

Networked Broadcast Monitoring System

Connect once, display anywhere



Barco's Networked Broadcast Monitoring System (NBMS) enables operators to monitor broadcast processes and visualize video in real-time anywhere in the facility or from any another location. This innovative solution allows high-quality, low-latency distribution of video sources and metadata over an IP network towards multiple screens, even in separate control rooms, hereby offering ultimate flexibility for broadcast and distribution monitoring. As such, Barco's Networked Broadcast Monitoring System goes beyond the functionality of a traditional multiviewer, towards enterprise-wide monitoring.

BARCO

Visibly yours

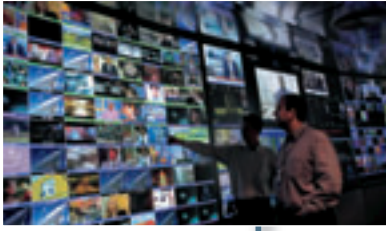
The power of networked visualization

In modern broadcasting environments, the number of images that need to be viewed and controlled simultaneously is increasing dramatically. Broadcast editors, production staff, master control operators and distribution control managers all need to be able to view and control multiple sources at the same time. With Barco's NBMS, the IP network is the backbone for all these operations. An approach that offers many opportunities for broadcast and distribution monitoring.

Transporting high-quality audio and video over IP is more than just a new technology approach. In fact, it requires a complete rethinking of the way broadcast facilities operate today. From a network-centric point of view, a facility is no longer regarded as an amalgamate of studios and control rooms with their individual needs, but as an integrated facility where all video and audio needs are considered for the total facility, with the network as backbone.

Production





Distribution monitoring



Ingest/playout room



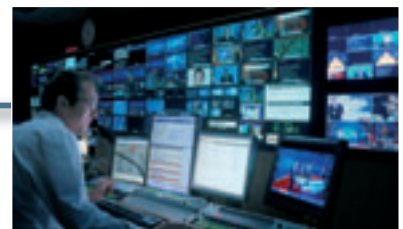
TV production center



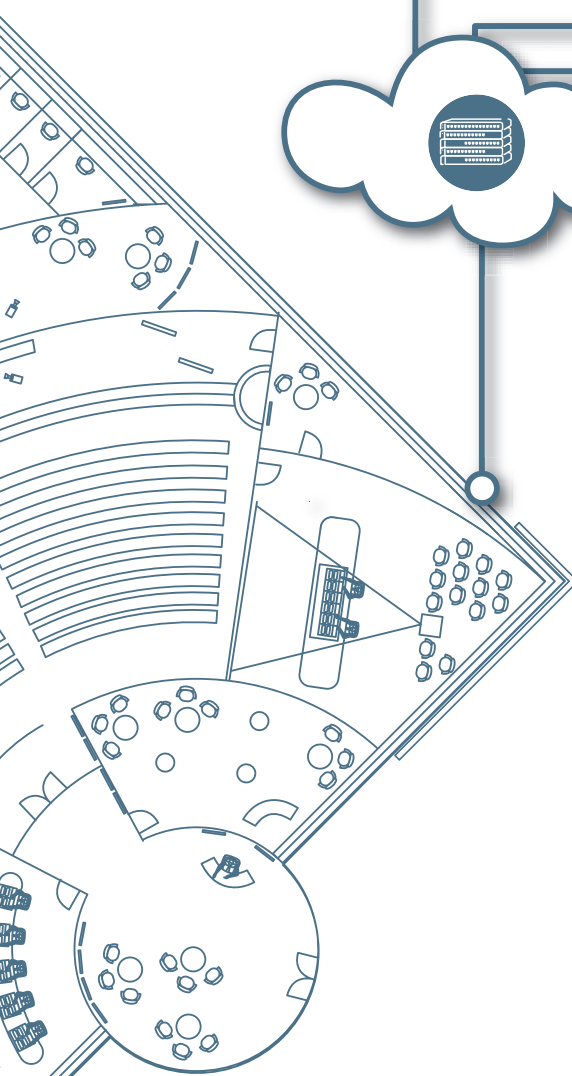
Audio



Master control room



Gallery



Why choose Barco's networked broadcast monitoring system?

