Station to Station
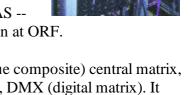
Massive system overhaul for Austrian pubcaster

ORF takes digital steps

by ReinhardE. Wagner

Vienna -- Austrian broadcasting corporation ORF has a daily output of up to 195 hours of radio and 48 hours of TV programming. Austria's only terrestrial public broadcaster began an ongoing overhaul of its production complex in 1998. Karl Leitenbauer, senior project engineer, Planning and Design Division, Video Department at ORF, is responsible for this huge project.

The move to a completely digital studio production environment is underway, in conjunction with ETAS, a Vienna-based system house which supplies all hard/software and provides the consulting work force. Walter Eisler, former GM at Sony Austria, founded a local broadcast product distributor ETAS -- which in turn works with Gelantec, the entity in charge of the installation at ORF.

The renovation includes the complete exchange of the existing (analogue composite) central matrix, called ZMX (Zentrale Matrix), in favour of a digital A/V routing system, DMX (digital matrix). It also involves the replacement of all analogue video and audio production technology in the studio and control desk area.

All video/audio distribution cards are from Leitch (glue series). The search for a click-free audio routing system led to Grass Valley Group's GVG 7500. In addition, a 256x256 video router (GVG 7000) supports digital video and fulfils all requirements of the new DMX. The shift from the old router to the new central matrix system has not taken place yet, so the system operates in parallel in the meantime.

ORF's studios 1, 2, 3 and 5 are dedicated to audience productions with space requirements up to 1,000 square metres. Studio 12 operates with Orad virtual reality, that is also usable in studio 11 and 4 (each 60 square metres). Studios 13 and 14 are announcement facilities.

A new concept was introduced with the design of the studio and control desk area: the control of 10 studios through five control rooms. The older installation connects each studio to a single control room, which makes for limited flexibility. An 'interface' room was designed that enabled the refurbishment of the control rooms and studios during production. This dedicated switching room contains main (multi-wire) connector panels where technicians/engineers are able to re-route a control room to the studio.

The switching and positioning of the multicore cable connectors is controlled through monitoring-cameras, transmitted over a dedicated Intranet-camera server and viewable on each ORF-Intranet network PC. Because of this monitoring solution (JVC one-chip cameras), an additional router (for signal, control, triax, lighting) was superfluous and money was saved.

The control room router (GVG 7000 with 128x128 crosspoints) switches the signal of the control room monitors and 10 router switchable/selectable input sources of the vision mixer. On each monitor, input-1 is the matrix output and input-2 is the collision signal. All signals on that particular input are remote controlled and, for easy operation, in case of collision it can be switched by hitting one button. In addition only one button is necessary to change the display format from 4:3 to 16:9.

The 74 UMDs indicate the origin of the monitor signal. A special IF (GVG mixer 'red' and DVS 800 'green') controls the indication of on-air and/or alert light when the source on the GVG 4000 vision mixer is selected. The decision to go with the 4000 was based on its control concept and user-friendly IFs. Operators at ORF were used to GVG mixer products for many years. A key factor: there was no big investment in personnel training   .

WORKING MODEL

The philosophy behind all this is to keep the installation compression-free. For best quality results, all interconnections are SDI-signal based. For future applications, SDTI-signal transmission is being considered. Incoming analogue signals (camera, feeds, etc) are converted to digital. Although the Panasonic M-2 tape machines badly need replacement, up to now no decision has been made regarding a preferred brand or standard.

A Tektronix Profile (PDR-100) server and Sony Digi Beta DVW-500P/Panasonic M-2 AU 650P tape machines are used for recording and playback of material. A VHS recorder (Sony SVO-150) and laser disk player (Sony LVR-4000P) are installed for playback convenience. The Charisma X-TEN performs digital video effects, Chyron Max creates all CG and a Snell & Wilcox mixer feeds the video-wall. Via Snell & Wilcox Transphix (VGA to SDI converters), VGA-signals are inserted into live production and recordings.

The ORF developed its own still store system, now supported and sold through DIVIS in Austria. Based on a WinNT-system with Matrox I/O cards (DigiSuite or Illuminator) it is accessible through network connections from the graphics department. It offers still stores with alpha-channel (TGA format), which are stored on a central server, and supports playlist performance for in-time scheduling.

A speciality is the vocal Cue-Counter by Alpermann & Velte. This unit, set to a dedicated timecode and fed from the timecode of a tape machine, starts counting (speech) when it reaches the pre-selected point with the pre-set cue-count-start time.

Locally installed in each studio, ADAs and VDAs perform the distribution of video and audio signals. They are part of two racks (located in the studio itself) that contain Tektronix WFM-601 measurement, patch panel switching, monitoring and IF devices. By creating such a service/support unit, the distribution of signals in the studio complex is much easier and the amount of interconnections between the control room and the studio is limited to a minimum. Lighting control is provided by AVAB (Panther) and the control panel can be used either out of the control room or directly from the studio.

The entire refurbishment is scheduled to be finished with the installation of ORF's planned newsroom complex, in the year 2003.