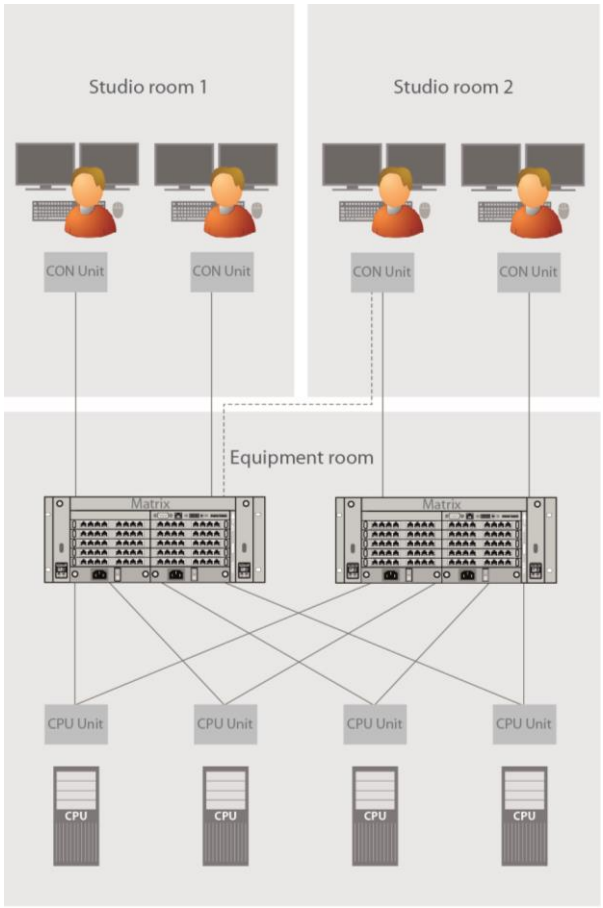
ZDF direction consoles

The Benefit

The system has been successfully integrated in the studio and is now in day-to-day operation to streamline the production routine. The production staff can instantly access any video source in order to manage and control broadcasts from their personal workstations. The Draco tera enterprise

KVM solution is steadily functioning in the background providing the core data switching and distribution facility within the studio.

Following the positive experience with IHSE's KVM products and highly-responsive service levels, ZDF is currently planning the expansion of the KVM facility for another production studio. The new studio will access the same CPUs via a further 288-port Draco tera enterprise matrix switch. Sharing of all sources, made possible by the use of the KVM extenders with redundant data links, leads to a highly efficient studio design.



Functional Diagram

KVM products in use:

- **Draco tera enterprise** matrix switches
- **Draco vario** extenders
- **Draco vario** extenders with redundant data links

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