- Monitor and visualize your content from **anywhere** in the facility.
- Easily monitor your sources over **large distances**.
- **Expand** your system with any type and **any number of inputs and outputs** in a **cost-effective** way.
- Present your content on **any display**, from desktop PC to video wall.
- Visualize **any source format**, from thumbnail to full HD size.

NBMS,

the monitoring solution for:

- TV production centers
- Master control rooms
- Playout centers
- Distribution monitoring centers

Connect once, display anywhere

Facility-wide access to content

Barco's networked broadcast monitoring system enables operators to monitor their broadcast processes and visualize video content in real-time **from anywhere in the broadcast facility**. The distributed architecture of the NBMS enables video to be captured once, on any location, and distributed and **displayed as many times** as required in any location. In other words anyone is able to view program content anywhere **from any screen**. For example, a sports reporter could see a live feed of a football game at the same time as compiling and submitting up-to-the-minute reports from a laptop computer. The reporter could even view multiple live games and report on them at the same time.

NBMS is specifically designed to support **high-quality, low-latency distribution** of video sources and metadata over an IP network to multiple screens – providing flexible, **cost-effective monitoring** for broadcast and distribution. Hereby, NBMS capitalizes on JPEG2000 compression technology, which allows to efficiently transmit high-quality images with low latency, a critical consideration for live broadcast applications.

Monitoring over large distances

With Barco's networked broadcast monitoring system, sources are streamed over a classic multicast IP network, so distance does not matter anymore. NBMS even opens up the possibility to remotely monitor studios, broadcasts, head-ends, remote transmitter sites, or to make use of back-up sites or follow-the-sun control center operations.



Complete system control. A continuous overview of all devices in the network.

Barco's NBMS solution consists of:

- **High-quality rear-projection modules or LCD panels:** A single screen is capable of simultaneously displaying multiple sources together with related metadata, audio metering information and computer applications. Two or more modules can be combined into a huge display wall to monitor hundreds of signals.
- **A networked hardware platform** consisting of source capturing units, the interconnecting IP network and display generating units. All components are designed as standard rack-mountable chassis.
- **An NBMS software package** allowing complete system control and accessible from any system network connection.





