CX

INTEGRATION / AUDIO / LIGHTING / VI...

THEATRE

MUSIC OF THE NIGHT

Handa Opera on Sydney Harbour

THE WIRELESS ISSUE

/ AROUND THE GROUNDS WITH PRM
/ THE P.A. PEOPLE AT NATIONAL DAY 50 UAE
/ EASY RIDING WITH RIEDEL
/ CUTTING THE CORD FOR RIGGING

NATIONAL DAY 50 IN THE UAE

THE P.A. PEOPLE DELIVERS WIRELESS COMMS SYSTEMS ON A GRAND SCALE

Image courtesy D&D

While Sydney was experiencing extended lockdowns due to the COVID-19 pandemic in 2021, The P.A. People's Event Communications team sought Australian Government approval for a travel exemption to send a team overseas to prepare and deliver the communications systems for the UAE 50th National Day Celebrations in the Emirate of Dubai.

With that approval secured, The P.A. People dispatched an experienced crew of both senior full-time Australian staff and a number of familiar faces from abroad, along with some 12 tonnes of communications equipment to Dubai by air. The P.A. People were part of a large international team called upon to deliver a spectacular show staged on Hatta Dam in the country's mountainous east.

Specified by Scott Willsallen from Auditoria, the communications system consisted of a large two-way radio system integrated with an extensive matrix intercom and full duplex requirement, CCTV cameras and displays, and associated systems.

Hybrid Solution

First cab off the rank was a large trunked two-way radio system. The brief was originally for a traditional analog system, but the channel requirements of the production team were always under pressure. Rather than simply adding more channels with the obvious constraints of increased cost and limited spectrum, The P.A. People proposed that they deploy a hybrid system based on Motorola MOTOTRBO technology.

Increased Coverage

In order to meet the demand for additional channels, The P.A. People suggested

converting a number of the less critical analog channels to digital slots. This immediately doubles the channel count as digital channels take up only half the RF bandwidth, but also adds the possibility of providing a trunked solution (the use of a number of frequency and time slots to provide shared channels) or even a multisite solution to provide greater coverage. The system ended up delivering some 20 analog channels and 16 time slots of digital trunking, all from the central site. Although the job was ultimately delivered as a single site solution, provision was made to add two additional mini sites with 8 timeslots each. Each channel was interfaced to the Clear-Com matrix intercom system.

Image courtesy Nicolas Chavance Groupe

Production crew

Image courtesy Nicolas Chavance Groupe

Agile Interface

Handheld portable radios were Motorola DP4601 and DP4801 MOTOTRBO units with a variety of accessories including The P.A. People's unique 4pin XLR Push to Talk interface allowing any of the headsets used for the remainder of the Comms system to be added to a two-way radio.

The intercom components included Clear-Com Eclipse Matrix frames and panels, HelixNet digital party line and a large Free Speak II full duplex comms system. The main wired intercom system comprised an Eclipse HX Omega frame fitted with 4 x IPA cards each loaded with 64 channels, a MADI card, a Dante card, and numerous IVC and analog cards to fill out the frame. The team also carried a spare Median frame with additional cards as a backup system. The production team were predominantly provided with Clear-Com lever Key Stations along with Clear-Com CC300 and CC400 headsets. Key Stations were augmented with HelixNet Partyline beltpacks in stage management positions under the stage.

Real-time Engineering

The specification also called for some 60 Full Duplex beltpacks. "During the project build phase, we were asked to see if we could increase the scale of the full duplex component past what had previously been the upper limit on pack numbers," commented Chris Dodds, Managing Director of The P.A. People. "We opened up a dialog with the Clear-Com engineering team, who were able to reveal that the previous hard limit had been overcome but that the solution needed further testing. We were able to emulate the scale of the required system in our workshop in Sydney with excellent results and decided that it was ready to deploy."

Signal Management

"The FreeSpeak system performed brilliantly on site," reported Dom Jones, Project Manager for the ND50 job. "We were able to accommodate 120 wireless beltpacks across 40 IPT transceivers deployed over the extremely large site without any reported drop-outs or issues. This is a game changer; we are now able to deploy FreeSpeak II systems of significant scale ranging into the hundreds of belt packs, confirming Clear-Com as the vendor of choice for fully integrated matrix, Partyline, and full duplex wireless systems."

Malestrom, The P.A. People's new cloud-based asset management software kept track of all the 'user assigned' radios and beltpacks over the project including the daily sign in and outs.

Network is Key

All of this was supported by a very significant 10Gb ethernet IP network over a fibre backbone, designed by The P.A. People to not only manage the AES67 requirements of the FreeSpeak system and Dante audio, but also distributing timecode to IP timecode displays along with 28 CCTV cameras and some 40 CCTV displays, 24 of which were 43" and 4K capable. Extensive use of CWDM technology was used to minimise the number of fibre cores required and to create a virtual star topology for the network. The P.A. People also created a dedicated network backbone for the considerable 'water' component of the show consisting of programmable fountains across the stage and set.

