Case study
TVN in Poland: Studio production

At a glance

TVN, one of Poland's biggest broadcasters, decided to re-arrange its technical equipment from scratch. The ingest and playout setup of its two major control rooms were especially questioned in 2013. The main challenge here was to find a new system that had exquisite multi-format capabilities

TVN decided for technology from Rohde & Schwarz DVS. The R&S®VENICE played a major role in the new setup: In total 6 units were placed in TVN's broadcasting environment.

Two pairs of VENICE are now the main sources for ingest and playout in two separate control rooms, while two other units of VENICE are installed at TVN's central ingest. TVN especially benefits from VENICE's outstanding multi-format capabilities. Having an established digital central archive and a production SAN in its workflow, TVN was very happy with VENICE's connectivity options. Moreover, VENICE's integrated GUI facilitates TVN's complex ingest and playout workflows.

Thanks to the systems from Rohde & Schwarz DVS TVN is now able to establish parallel workflows with different formats and profits from the planned redundancy concept.

"The technology from Rohde & Schwarz DVS has given us – and our producers and operators – a completely new outlook on broadcasting. Now we are definitely more flexible and faster – and overall a better broadcast operator. Instead of having to tell 'No, it's not possible', we are happy to say 'Of course we can do that'."

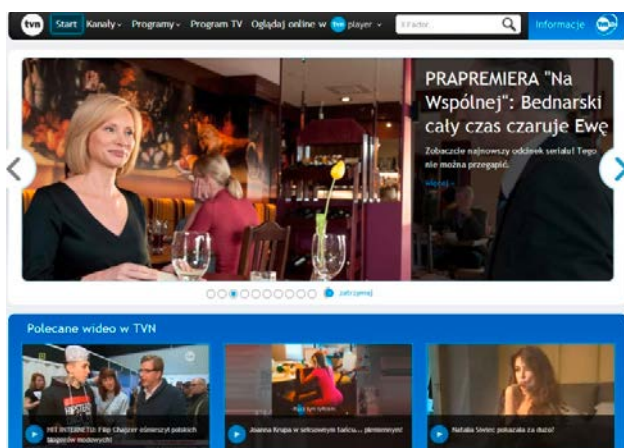Dariusz Kalamarski
Chief Engineer at TVN

About TVN

TVN is a Polish commercial Television network that started operating in 1997. Already in 2004, TVN reached 86 % of all Polish households. TVN is part of the TVN S.A. group, the leading privately owned media group in Poland. Currently the group owns and operates ten TV channels (TVN, TVN Siedem, TVN 24, TVN Meteo, TVN Turbo, iTVN, TTV, TVN Style, NTL Radomsko, TVN24 BiS).

In the Polish market, TVN is recognized as a leading TV broadcaster, focusing on high-quality entertainment and independent news and current affairs program. Supporting the HbbTV (Hybrid Broadcast Broadband TV) initiative, a consortium of several companies, e.g. SES, OpenTV and Institut für Rundfunktechnik, TVN also aims at establishing a European standard for specific set-top boxes to receive broadband multimedia applications and broadcast TV.

TVN has adapted several major TV shows, e.g. "Big Brother", "The Bachelor", "Dancing with the Stars", "Kitchen Nightmares", "Got Talent", "Who Wants to Be a Millionaire", "The X Factor" and many more.

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Solution

When TVN went looking for a perfect solution for its two newly set up studios, the broadcaster was specifically asking for a solution that would offer supreme multi-format capabilities.

Being such a large facility, TVN handles the ingest from several different sources, e.g. live cameras, studio cameras, studio stream, live signal, VTR, editing workstations – just to name a few. Of course, these come along with different file formats. This is a challenge most broadcasters are very well aware of.

TVN produces several major shows – e.g. Polish versions of "Who wants to be a millionaire" or "The X Factor" and takes great pride in delivering high-quality news and a current affairs program to more than 30 million viewers. Thus, redundancy of its infrastructure was a clear must-have.
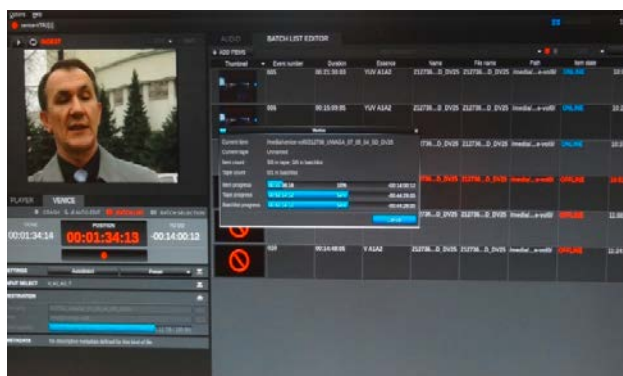
Moreover, the central ingest had to be equipped with some additional systems that would allow the staff at TVN to operate more freely. Flexibility was the keyword here.