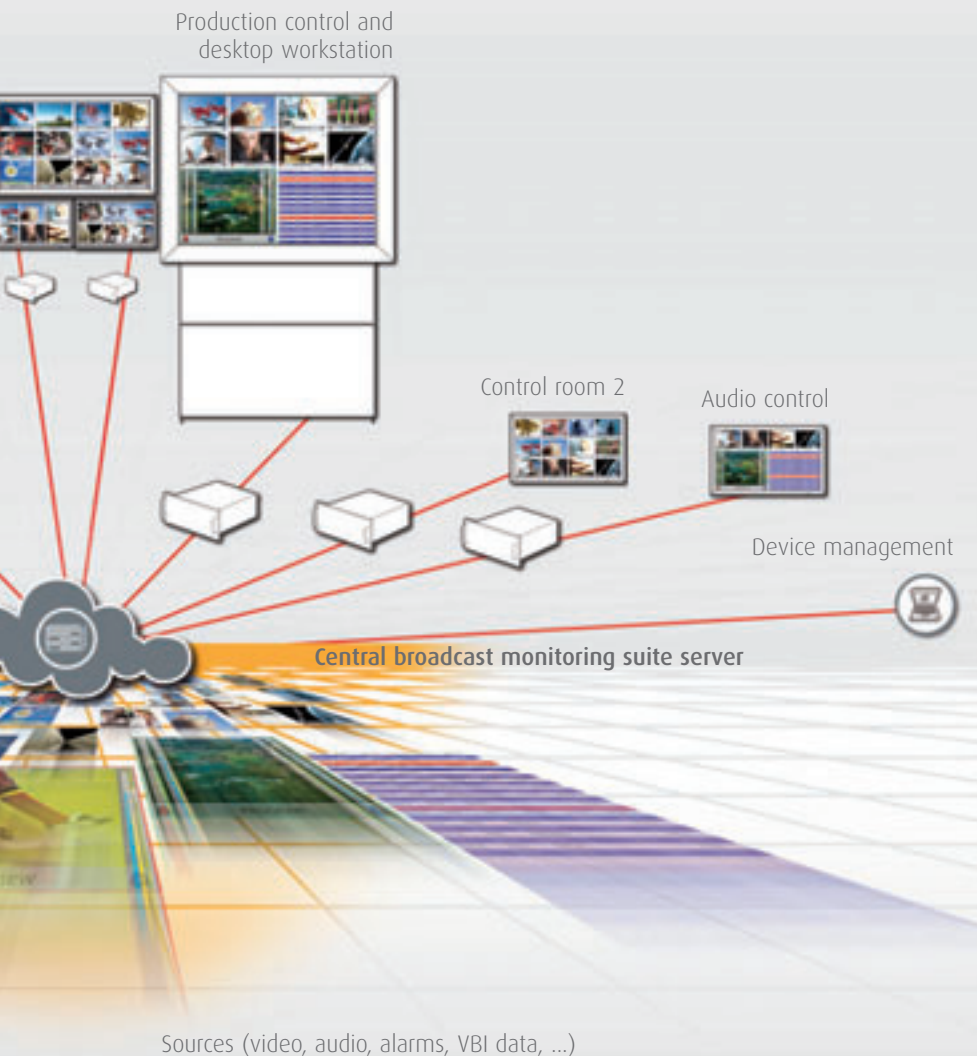
No limit on number and type of inputs

Scalability without losing flexibility

Traditionally, broadcast monitoring and management solutions have been built using industry-specific, often proprietary, dedicated systems, requiring specialist skills and expertise. Control rooms required a variety of input cards, for example for analog, SDI, and HDSDI video signals. These are collected and then distributed using dedicated AV routers and cabling to multiple screens in the control room and outside. This kind of system is not only costly to build, it is also difficult and costly to reconfigure and expand whenever changes are needed.

Barco's networked broadcast monitoring system breaks down the traditional AV equipment functionality and enables complete solutions to be built using intelligent displays, high-performance encoders/decoders, and management and control software built on industry-standard IT infrastructures. This enhances the flexibility, scalability and reach needed in today's broadcast environments at significantly lower cost. There is no limit on number of inputs or outputs. No recabling is required when adding sources or displays or when changing the configuration.

Networked visualization also allows for easy integration with third-party systems, such as routers, automation and monitoring systems.



Source presentation on any display

Barco's NBMS allows for more flexibility as to where the source needs to be displayed. From small PC workstation to large video wall, NBMS can present scaled content for any type of display with a high granularity.

The NBMS network can include any member of Barco's full family of display solutions, including the LC series of wide-screen LCDs and Barco's OV-D2 video wall series.

Content monitoring without boundaries



Templates are an ideal tool for rapid and flexible layout creation.

