

Production

[TVBE contents page...](#)

STATION TO STATION - Reinhard Wagner

RTL TV's digital destiny

Commercial broadcaster RTL-Television recently completed the digitalisation of its transmission and production facilities at headquarters in Cologne. Back in 1988, when RTL TV built its first transmission and production centre, the technology was analogue composite. In the central machine room was a mix of one-inch C-Format and Betacam SP. The playout centre was equipped with GVG100 and AMX100 vision and audio mixers. To fulfil security and backup requirements, a second unit was always in mirror operation.



In 1992, the first major refurbishment took place. An automation system combining Columbine M-CAS with a GVG M-21 went into operation.

The decision to move RTL TV playout, production and transmission to a digital plant was evaluated in 1997. A team of 15 engineers, in conjunction with input from creative and production departments at RTL, started developing the design. The movement from analogue to digital was scheduled in five major steps.

First, the 282 metre square studio and control desk area II, with complete audio, video and camera technology (for news, daily magazine, main and late night news) was installed. This comprised Philips LDK camera equipment, a GVG-4000 vision mixer, EVS server (for intros) and a Profile 200 server (RAID-3 protected for animation and effects) -- all wired with SDI coax cable. This went on-air at the end of 1997.

Step two, the renewal of the master control room, was the most comprehensive and challenging. As a commercial playout and production site, RTL broadcasts for 24-hours -- uninterrupted programming via cable, satellite and terrestrial. The new master control room had to be built while the old one was still in operation.

After completion and final acceptance tests, all connections (incoming and outgoing lines, 4-wires, intercom, etc) could be swapped or shifted. The wiring was systematically removed from the old to the new patch panels, ADA/VDAs, A/V routers and satellite up/downlink dishes. Equipment chosen included a digital router from Metawave, analogue A/V preview router from Sandar, Drake intercom system 3000, and an NVision RS-422 router.

The new master control room went on-air in October 1998 with a premier event -- the German general election. Under the new system, analogue transmissions via FC cable go out to Deutsche Telekom and via satellite to Astra. Digital signals (MPEG-2) are sent directly from the RTL site via

up-link dishes to Eutelsat.

Step three, the digitisation of the playout and VTR recording centre was finished mid-November 1998. Three GVG M-2100 transmission control mixers (for on-air, back-up and special purpose/service) are in operation. The Columbine MCAS automation system controls the total playout. Operators edit and execute commands on MCAS only when required.



Playout control area

A fader for audio level control gives access to the digital audio to adjust the audio level when necessary. To prevent transmission of illegal colours, RTL installed Numeric video legalisers for readjustment and Tektronix WFM-601x wave control monitors.

With access to Pluto servers for uncompressed signal broadcasting, GVG Profile servers for compressed signals and an LMS with DigiBeta VTRs, the playout centre delivers the main RTL output. Currently, RTL is evaluating the possibility of implementing another automation system because of the need for server control and better implementation of the system into its main control system (booking, playout, transmission time, etc). All Profile servers inside RTL are connected via FC to perform fast transmission from one system to another. A move to a shared storage environment will be the next challenge.

The experiences of the production team and directors led to the decision to move the relevant production VTRs from the central machine room back into the control desk area. Therefore, all clips necessary for news or magazine productions are now played out directly from the VTR section (newsrack) close to the control desk room.

In step four, the booking office (at Leitungsbüro), located next to the master control room, was re-organised technically. The booking office is split into two sections; the VTRs and the news feed complex. In the VTR section (with 10 DigiBeta machines), all incoming transmissions (news from remote studios and correspondent rooms) are recorded onto tape for further editing. News feeds from agencies are recorded permanently in the feed room onto Profile and VTR. Here, material is pre-selected and played out from the Profile onto tape for linear or nonlinear editing (Avid Media Composer) and post production. There is no direct playout from the booking office.



VTRs have been moved back into the control desk area

Finally, the last step in the digitisation process was the updating of control desk area One to digital production. In addition, GVG4000 vision mixers and Profile servers (extended storage) have been used. This area accommodates two studios of 140 and 800 metres square, fully equipped with monitors, cameras and lighting control. All signals go into the audio and vision mixer on separate inputs. To shift from one studio to another, the operator has simply to recall a set-up and the configuration is changed.

RTL decided to stay with GVG throughout because of operational philosophy continuity of the vision mixer family. This new installation went on-air in December 1999.

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