In order to manage all the equipment and the planned new channels, TVN was also keen on a monitoring device that would clearly display all necessary data to facilitate its busy work schedule.

TVN decided for equipment from Rohde & Schwarz DVS: VENICE is an ingest and production server for highly optimized TV production workflows. Broadcasters deciding to migrate from a tape-based to a file-based environment have trustfully turned to VENICE already. The new TV production workflows generated by VENICE offer considerable time savings and allow broadcasters to respond more quickly and flexibly in their current and future broadcast operations.

This is possible because VENICE exceeds classic video server functionalities by far. Rohde & Schwarz DVS's ingest and production server allows TV stations and broadcasters to excel in all required media operations: VENICE is able to ingest, transfer and transform media and then to play it out. The keys to its success are VENICE's ease of use, its

multi-connectivity and its capability to handle all these assignments beyond the boundaries of proprietary solutions, formats and codecs.

At TVN, first, four VENICE systems were installed in the two separate studios. After successfully working with the systems from Rohde & Schwarz DVS, another set of two VENICE was added to TVN's central ingest. In total, six VENICE systems (i.e. 12 freely configurable channels) were implemented in TVN's sophisticated workflows. VENICE's structure and integrated features were very attractive to TVN – e.g. using VENICE as a VTR with intelligent batch ingest features.
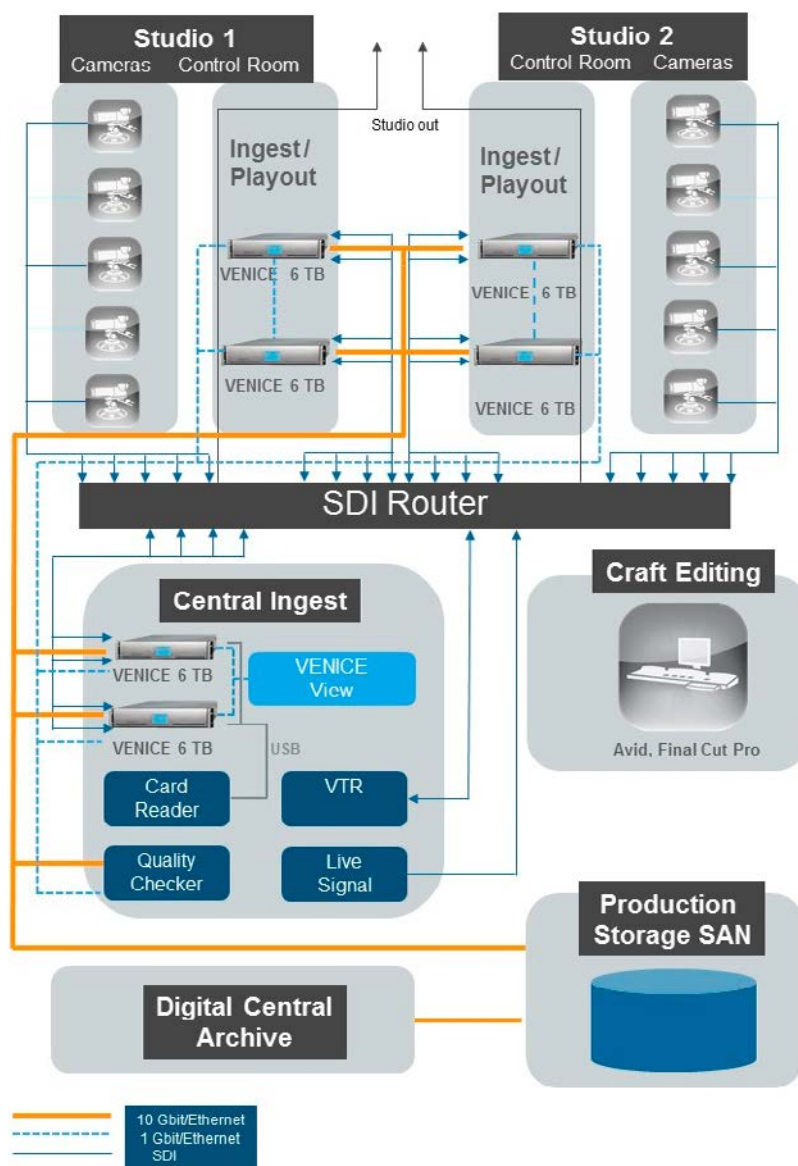
TVN was especially charmed with the Rohde & Schwarz DVS's philosophy of openness that allows for easy integration and flexible system arrangements – in the beginning and in the future as well.