Monitoring on PC

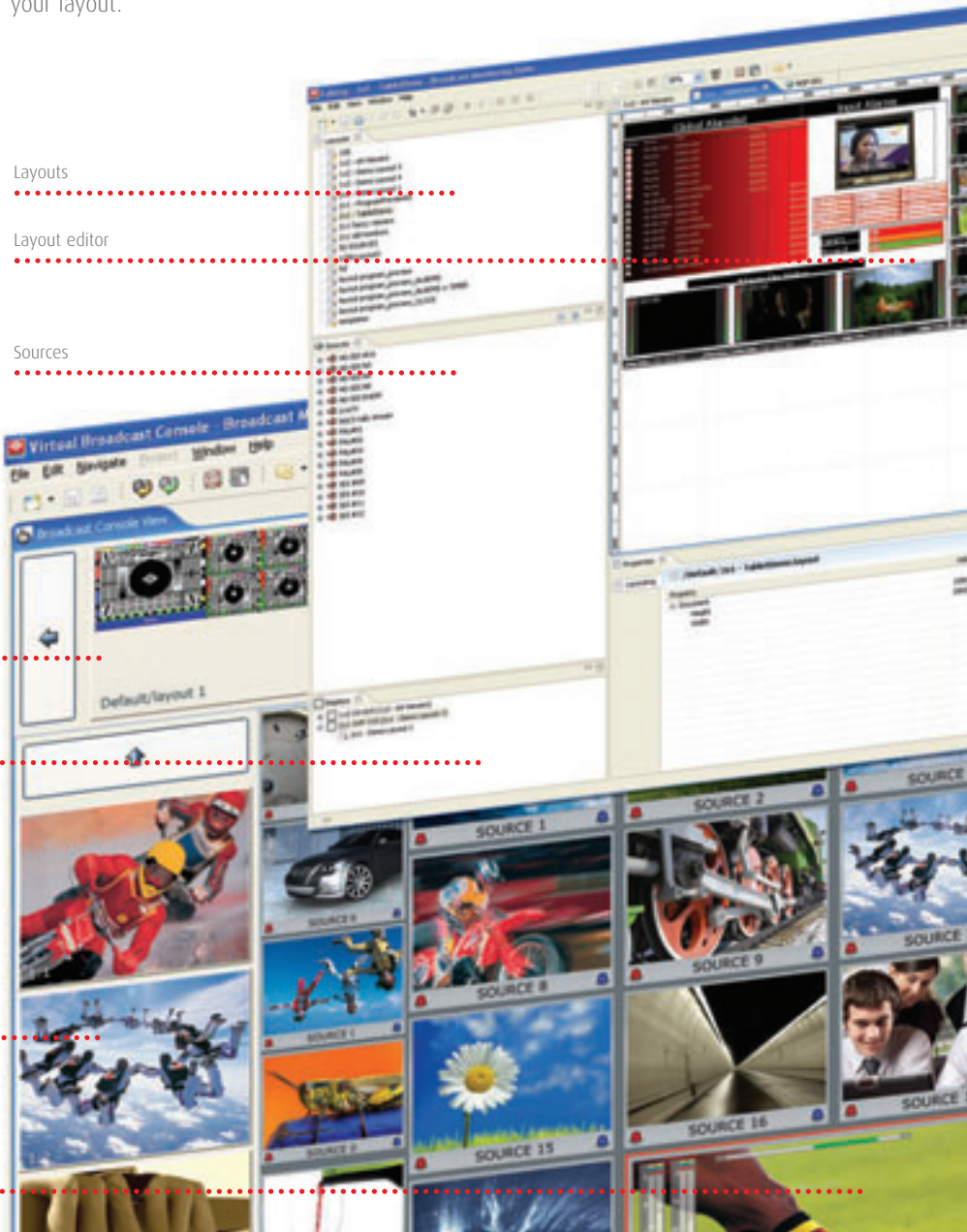
With the encoded video sources available on the visualization network, a powerful PC, or one equipped with a dedicated J2K decoder card, can simply present the video content at high quality and low latency by means of any viewer (e.g. Windows Media Player). This enables technical directors and chief engineers, etc to monitor sources from their desktop.

Smart layout creation

NBMS makes use of a rich set of predefined layout templates, which allows operators to save time and be more efficient when creating layouts. You can also build your own templates by combining video displets, UMDs, tallies, audiobars, etc. into one view, arranged according to personal preference. Templates are inherently re-usable, which makes them an ideal tool for rapid and flexible layout creation. Instead of creating a specific layout for each video image, you can use templates to create a compound, and drag and drop all the necessary displets to your layout.

