



StorNext &amp; Scalar Series

## StorNext Helps Leading Broadcaster Transition to All-Digital Infrastructure

When nc+ decided to go all digital, Poland's premier pay-TV provider wanted to save space, time, and money—and free up its production teams to focus on delivering quality content, not moving videotapes. Quantum's StorNext provided the right storage infrastructure to unlock all the benefits of the new system.

Resulting from a strategic partnership between Groupe CANAL+ and TVN Group, nc+ is the first and largest premium television provider in Poland, specializing in broadcasting a wide range of material across the country, including international films and live sporting events. The company recently decided to move to an all-digital, file-based system, taking advantage of broadcast technology advancements to transform its workflow, playout, and archive processes. The change was dramatic. nc+ threw out its dual-channel videotape-based system and replaced it with a multi-channel file-based workflow that can support up to 180 broadcast and on-demand channels, including 50 that broadcast in HD. In the process, the company streamlined and simplified the workflow for its entire team.

### VIDEOTAPE WORKFLOW SLOW AND MANUAL

The previous infrastructure at nc+ was based on working with videotape. Getting content ready to air meant bringing tapes in, doing linear editing to add local content, carrying out post-production, checking tapes, and manually transmitting the finished content to playout servers. This content was then archived on videotape for security and future re-use. The system was slow and manual for producing new material, and re-using existing content was a complex, time-consuming process. For every job, tapes had to be retrieved; editing to update content was all linear; and the manual ingest-to-playout process all had to be repeated.

### INTEGRATION IN A COMPLEX ENVIRONMENT

Major goals of the new system were to streamline the workflow for new and existing content, to reduce time for editing and post-production, to automate the transcoding process, and to make it easier and faster to support new, emerging platforms, including mobile devices. When it planned the upgrade, nc+

worked closely with SAD, a leading video system integrator with more than 20 years of experience in IT and nearly a decade as a specialist in designing professional broadcast systems. Based on SAD's recommendation, nc+ deployed an open systems media production and archive solution that integrated best-of-breed broadcast products from many different suppliers: AVID Media Composer editing, Baton QC quality control, Venice DVS, Aspera Faspex, Telestream Vantage transcoding and workflow management, K2 Grass Valley playout systems. Formats supported at launch included XDCAM HD422, MPEG4, and MXF file for archive.

### IMPLEMENTING THE END-TO-END CONTENT WORKFLOW

With the new solution in place, having an open systems-capable storage system that integrates access to content effectively across all the heterogeneous applications was critical to achieving workflow efficiency, making the selection of a storage infrastructure a major decision. After looking at all the alternatives, nc+ and SAD selected Quantum's StorNext® File System, StorNext Storage Manager, and StorNext AEL6000 Archives.

"Quantum StorNext is the center of the nc+ station," explains Jarosław Kordalewski, Executive Director for TV Technology & IT Systems at nc+. "Even though the editors and post-production teams don't see it directly—which is just the way it should be—it underlies the entire new end-to-end content workflow we put in place."

In the new nc+ system the StorNext file system controls 200TB of nearline disk archive, which is used to ingest all the file-based content, to hold low-resolution proxies, and to make content available to a dozen production, quality control, transcoder, and playout servers over a high-



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**Jarosław Kordalewski**  
Technology & IT Systems, nc+

### SOLUTION OVERVIEW

- Quantum StorNext File System, StorNext Storage Manager, and Partial File Retrieval (PFR)
- Quantum StorNext AEL6000 Archives
- Quantum Scalar i6000 Tape Library
- Avid Media Composer
- Baton QC
- Venice DVS
- Aspera Faspex
- Telestream Vantage
- K2 Grass Valley

### KEY BENEFITS

- Increases efficiency and speed of workflow
- Makes archive access fast and automated
- Eliminates videotape
- Improves overall production productivity by 30% over tape-based system
- Reduces work-in-process disk capacity needs
- Provides automated asset protection in the archive without use of backup software
- Provides end-to-end content workflow management

speed Fibre Channel link. In addition, with tens of thousands of hours of film, recorded sports video, and other content to store, nc+ uses StorNext Storage Manager (SNSM) software, which has enabled the company to avoid buying a larger disk pool. SNSM provides a tiered storage system with one common storage pool that combines the capacity of the nearline disk with digital LTO tapes in two StorNext AEL6000 Archives. In the archive, recent assets are all on disk, but SNSM moves older content to tape for longer-term storage, automatically making two copies of each asset for redundancy. Proxies for all the content remain on disk to make access fast.

