

Europe's DTV roll-out

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State-of-the-art throughout for TVN's new OB

Digital on the road

by Reinhard Wagner

In October 1984, publishing company Madsack initiated the foundation of TVN, Television Programm- und Nachrichtengesellschaft, through which Madsack moved into the new electronic media area.

The first clients were Sat.1 and RTL plus. Since then, ARD, ZDF, MDR, NDR, ORF, VIVA, and others have joined the list.



Today, TVN employs approximately 130 permanent and 15 freelancers in its four business fields: film and TV production, mobile production, graphics/new media and business communication. Shareholders are the publishing company Madsack (70%) and Studio Hamburg (30%).

TVN covers everything from digital picture creation over high-end 3D animation to Internet presence and the production procedures of multimedia products like CD-Rom and DVD. The company covers live events like the soccer World Cup, Love Parade in Berlin and the EXPO-2000 in Hannover. Apart from an existing 10 camera digital OB truck, it runs mobile journalist and VTR editing OB units.

TVN invested almost DM 22 million in its state-of-the-art all-digital truck for live field production. The 40 ton Ü2 truck represents -- with over 20 cameras, more than 150 monitors, three control desks, a digital audio mixing console with over 120 channels and additional equipment for communication and support -- another fine example of TVN innovation. A highlight is the networked HDD system, where IT and broadcast technology start to merge. The total length of the trailer is 13.6 m and it carries 22 working seats.

TVN OB truck director Thomas Stoschek and audio engineer Thomas Hamman designed the Ü2 concept. The truck is designed to have enough space for clients and personnel to feel comfortable. The Ü1 OB truck experience influenced the design and equipment list of the new Ü2. The control desk is moveable and each seat has the same infrastructure (phone, 4-wire, intercom, etc.).

The contractor for this huge project was Protec from Bingen in Germany, in co-operation with Sony Deutschland, Snell & Wilcox, Riedel, Canon Euro-Photo, Grass Valley/Brauch Elektronik, Penta Studiotechnik, Philips Digital Video Systems, Sennheiser, Studer Deutschland and Studio Hamburg Media Consult International (MCI). The realisation took 11 months, during which the focus in selecting equipment pointed towards reliability rather than whatever was 'brand new'. In France, truck and trailer were fitted with the electrical infrastructure at Toutenkamion in Ladon.

The electronic installation took place at Protec in Bingen.

The Ü2 production suite is placed around a central digital Metawave (224x352) router, a digital 16x16 Network Electronics back-up and an analogue Sandar video router. The concept allows support of three live feeds in parallel. Six digital VTRs and four GVG Profile PDR-204s are provided, for Super SlowMotion and editing. Two vision mixing consoles (two Philips DD35s and one DD10 which is on the equipment truck) and two 4-channel Abekas DVEous DVEs complete the main video installation.

A 5.1 D950S surround sound audio console from Studer supports all surround requirements. Two Yamaha O2R mixing consoles are connected via a multiplex unit to the audio network. The Studer D950S audio mixing console controls and configures all audio installations. There is therefore no need for an additional audio router. Additional routers support and switch TC and RS-422 only.

The equipment truck provides an additional editing suite with 30 preview monitors, and operates as the centrepiece for interconnections between external equipment and the OB truck. Video, audio, 2/4-wire/control and communication links are tied within the OB truck by special multi-wire cabling.

An AKC1500 controller system from Protec controls and configures routers, tally, UMDs and other equipment. This special controller system enables personnel to store set-ups and recall them as required. It provides all the drivers necessary for control of routers, mixers, control panels, etc and delivers back-up. Based on a virtual matrix that is split into sources and destinations on different levels (i.e. for analogue, digital and control signals), it represents specific layers, which can be configured and switched independently.

OB NETWORK

Over 70 different preview and master monitors (9-inch Class 2 to 20-inch Class 1) display in and outgoing signals. A number of 20-inch-NEC TFT-displays (Barco Vivaldi Quad-Split in editing and in the SlowMotion control section) are used for temperature and space reasons. Central communication, enabled by a digital Drake 4200 intercom unit, gives the director control of all personnel.

The vision mixer, servers, routers, intercom, etc are networked via an FC and 100Base-T Ethernet network, which eases updating and reconfiguration. The Philips DD35/4 vision mixer in control desk area 1 has 62 direct inputs. Four independent clocks from Alpermann & Velte (DCF-77 with GPS) allow the operator to record and generate different times at once.

A rotary switch at the director's seat controls clock settings. Five Genelec audio monitors enable monitoring in 5.1 Dolby Surround quality. For special effects, two 4-channel Abekas DVEous DVEs are built-in.

Behind the control desk are four Super-SlowMotion seats where Kurrer remote control units enable access to four GVG Profile servers and an EVS-Server. All four Profiles are networked and run Super Slow Motion software from Brauch Elektronik.



POWER EDITING

Separated from control desk 1 and 2 is the on/off line editing seat with access to Profile servers, digital VTRs and a Yamaha O3D mixing console. A Philips DD35 is located here, as well as a

4-channel Accom DVEous.

Located in the camera control section are picture and camera control master clock generators, measuring devices, camera control units for the Philips LDK series cameras, and routers. With more than 40 digital frame synchronisers, external signals can be used inside the OB truck. Kudos from Snell & Wilcox is the perfect choice, because it is easy to configure, store and recall settings.

AUDIO MIXING

"With the D950S digital mixing system from Studer, all customer requests can be fulfilled," says Thomas Hamann, audio engineer at TVN-Ü2. The scalable DSP power of the processor and the new 40-bit floating point technology and 24-bit converter structure secure the flexibility and quality of the system. Its ease of configuration, by using the internal set-up program, makes the daily life of an audio engineer easier. 24-bit I/O signals are connectable directly via MADI and AES/EBU IFs to the DSP.

Different software modules enable fast and reliable reconfiguration between different project settings. The proprietary Virtual Surround Panning (VSP) designed by Studer is part of the D950S. To ensure connection and playout/ recording of analogue and digital modulation, intercom and control signals around the audio mixer, several LWL devices are placed together with digital telephone hybrids (2-channel), diverse codecs (Musiktaxi, CDQ-Prima), Dolby Surround encoder/decoder (SEU 4, DP 562), effect units (Lexicon 480L, 300, PCM81) and multitrack recording devices (Tascam DA 98HR and Otari PD 80B).

Besides all that, the Ü2 OB truck carries state-of-the-art transmitters and receivers, such as SAT, LWL base units (internal/external), wireless microphone technology (Sennheiser eight channel UHF EM 1046, and three channel UHF EM 203 MF), digital colour correctors and legalisers.

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