Operator console panels

Next to the possibility of creating custom operator control panels, NBMS also offers a number of standard predefined control panels, viz. the device control console, edit console and Virtual broadcast console.



Layouts

Layout editor

Sources

Wall & layout selection

Displays

Source selection

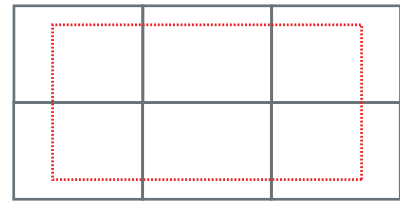
Virtual Broadcast Console

Alarm management

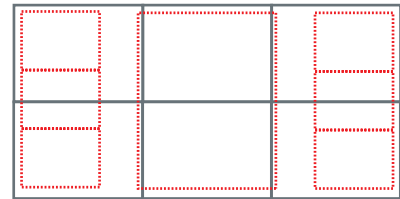
As a quality monitoring solution, Barco's NBMS allows to visualize and handle alarms based on internal and external notifications. A wide range of alarms can be handled, including hardware alarms, source alarms, GPIO alarms and software alarms.

Flexible display management

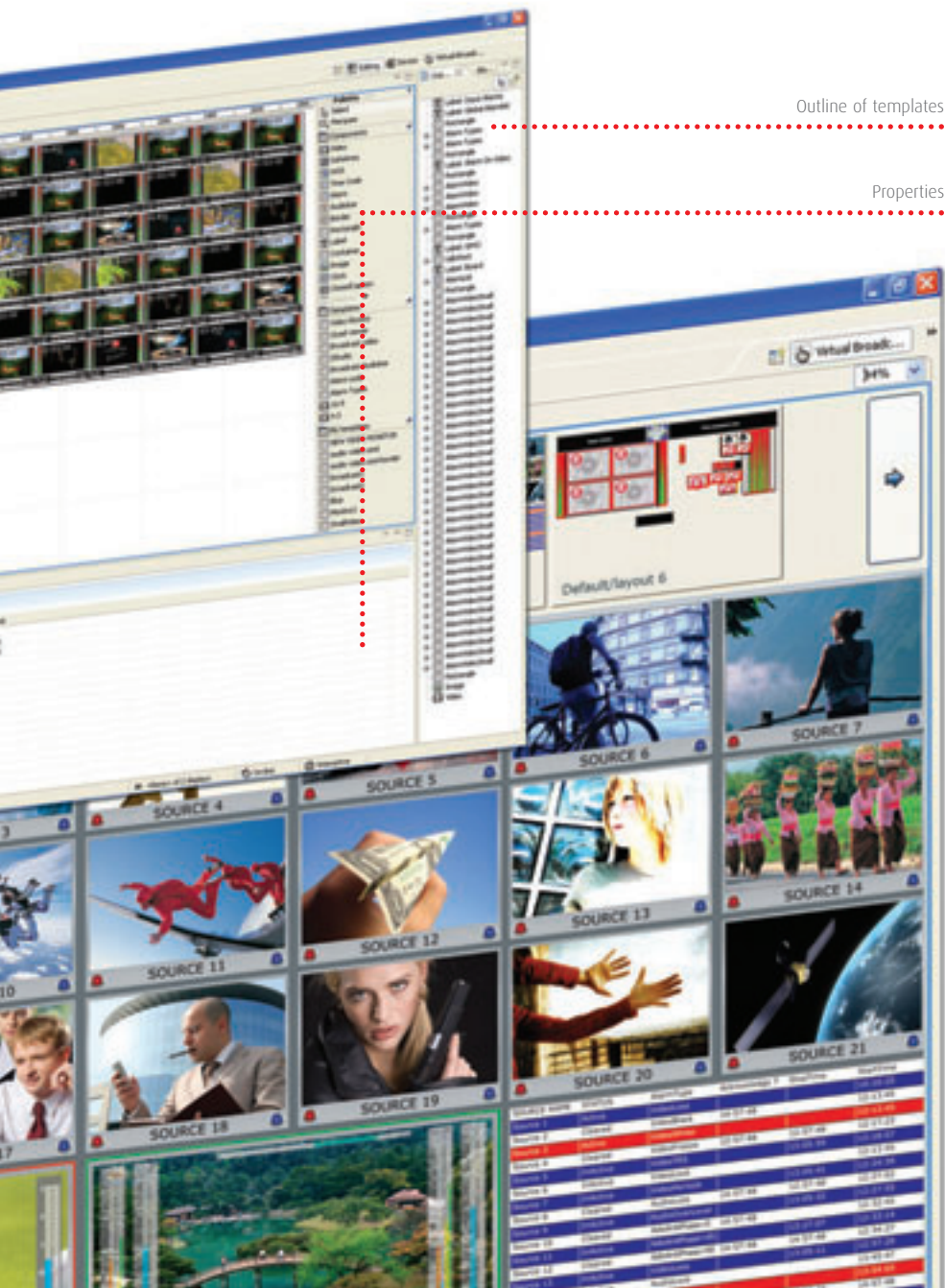
Be it with an LCD display or a complete projection system, display management today is based on working with walls instead of single screens. A display wall can consist of a single screen or a number of single screens. This extends the possibilities. For example, you can display one video source across multiple single screens. On the other side of the spectrum for example, displays connected to multiple controllers, can be managed as one large display wall.