"Not only does StorNext deliver the performance and reliability required, but it is also very scalable," says Kordalewski. "It is allowing us to efficiently and cost-effectively manage over 1.5 petabytes of digital assets today and will easily handle our expected growth of an additional petabyte over the next 12 months."

#### ACCESSING ARCHIVED CONTENT IS A FAST, AUTOMATED PROCESS

Even though storage in the StorNext archive is distributed between disk and tape, the editing, post-production, and transcoding tools see all the content through a single file-system interface. StorNext makes sure that content is accessed transparently from disk or tape, depending on its location, and it uses Quantum's timecode-based Partial File Retrieval (PFR) feature to speed up the process of moving content from the archive to production and playout servers. When the nc+ asset manager requests content, it uses timecodes to identify needed footage. Using PFR capabilities, StorNext

retrieves only the specific containers from the asset files that are needed for the task. Telestream Vantage, the transcoder, delivers the containers to Avid storage, at the same time automatically converting them to the format needed by the Media Composer and checking them into the Avid database. Partial file handling increases the speed of editing, post-production, and staging playout content, and it dramatically reduces disk requirements.

"Quantum StorNext works with the rest of the tools so well that it often delivers content from the archive to production servers in less than a minute—a job that could take an hour in the old system," says Mateusz Karolak, Presales Manager, SAD.

"There is no video track transcoding and the right parts of files are there immediately. Work gets done faster, and several slow, manual steps are eliminated. "StorNext has turned a complex job—finding the right files, extracting the right content, and delivering it in the right format—into a fast, automated process. We've calculated an overall production performance increase of 30%."

"StorNext and its AEL libraries were the keys to develop the multi-tier, virtualized storage environment which is optimal for managing the life cycle of broadcast content," reports Bartosz Sutek, SAD Sales Director.

"StorNext gives us fast access to all the content, and it saves us money by minimizing power, cooling, and other operational costs. We even reclaimed the space we used to use for videotape storage and turned it into our data center," reports Olgierd Dorn, nc+ TV Technology Director.

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**Mateusz Karolak**  
Presales Manager, SAD



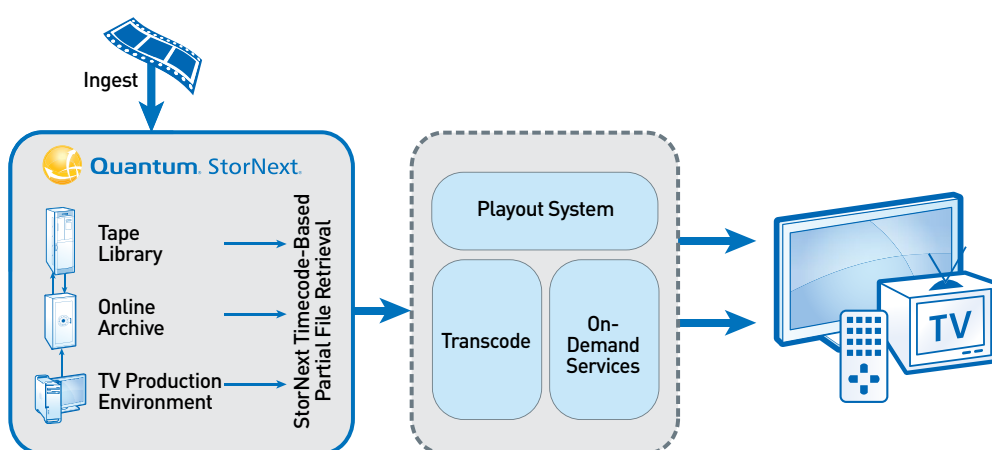
#### ABOUT NC+

Today's nc+, the result of a strategic partnership between Groupe CANAL+ and TVN Group, is the premier pay-TV platform in Poland, offering its 2.5 million customers up to 180 channels, including 50 in HD.

A full-service provider of broadcast and on-demand programming, nc+ provides the nation's largest selection of international films, including 500 motion picture premiers annually. It is also a leading supplier of live sports events, including European football, international basketball, auto racing, rugby, tennis, and boxing.

#### ABOUT SAD

SAD is recognized for its leadership in bringing advanced technology to a broad range of end-user requirements. The company was privately founded in 1991 as the exclusive representative and distributor of Apple Inc. products in Poland, with expertise in both the consumer and professional markets.



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