The Astro All Asia Broadcast Centre

Playout suite at Astro All Asia Broadcast Centre

Astro All Asia Networks (Astro) is Malaysia's leading cross-media group. Its subscription TV service began operations in 1996 with 22 channels and now broadcasts over 116 pay-TV channels in four major languages across Malaysia and Brunei. Astro's state-of the-art digital broadcast facilities at the All Asia Broadcast Centre and at the Cyberjaya multiplex are capable of handling digital TV, radio and data services on satellite and terrestrial broadcast networks, wireless telephony and the Internet. Astro's subsidiary, MEASAT Broadcast Network Systems, enjoys an exclusive licence till 2017 for satellite DTH transmission in Malaysia.

Working in partnership with Selangor-based Digistar Corporation, ATG Danmon has completed a comprehensive rebuild of Astro's All Asia Broadcast Centre (AABC) in Kuala Lumpur. A new suite of operational areas has been constructed and the station architecture re-engineered to provide resilience plus easy future expansion capabilities. The entire project took place while the station was on-air.

ATG Danmon provided consultancy and design services, project management and engineering supervision, working in partnership with Digistar's local engineering and wiring teams. The newly installed facilities at Astro's Kuala Lumpur premises include:

* Satellite downlinking and incoming lines area;
* Tape ingest, compliance editing and versioning area;
* Multi-channel transmission area;
* Reactive transmission suites and voiceover booths;
* Master control room.

Each of the new areas mirrors the design by ATG Danmon for Astro's Cyberjaya Broadcast Centre (CBC) completed in 2006. The provision of identical facilities and user interfaces reduces Astro's training overhead and allows staff to work with seamless efficiency at either site.

Dual-site operation

Central to the concept was the ability to perform dual-site operation using the latest technology, including dual archiving with media mirrored across both sites. Each site

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ATG Danmon is one of the world's most successful providers of high–end reliable and easy-to-operate integrated systems for broadcasters and programme makers.

Active in Europe, Asia, Africa and the Middle East, ATG Danmon is part of the Dan Technologies Group which operates from offices in the United Kingdom, Germany, Denmark, Norway, Sweden, Vietnam and Dubai.

Right and below: Left and right views of the master control room

would uplink part of the channel bouquet.

Introducing dual site operation meant that satellite uplinks could be switched to minimise the risk of rain-induced microwave signal fade caused by tropical thunderstorms. Additional channel capacity was also needed to serve a newly-launched satellite. If a problem arose at either location, uplink could be reconfigured quickly to transmit the most popular channels while the problem was fixed. This implied that six versions of each programme would need to be be archived if traditional full-length versions were stored.

However Astro decided to adopt a different approach. Here the ability to store the

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source copy plus just the edit decisions and transitions for reassembly on transmission to suit a specific broadcast slot was a much more efficient option than having to re-save the entire original programme each time it was repurposed. This is a good solution but requires complex automated workflow and the appropriate tools were needed to achieve successful implementation.

System architecture

The new system architecture is built around GVG Trinix routers under Omnibus control and is fully HD-ready. Complex workflows originated in the broadcast management system are passed to Omnibus workflow managers. Omnibus then controls multiple Quantel ingest and production servers, Omneon transmission servers and a DIVArchive/Storagetek archive system to deliver the required automated media processing. All the equipment chosen was selected on the basis of proven signal quality and reliability, ease of interfacing to the Omnibus control system, ease of operation and ease of maintenance.

Additional transmission channels can easily be added with no disruption to on-air services. The first expansion phase was completed in time to provide Astro with additional resources for the Beijing Olympics.

With complex workflow, you need to define and test before implementing. Manufacturers' test facilities do not have the full complement of what is needed and would in any case be shared with other projects - a dedicated pilot system is needed. This comprised Omnibus G3 workflow servers and clients, Omnibus Colossus automation, Quantel sQ server and edit clients, Omneon transmission server and Front Porch Digital DIVArchive driving a Storagetek library. The objective was to demonstrate ingest, compliance editing, output of Windows Media 9 files for subtitling, transfer to archive as an MXF file, restore from archive to Omneon for transmission, and the automated workflows required to deliver the above.

ATG Danmon and Digistar were chosen for their track record in delivering the CBC and for their knowledge of complex file-based transmission systems as well as the associated network requirements. This was a complex project demanding phased migration both to the new architecture and to the new operational areas, whilst maintaining all services without interruption. Close co-operation between ATG Danmon, Digistar and Astro's in-house project team enabled this to take place very smoothly. The experience gained on previous upgrade projects for Astro and other clients enabled ATG Danmon to recommend a realistic and achievable design and implementation plan meeting all the AABC's current and potential future requirements.

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