One video source can overlap multiple screens in a video wall.



Multiple screens, connected to multiple controllers, can be managed as one large display wall.



Outline of templates

Properties



System redundancy

The NBMS system hardware platform offers high redundancy: redundant networking based on Ethernet technology, duplication of the central processing machine and N+1 redundancy on the output modules when combined with dual input projection modules.

High serviceability

The NBMS system hardware platform comprises a rack-mountable chassis, featuring redundant power supplies and integrated shelf-management module, and is equipped with hot-swappable auto-sensing input boards supporting both standard and high-definition video feeds.

Available system components:

Source capturing units:

- NGS-101 - 8x HD-SDI/SDI Video encoder – scaled HD
- NGS-103 - 8x SDI/Composite video encoder
- NGS-104 - Synchro card genlock, LTC/VITC, RS232/485
- NGS-105 - 4x DVI/8x HDMI RGB encoder (without HDCP)
- NGS-107 - GPIO interfacing
- NGS-108 - MPEG2/H.264 transcoder
- NGC-110 - 10-slot 19-inch rack-mountable housing
- NGC-105 - 5-slot 19-inch rack-mountable housing
- Shelf manager
- NGM-164 - Networked audio metering unit

Display generation units:

- NGP-001 - display controller
- PC Barco player
- Windows Media Player plug-in

Management:

- BMS server
- BMS client

Displays:

- LC-42 - 42-inch High Definition LCD display
- LC-47 - 47-inch High Definition LCD display
- LC-5621 - 56-inch quad full HD LCD display
- OV-D2 - rear-projection video wall displays
- Any other DVI type of display



Innovation in broadcast visualization

Broadcast companies worldwide have chosen Barco's visualization solutions for their monitoring and studio needs. Be it for TV shows or news studios, broadcast or distribution monitoring rooms, screening, training or post production environments, broadcast professionals know that Barco offers technology they can trust. Barco's commitment to quality, extensive R&D efforts and proven flexibility towards customers' needs guarantee that their investment is ready for the future.

Next to reference monitors, Barco also offers networked multiviewers, DLP- and LED-based video walls and large-screen LCD monitors, all delivering the most accurate, color-calibrated images.

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Barco is an ISO 9001 registered company. The information and data given are typical for the equipment described. However any individual item is subject to change without any notice. The latest version of this product sheet can be found on www.barco.com.

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