Modernising European Media Operations with BNCS

Atos

Overview

A major European media organisation embarked on a large-scale transformation project to refresh its production and playout systems across multiple territories. The goal was to enhance production efficiency and resilience with centralized control, while introducing a modern, flexible architecture capable of supporting both current and future broadcast demands.

The initiative leveraged IP-based technologies such as SMPTE 2110 and AMWA NMOS, enabling operators to control and monitor equipment across Europe from centralized operational hubs. The system supports seamless multilingual operations and integrates both HD and UHD formats across a wide range of markets.

The Approach

To meet these challenges, the organisation deployed BNCS as its unified broadcast control and orchestration platform.

Architecture and Scale

- Dual hub architecture provided enhanced resilience, ensuring continuous operation even during network interruptions.
- The BNCS system spans two technical hubs, 19 markets, and over 900 operator workstations, each capable of independent operation thanks to distributed configuration copies and N+1 redundancy.
- The virtualised infrastructure, including BNCS clients, is accessed remotely via RDP from thin-client workspaces, allowing flexible access and resource allocation across Europe.

Advanced Routing and Control

- BNCS provides advanced routing control with SDN integration through a direct API connection to the orchestration layer (e.g. VideoIPath), enabling resilient and intelligent management of SMPTE 2110 flows.
- The system handles tens of thousands of sources and destinations, managing active routes across multiple formats and inter-site connections.
- Cluster-based architecture with queue prioritisation ensures high reliability and broadcast continuity.

Packaging and Device Management

- The BNCS Packager application enables operators to collate signals and route them efficiently, simplifying complex routing into intuitive X-Y operations.
- Integration with automation systems supports ingest and playout workflows, while dynamic tagging allows precise control of video, audio, ANC, and intercom routing.
- BNCS interfaces with a diverse set of devices — including audio codecs, encoders, processors, multiviewers, and SDI routers — all through a single, unified operator interface.

Compressed Stream Management

- The system includes efficient compressed stream management through BNCS's Compressed Stream Manager, allowing traditional multicast routing across the WAN.
- Thousands of compressed sources can be routed into hundreds of decoders, enabling flexible remote contribution and monitoring.

Workspace and Configuration

- Operator workspaces are resource-agnostic: production resources are allocated dynamically from the technical hubs, optimising utilisation and reducing idle infrastructure.
- JPEG XS encoding is used for remote monitoring, all controlled through BNCS interfaces.
- Configuration management is handled through structured data updates, enabling continuous refinement of workflows and devices.

Challenge

The organisation needed a way to unify complex operations spanning multiple countries, languages, and delivery platforms. Traditional control systems were no longer sufficient to manage such scale, nor could they offer the flexibility required for large-scale live events. The team aimed to deliver:

- Reliable routing and orchestration across diverse IP infrastructures
- Efficient management of compressed and uncompressed streams
- Consistent, centralised visibility and control for multiple operational teams
- A future-ready foundation to support evolving workflows

Results

The project revolutionised media operations, enabling the organisation to deliver large-scale live coverage across Europe with improved speed, stability, and adaptability.

- Enhanced production efficiency and resilience with centralized control
- Flexible resource allocation and comprehensive device control across multiple hubs and territories
- Seamless multilingual support for more than 20 languages across dozens of markets
- Advanced routing control with SDN ensured reliable, scalable broadcast operations
- Future-proof infrastructure supporting both IP and compressed workflows

With over 2 million routing actions processed during a single major event and coverage extending across thousands of live feeds, the system has proven its capability at scale. This transformation has positioned the organisation at the forefront of modern broadcast operations — ready for the continued evolution of media technology.
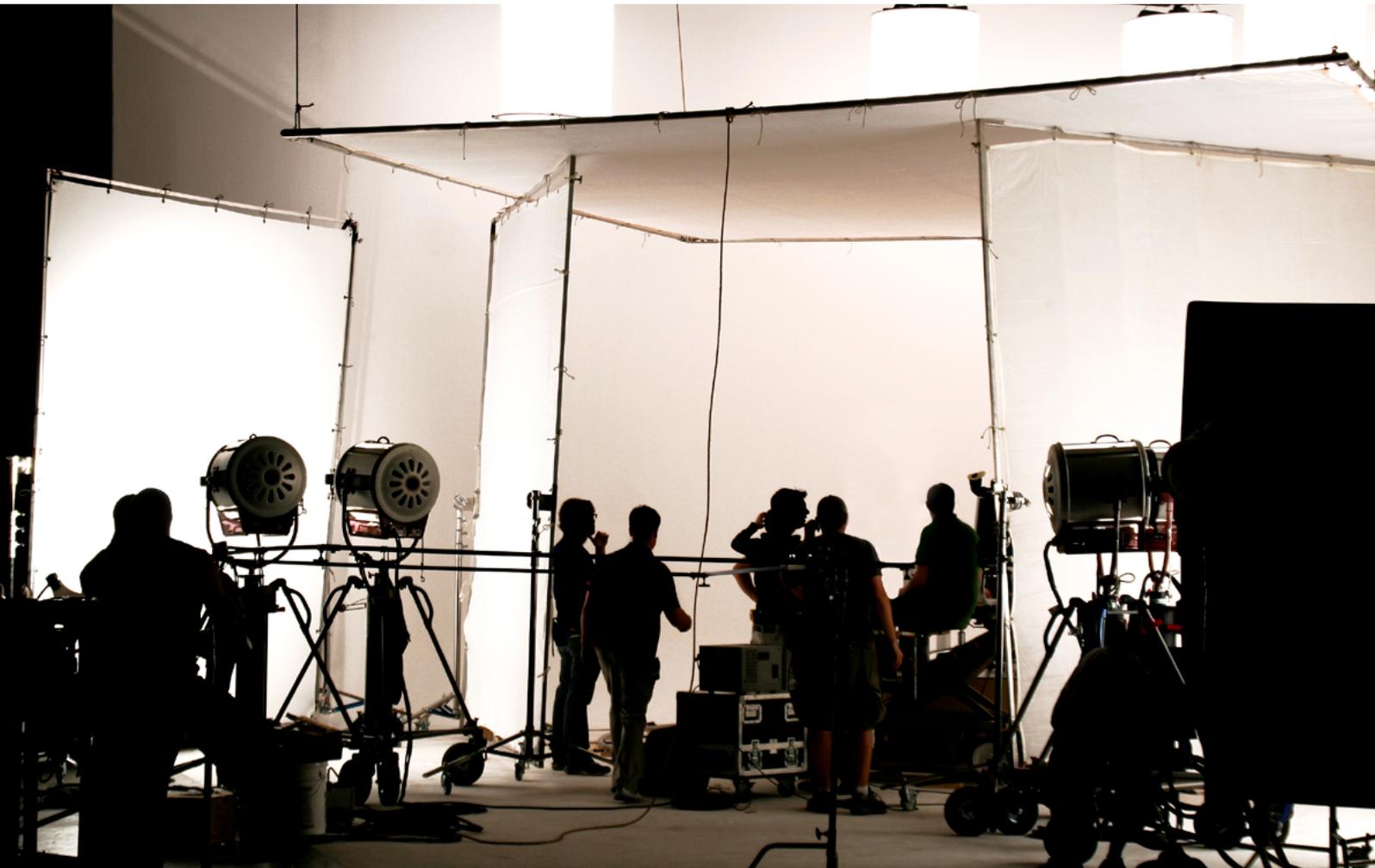
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