

NCME MOVES PLAYOUT IN-HOUSE WITH ROHDE & SCHWARZ TECHNOLOGY



At a glance

Japanese language broadcaster NHK CosmoMedia Europe (NCME) offers two premium channels for audiences in Europe, the Middle East and North Africa. It wants to bring the playout of these channels in-house, to achieve operational savings through a high degree of automation while maintaining the highest levels of availability.

The Rohde&Schwarz solution combines Pixel Power Gallium workflow orchestration, StreamMaster content processing and delivery as well as SpycerNode high-performance storage into a seamless end-to-end solution, capable of secure remote access.

Executive summary

- ▶ **Customer:** NHK CosmoMedia Europe (NCME)
- ▶ **Task:** build a new playout center for two international channels
- ▶ **Challenge:** provide a unified, tightly integrated, highly automated and flexible media environment from ingest to playout capable of being managed and operated remotely from a variety of locations at great distance
- ▶ **Solution:** Pixel Power Gallium, Pixel Power StreamMaster and SpycerNode
- ▶ **Key advantages:** modular software architecture allows reconfiguration and thus new functionality at any time; extremely high reliability including zero downtime servers

Case Study | Version 01.00

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Customer

NCME is an affiliate company of Japan's public broadcaster Nippon Hoso Kyokai (NHK). It provides premium television content in Japanese to audiences in Europe, the Middle East and North Africa. NHK is widely recognized for its pursuance of the highest technical standards. It is vital that the two channels provided by NCME, JSTV 1 HD and JSTV 2 HD, are delivered to satellite and over-the-top (OTT) viewers at high quality, securely and reliably.

Solution

Pixel Power Gallium and Pixel Power StreamMaster are modular software technologies, built from functional blocks that combine to create precisely tailored media workflows. This flexible approach allows systems to be quickly established to meet requirements, and later expanded and modified to add new capacity and functionality as required. For instance, new codecs can be licensed when needed.

Gallium delivers workflow orchestration and automation, while StreamMaster provides media processing involved in channel delivery. In a typical workflow, Gallium might determine the graphics requirements for a particular event, and then derive and deliver the metadata to StreamMaster to render the graphics at the point of broadcast.

Because they are software-defined, Gallium and StreamMaster enable flexible system configuration to deliver many workflows simultaneously. These workflows can be linear or non-linear, and in a typical playout center both will be required. Playing out content and adding real-time graphics under automation control are critical activities and are prioritized to ensure the ultimate channel reliability.

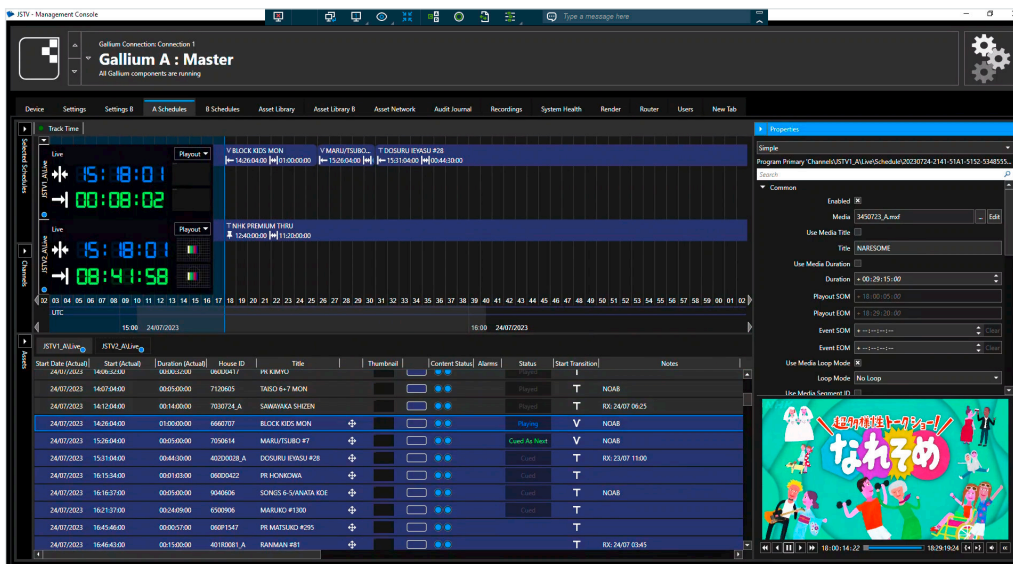
Typical non-linear workflows include producing missing media reports and automatically rendering playout content for file based delivery. Gallium also interfaces with external data sources and monitoring systems, distributes content to the StreamMaster playout devices and manages archiving and retrieval.

