Automatic and Reliable Transmission

The Bandeirantes Group has begun the installation of a large transmission infrastructure to be completed by the end of the year and is based on solutions from Pebble Beach, Ardendo, NVision, Miranda, Omneon and Vizrt. The new control room will manage 30 channels from the company headquarters in Morumbi, São Paulo.

Bandeirantes' transmission infrastructure is being completely renovated and will be integrated into a new department created for managing all the channels of the Bandeirantes Group. The heart of this new department is Pebble Beach automation, which promises more reliability, agility and an unprecedented degree of automation.

Once the system is 100% complete, it will control more than 40 playlists, including 30 analogue and digital channels of terrestrial TV (Channels 13 and 21), Pay-TV services (Band News, Band Sports and Terra Viva) and 10 News channels.

Each playlist has resources to place on-air an independent channel like Canal 13 (analogue) and 23 (digital), or Canal 21 (analogue) and 22 (digital) - the frequencies of TV Bandeirantes and Canal 21 in São Paulo.

Already 10 playlists are being used for the production of live news. In this case, the newsroom system (AP ENPS) sends the rundowns to the Pebble Beach automation system via a MOS interface, and the automation plays out, event by event, the rundown's content. Each production seat has an individual workstation to control the system.

For the commercial channels the new system uses the concept of regional playlists. Each channel can have associated with it various channels featuring different advertisements and local content working together in synchronisation. Thus, during a commercial break in São Paulo, the system transmits in parallel different breaks for other regions and is all managed from a single, integrated operation optimising resources.

Automation

Pebble Beach also controls the video servers, routers, mixers, VTRs and the 3D graphic systems.

The integration with the 3D branding system is done via network allowing the preview of templates and effects directly from the automation's Clients. This enables editing and previewing graphics in real time during transmission. It is as if the automation operator were working directly with the monitor of the branding system.

According to Marcelo Blum, engineer of Videodata and one of those responsible for the implementation of the project, this feature is a great advantage "because it is very common that all graphic resources are managed manually and as such subject to errors. In some cases, when automation is used, the commands are usually complex and incomprehensible to the operator of the automation system.

According to Rubens Ortiz, Band's Engineering Director, "The first phase of the renovation of technology should be finished this year. For the next year it is planned to implement the production and transmission of the 5.1 audio multi-channel system, which will be used for the 2010 Football World Cup and to invest in renewing the technology and digitisation of the other main transmission sites of the network".

With this new technology offered by Pebble Beach, the operator can preview the graphics before they go on air, enabling adjustments and corrections. When the automation controls the graphics, it creates a standardisation as the graphics estimated start and end times, yet the operator can change content when necessary".

The Pebble Beach system has direct access to the near-line storage system and automatically moves the edited content published by post-production to the transmission video servers, transcoding content automatically. Pebble Beach uses a unique process of automatic "reprioritisation", which dynamically changes the order of media transfers according to the playlists, which are fully monitored in real time.

This system will be able to send in real time the programming information to keep updated the EPGs (Electronic Program Guide) during digital transmission.

Agility and Flexibility

Although the new system will be highly automated and will provide a standardisation of graphics, agility is still guaranteed allowing interruptions to the schedule – for example, a film may be interrupted at anytime by a news bulletin and then returned back to the exact point with just one click of a button.

"The system offers a series of timers displayed directly on multi-image monitors, counting down the time to the next live event and to the next missing event" explains Marcelo Blum. "The system shows in real time the exact start time of each event, how much is delayed or how early it is in relation to the original schedule, allowing for adjustments quickly and easily" he added.

Full Redundancy

For the main channels, content is transmitted simultaneously by two video servers (mirrored operation Air Protect) and for the other channels, content is protected by the innovative concept of the redundancy N+n, whereby the number of backup ports in the video server is fewer than the main transmission ports. This

ensures that if a port fails, the system will allocate another port to continue transmitting from the point where the failure occurred.

The transmission servers are mirrored and work in synchronisation. If one server should fail the other is already running the same playlist synchronously. The database is also mirrored in real time with automatic changeover in case of failure.

The Pebble Beach solution allows adding new features and functionality or upgrades and the reconfiguration of modules individually, without taking the system off air and without the need to recompile the software. This is crucial in environments with increasingly complex workflows and that operate continuously 24x7x365.