"Everything we deliver for these shows relies on the network," notes Dom. "We have invested heavily in new network hardware over the past few years, but we also took advantage of the down-time during the early stages of the pandemic to train all our guys in network theory, particularly as it is applied in our industry. All our guys are comfortable with using networks, whether it be designing a layout or configuring a switch."

The P.A. People would like to offer their congratulations to LarMac Projects, the Official Producer of the 50th UAE National Day Celebration, for a great result, and to thank the entire the team involved in the project.
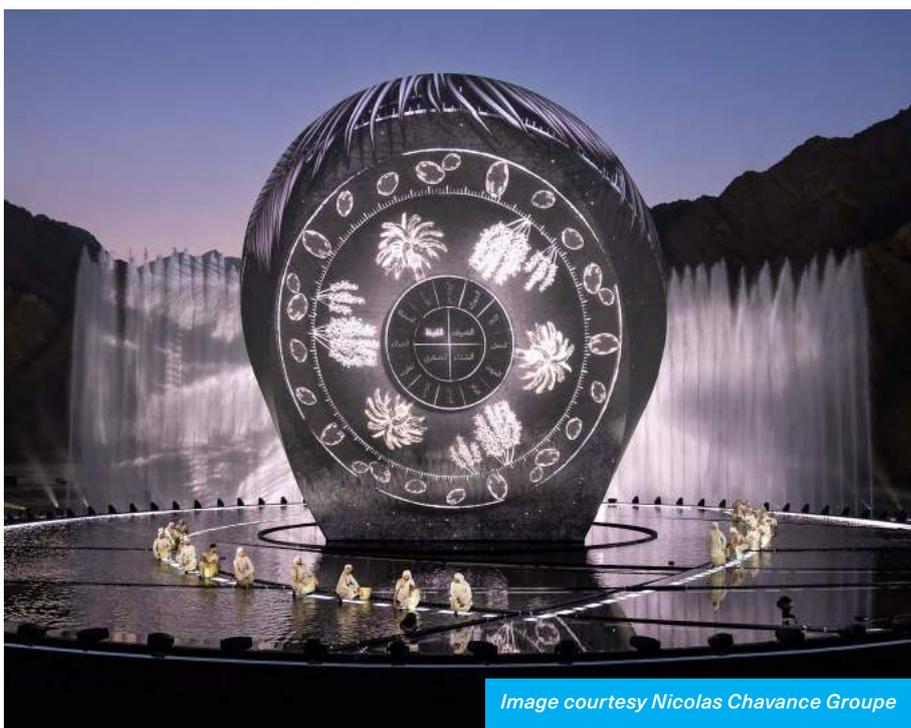

Image courtesy D&D

Image courtesy Nicolas Chavance Groupe

Production desk

WIRELESS TECHNOLOGY IN EVENTS

ARE TWO-WAY RADIOS OLD HAT?

Many casual readers might say that the answer to that question is an emphatic yes. Given all the advantage that full duplex systems such as Clear-Com's FreeSpeak II system bring to stage management and production personnel, one might be tempted to think that the role of two-way radios might be long gone.

Whilst there are clearly advantages to the use of full duplex systems, they are not the only wireless solution to be found at a modern event. Rather, many events benefit from the use of both full duplex and a modern two-way radio system.

In general (and somewhat simplistic) terms, two-way radios are used for managing the production build, while full duplex finds its home in the management of the show itself.

There are a number of strategic differences between two-ways and full duplex:

• Two-ways are quick to deploy in large quantities and are able to use centralised infrastructure to cover large spaces. By contrast full duplex requires decentralised infrastructure which needs to be scaled to the number of users.

• Two-way radio is able to cover relatively large distances from a single site, and it is possible to link sites over kilometres, relatively easily. By contrast full duplex coverage is counted in 100s of meters.

• Full duplex wins the audio quality argument hands down. If you need to wear a headset and pack all day, then full duplex would be your system of choice. Two-way radios don't offer that sort of audio quality, but then the cost per user is significantly lower.

• Full duplex is just that. Hands-free operation is possible, whilst two way is predominantly press-to-talk.

• And lastly, full duplex is generally license free, while two-way radios generally require a license for every channel occupied.

Not only do two-way radios find a home alongside full duplex systems in major events such as the UAE National Day celebration; they are the backbone of the communications and management systems for other large scale public events in their own right.

The P.A People's systems can be found at the Australian F1 Grand Prix, the Moto GP and Superbike Championships in Victoria. In conjunction with the Orion Network, Australia's only national commercial two-way radio network, The P.A. People also provide two-way radios in support of many large-scale events such as city-wide coverage for the iconic Sydney New Year's Eve celebrations and the Vivid Festival for Destination NSW.

With digital two-way radio technology dominating the event marketplace two-way radios are certainly not old hat. Their flexibility in deployment makes two-way radio a solution of choice for many local, national and international events.

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