While StreamMaster is generally used in real-time mode, ingesting and playing back media, rendering graphics and inserting subtitles, it can also deliver non-linear workflows. Complex, graphics-heavy promo sequences can be seamlessly rendered into ready-to-air packages at speeds many times faster than real time.

Gallium and StreamMaster are fully virtualizable, and may be deployed on local COTS hardware, or within virtualized or cloud based environments. In the NCME application they are located in a data center, with content and schedules remotely delivered live via satellite from Japan and via multiple internet routes from the UK and USA.

Content storage is a key element of the system. The SpycerNode is designed for high-performance, high-availability applications with multi-channel playout as an obvious use-case. It offers a scalable storage architecture, with up to petabyte capacity in a single node and the capability to link nodes together into clusters with higher performance or simply a single namespace.

The highly specialized functionality developed for SpycerNode by Rohde&Schwarz is built on the high-performance computing (HPC) architecture from IBM. Specifically, this includes the IBM Spectrum Scale™ file system, which presents all storage tiers under a single namespace, and uses state-of-the-art erasure code



Management console of Pixel Power Gallium

“Through collaboration between NCME engineers and Rohde & Schwarz workflow specialists, a system was defined using a proven standardized technology platform which was versatile enough to be configured to meet all our exacting operational and commercial requirements, and yet could still be implemented quickly and cost-effectively.”

Steve Palmer, Chief Technical Manager, NCME



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redundancy for ultra-fast disk rebuilds and exceptionally high availability (mean time to data loss measured in thousands of years).

A novel use of Pixel Power Gallium software for NCME is the creation of daily unattended ingest recording workflows. A record list is created remotely and posted to Gallium, which then checks it and automatically sets up a series of recordings to ingest the content transmitted 24/7 from Japan into individual clips. These are archived on the mirrored SpycerNode storage system and then become available as the source material for same day and future broadcast schedules.

Gallium also scans and registers new content automatically, enabling users to easily check and retrieve content and optimize storage usage via the built-in content management system.

Gallium autonomously records NHK's own transmissions delivered via two satellite paths. This process produces two continuous series of thirty-minute chunks, which can then serve as a backup media resource. Recorded programs of any length can then be recreated by simply stitching together sequential chunks using a dedicated Gallium workflow and the StreamMaster rendering engine.

This process ensures that any missed NHK derived content from the planned recording schedule can still be recovered after the original transmission.

Conclusion

“Pixel Power Gallium, Pixel Power StreamMaster and SpycerNode are fundamentally designed to be agile and flexible, configurable to meet precise user requirements, and readily adaptable and extendable as those requirements develop,” says James Gilbert, Director of Products and Solution Management at Rohde & Schwarz, Broadcast and Media.

NCME set out to bring its complex ingest and playout operations for the JSTV channels in-house, while maintaining the highest possible standards of quality, availability and viewer satisfaction.

“Remote working was a key requirement, with content management, ingest, processing, graphics and delivery controlled seamlessly by remote-working staff that are all more than 1000 km from the location of the system itself,” explains Steve Palmer, Chief Technical Manager of NCME.

The result is a high-performance solution which is fully future-proofed and performs 24/7 with zero downtime.

SpycerNode

- ▶ High performance file system and comprehensive redundancy mechanisms
- ▶ Leading IOPS performance and throughput
- ▶ 100 Gbit/s interfaces
- ▶ Production asset management (PAM)
- ▶ Massive scalability even from the smallest system



SpycerNode 2u12 storage server.

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