In the following interview, Rubens Ortiz, Band's Director of Engineering, explains what motivated the broadcaster to upgrade its operations and the main characteristics of the new system.

Produção Profissional: The channels that make up the Bandeirantes Group are being subject to a big technological renovation. What are the highlights of this process?

Rubens Ortiz: The first is the transition to high definition production and the consequent transmission of content in digital form, and the second is the production of content without the use of tapes, known as "Digitalisation Tapeless". As a consequence of these changes, the Group has invested heavily to improve the branding equipment, which has brought about a considerable improvement on finished productions. This includes the deployment of last-generation virtual studios from Vizrt. We have also acquired infrastructure equipment such as NVision/Miranda routers, TV Logic monitoring, Sony/Thomson cameras, production switchers from Ross Video, Harris glue, Omneon video servers, Ardendo Media Asset Management, Pebble Beach automation and outside ingest in P2 format using Panasonic camcorders.

PP: Why it was necessary to adopt an automation system?

RO: With the use of servers in both production and transmission, it is required to have an automation system both for transmitting programs and commercials, and for transmitting material for the news and entertainment programs that make up the channel. This was the main reason.

PP: Which advantages the adopted system brought to the Group?

RO: This first is that the system provided by Pebble Beach has been integrated with the Ardendo MAM system that Band also adopted. This technology combination is used by other prestigious broadcasters in the world, and operates impeccably well, as we could verify in Sweden and the USA. This integration is fundamental to ensure that all media produced is transmitted without problems within our workflow. The second fact is that the transmission system in its entirety, from master control to transmission of promos, commercials and produced programs, and to news transmission using MOS interface, all of this is also available in the newsroom ENPS system which Band also utilises. This integration offered by a single vendor was a fundamental factor to select Pebble Beach.

PP: Which are the channels controlled? The radio stations are also included?

RO: All the channels located in Morumbi will be controlled in the first phase; in other words: Band Channel 13, Band Channel 23, Band Satélite Digital HD and SD, Band News, Band Sports, Rede 21, Terra Viva, Canal 50, Band International and Band News International. In a second phase, we will implement the system to other transmission sites of the Group, such as Rio de Janeiro, Brasilia, Belo Horizonte and others. The radio stations are already digitalised using servers and we are currently studying implementing an automation system.

PP: Can you explain the automatic workflow?

RO: The basic workflow of the operating system begins with ingest of content, which can be done through video and audio, as in the case of internally produced media, and receiving external feeds or copying P2

files, or through internal contribution via FTP amongst the different sites of the Group. We can also ingest from VTR tapes commercials or programs produced by third parties. Once ingested the media is transcoded to low-res MPEG-4 and high-res HD and is edited using low-res Easy Cut stations from Ardendo or using Final Cut NLEs. The edited media is stored in a MediaGrid from Omneon. The editing, depending on the complexity, can be done in both systems. Once edited, the content is available for transmission in the production video servers via Pebble Beach, which interfaces with ENPS, or is made available for transmission using the transmission video servers in the case of programs, films and others. For commercials and programs produced by third-parties, the content is simply ingested and made 'transmission ready'.

PP: Did the vendors help to integrate each system or was it done by a single integrator?

RO: The main integrator of the workflow was Ardendo as it has to manage the media from ingest to archive in LTO data-tapes. Obviously there was involvement from other vendors such as NVision, Miranda, Omneon, Pebble Beach, Vizrt and others because their cooperation is fundamental to ensure the system works according to plan.

Each workstation has dedicated panels for ingest and transmission, with tools for the database that allow running complex queries where results can be quickly inserted into the playlist.

PP: Explain the overview role of Neptune, the system from Pebble Beach.

RO: Neptune is responsible for the accuracy and synchronisation of the different sources of signals and the transmission channels. It controls the mixers and routers supplied by NVision and the Omneon servers, so it is a fundamental instrument for a successful operation and a perfect integration with the process managed by the Ardendo MAM. It also provides the means to transmit playlists using the MOS protocol.

PP: Does the system support adding new devices and new channels?

RO: Without a doubt. The system relies on its initial design with 4-channel backup and allows yet the addition of new channels and new equipment, simply by adding an extra device controller and new playlists. •

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