TVN's main studio was equipped with two VENICE, each of them with 6 TB. Here, VENICE is responsible for both ingest and playout. When playing out, VENICE is used as the main source. The second VENICE then acts as redundant signal source. When the studio is used as production environment, VENICE processes the ingest files from all available cameras. The redundancy concept here is very successful, granting high flexibility and security.

This set of VENICE and its assigned tasks is mirrored in a second studio with an identical setup of control room and cameras.

Workflow example

Description

All VENICE systems are connected via 10 Gigabit/ Ethernet for high data throughput and via 1 Gigabit/ Ethernet for control. Together with SDI connections this grants maximum flexibility and security.

This, too, can be seen in TVN's central ingest. Here several systems are allocated, e.g. VTRs, card readers, a QC system, and, of course, the live signal. Two VENICE systems were implemented here with major tasks:

ı Ingest files from cameras

ı Ingest all other files, e.g. external material via USB or cards

ı Transcoding

ı Tape recording (ingest from VTR)

ı Recording of live programs

ı Recording of incoming live feeds

ı Recording of studio production isolated cameras

Again, TVN benefits from the flexibility of the Rohde & Schwarz DVS systems: VENICE allows for easy integration thanks to its connectivity options. Moreover VENICE enables TVN operators to freely switch between tasks, codecs and formats. The engineers in TVN's central ingest are able to decide if they want to use additional channels – e.g. from the VENICE systems in either studio 1 or studio 2. Having the same systems placed at both studio and central ingests allows staff to switch between workplaces easily – allowing TVN to run its staff very efficiently.

When accessing up to 12 channels operators need a good overview. This is why TVN decided for Rohde & Schwarz DVS's new multi-viewer application VENICE View. Being part of the VENICE software, VENICE View provides TVN with the possibility to monitor video overlay, channel name and status. Moreover, timecode information as well as audio peakmeter of every connected VENICE video channel is available as well.

TVN clearly benefitted from VENICE's main ideas: being open, flexible and future-ready, Poland's leading TV station was able to run an easy integration with VENICE, optimize its complex workflows and to profit from the redundancy idea put into practice. The file-based workflows in question are now running with state-of-the-art equipment and grant TVN the flexibility and security they were looking for in the first place.

Benefits

ı **Multi-format capability**

 · Simulcast: SD/HD operation in parallel

 · Integrated hardware scaler for real-time up- and downscaling

 · Simultaneous proxy file generation

ı **Numerous formats**

 · All relevant broadcast codecs such as Sony XDCAM® HD, Panasonic AVC-Ultra, Avid DNx-HD®, Apple ProRes, MPEG-2, etc.

 · Numerous file formats like MXF OP-Atom, MXF OP-1a, QuickTime®, TGA, TIF, DPX file sequences

 · Alpha channel support

ı **Sophisticated and comfortable multi-viewer software:** Concise monitoring of all available VENICE channels and their status

ı **Easy to use:** User interface with comprehensive feature set (playlists, data management, transcoding)

ı **Flexibility:** Complete openness to storage architecture

ı **Easy integration** into existing infrastructures thanks to complete openness to heterogeneous environments

About Rohde & Schwarz DVS

For more than 25 years, Rohde & Schwarz DVS GmbH has been very successful in the professional film, video post production and broadcast markets. The specially developed and manufactured hardware and software are applied to the production of popular TV series, Hollywood blockbusters and in Digital Cinema. R&S®CLIPSTER was the first system in the world to make real-time 4K processing possible. The future-proof ingest and production server R&S®VENICE offers a flexible solution for modern, file-based workflows in broadcast environments.

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