# Botswana TV

## AFRICA'S FIRST FULLY DIGITAL TV STATION MIGRATES TO HD WITH TSL BROADCAST CONTROL SOLUTIONS

### Dega Broadcast Systems Implements New Technology Platform Based on TSL's TallyMan Virtual Panels for Botswana Television

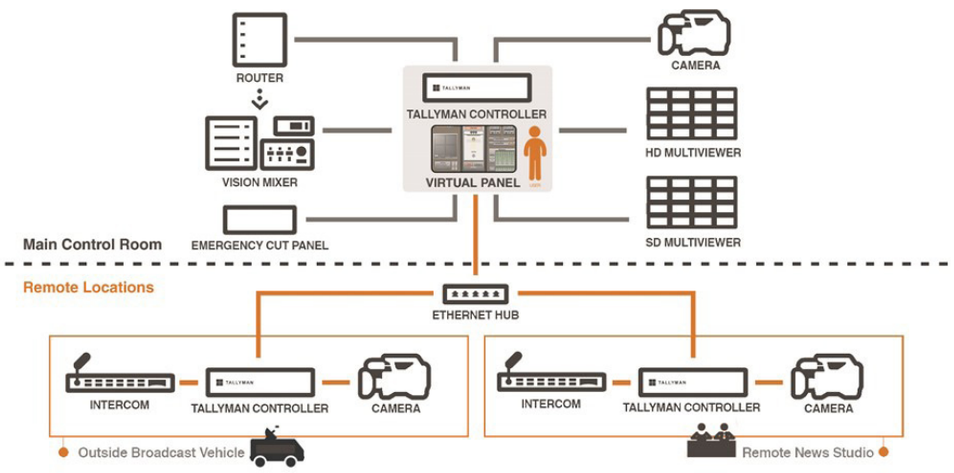
Botswana Television (BTV) became Africa's first fully digital TV station when it first went on air in 2000. Operating from a greenfield studio and playout centre in the country's capital city, Gaborone, the centre was regarded as state-of-the-art and an early adopter of a tapeless workflow. Since that time, the systems have been increasingly under pressure and repaired as they aged. BTV, which transmitted two channels, was also under pressure to migrate its digital transmission to HD. At the same time, the operational and engineering team had developed strong workflows and strong working practices and were reluctant to make too many changes. The requirement and decision, therefore, was to implement new technology to provide additional functionality, renewed levels of reliability, and the agility to handle new requirements, while remaining familiar to operational staff.

**A New Technology Platform**

Leading systems integrator Dega Broadcast Systems was contracted to design and implement the new technology platform. The technology upgrade was intended to cover three production studios, two playout channels (capable of expansion to four), two outside broadcast trucks, and a post-production area including graphics and editing.

BTV had a legacy control layer, which provided some integration of hardware systems. It wanted to retain existing functionality – including software control as well as hard panels – but it needed the system to be much more all-encompassing. It also wanted the flexibility to control multiple devices in a logical way. Working together, Dega and BTV selected appropriate technology for the move to HD.

Dega proposed the TallyMan intelligent unified control platform from TSL Products. BTV was immediately ready to consider this suggestion, as one of the few parts of the original station installation still working well was the under-monitor display (UMD) from TSL. BTV was convinced that TSL clearly provided resilient technology.

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# Application

**An Advanced System for Current and Future Needs**
In a sense, TallyMan – as its name suggests – grew out of UMD control, but it has become a smart automation platform as well as a control layer. The BTV system is one of the first of more than 1,000 global installations to widely deploy the new TallyMan Virtual Panels.

The TallyMan Virtual Panel has achieved this level of success because, most importantly, it is a completely agnostic platform. It supports interfaces for virtually every vendor and product commonly used in the industry. Where it does not exist, an interface can be quickly implemented. For example, this was accomplished when BTV needed full remote control of a Canon BU-47 robotic camera on top of a 35m mast.

Along with seamless third-party integration, the Virtual Panel offers a powerful control engine for grouping multiple actions into a simple, drag and drop control surface. Broadcasters can establish production pre-sets that trigger actions from multiple pieces of equipment with a single keypress. Logic trapping ensures all elements of a path are established before it can be taken to air, helping to eliminate operational errors while providing simple access to complex actions. This intuitive user interface ensures that the end user's engineering team can adapt existing pre-sets and add new operations or equipment at any time in the future.

**Leveraging Hardware Panels and Software Control**
Dega and BTV's engineering team had begun migrating towards a mixture of hardware panels and software control. Recognising that hardware panels are often operationally the most logical control surface, TSL Products includes several rack-width button panels in the TallyMan range.


Dega and BTV selected the 16 button hard panels for the new installation. While having the familiar format of a simple router panel, the TMCP-16 panels include active matrix displays on each key, making it the precise functionality clear while allowing the panels to include dynamic control and multi-page switching.

BTV will also benefit from virtual panels where control surfaces are built on the modern generation of touchscreen PCs that allow context-aware screen layouts, presenting precisely the right controls to the user at any time.

TallyMan's software includes a substantial graphics library to speed the design of virtual panels. This includes rotary and slider controls for precise setting of levels for audio, lighting and more. The TMVP virtual panel also supports the ability to import graphics such as logos, maps and charts to create completely customised and immediately obvious user interfaces.

Using the design software, Dega was able to tailor panels to the precise needs of the individual user. The Canon external remote camera is an excellent example. An operational camera would have pan, tilt and zoom controls; an engineering panel would have white balance and iris controls. The identity of the user determines what functionality is available. Again, the aim is to maximise quality and eliminate errors by ensuring staff are only presented with the controls they need.

> "One of the great strengths of TallyMan is the ability to create simple and clear touch-screen soft controllers, which can operate alongside dynamic hard panels."

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As a control layer, managing signal paths without directly handling it, this allows for effective management of any underlying infrastructure, including SDI, IP or a transitional mixture of the two. Moving from a SAM SDI router to an ethernet switch would simply require a change in the API in TallyMan to ensure precisely the same operational logic continues to be provided.

TallyMan itself controls devices either over point-to-point serial interfaces or over an IP network. Simple actions can be triggered by GPI. In all cases, timing precision is accurate enough to trigger large numbers of actions simultaneously.

**Achieving Maximum Resilience in Changing Environments**

"In a country like Botswana, it is very important that technology be resistant to various environmental factors, as the weather can be harsh resulting in power outages and air conditioning failures," says Philip Pullinger, BTV project manager for Dega Broadcast Systems. "TallyMan is a distributed system that does not rely on all system components to be working all of the time. This is a very strong architecture to have in this sort of unpredictable environment."

Dega has specified TM1 MK2 controllers for BTV to provide the logic processing, equipment database, SNMP monitoring and switch control for the entire network.  One of the key abilities to design the logic based on the facility's requirements is the ability to create multiple failover conditions. This allows the system to work around any failure in the equipment under its control, ensuring that key activities like playout remain live even if compromises must be made.

This is one of the great advantages of unified intelligent control: it allows technical resources to be shared and reallocated dynamically in response to changing requirements. This is critical for the levels of reliability expected in broadcast environments today.

The project to upgrade the facilities at BTV is a primary example of the way in which intelligent, unified automated control and monitoring of technology can deliver added value. While maintaining a familiar style of operation, TallyMan allows production values to rise while limiting the need for staff to be retrained and to devote time to complex operations. It delivers richer solutions, and it makes them easier and more reliable to operate.

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Contact our team of Broadcast Control experts to find out more about how TallyMan can help reduce the system complexity, streamline operations and help you be more cost-effective.

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