



Liggins and Bourbon.

## RedNet in action

As the first phase of what is billed as the world's largest Focusrite RedNet audio network installation gets underway, the London College of Music has found itself at the forefront of the audio networking revolution and they're thrilled with its possibilities. **DAVID KENNEDY**

Founded more than 125 years ago, the London College of Music is one of the eight separate schools that make up the University of West London. The College concentrates on performance, composition, performing arts, music management and music technology, which accounts for half of the college and counts itself among the largest music tech departments in Europe. They currently have 24 professional quality studios across two sites of which 15 are capable of tracking and there are some eight Audient desks and one Neve Custom Series 75. As the main University campus begins to emerge from the first phase of an ambitious and very fast paced £50 million 'Future Campus' building and refurbishment programme, LCM appears to be recovering. Specialist subject resource and technical manager Richard Liggins, who has been a lecturer for ten years, now looks after LCM and its sister school the Ealing School of Art, Design and Media which, together form the vibrant Arts Department for the University. Like most of the academics and all of the technical staff his background is as a practitioner — first as a gigging musician and then, as now, an engineer.

The College studios' I-Os were until very recently largely made up of ageing Digidesign 192s and 96s but as Pro Tools 11 landed the decision was made to change to HDX systems which are not restricted to using Avid I-Os. 'We were very serious about looking at the Avid offering, the HD hardware, because the integration of that would be so much simpler, it's designed to work with the system,' says Liggins. 'We weren't at all sure what the operational problems would be installing HDX with somebody else's hardware.'

'But we thought while we're in this position of having to change why don't we have a look at what's in the marketplace. So, next thing is we go to Focusrite and say give us a RedNet system so we can play with it — we had Apogee Symphony, we had HD from Avid, we had some Audient bits and pieces as well. We had all these connected up and running from the same

system doing recording tests, mixing tests and listening tests across all the staff, all the technicians and some of the students over about four weeks to really get used to it.' Richard was not just interested in the sound quality but he was also concerned with build quality. 'Are the students going to press the button so many times it's going to fall to pieces?'

Sonically, it came down to the RedNet and the Apogee so they 'put the two together, did some blind testing and from a subjective perspective they came out neck and neck.' He continues, 'On blind tests I have to say I chose the Apogee for its imaging and coherence particularly in the bottom end but the RedNet wasn't far behind it. There's a quality to it, it's a very, very good sound. Nobody would mind in the slightest if we put RedNet hardware in.'

Despite being interested in the idea of networked audio this RedNet capability had been of secondary importance in the initial search for sound quality. But finally consideration was given to networking — research

was undertaken and there were discussions about how it could be made to work for LCM. Unlike some of his colleagues, senior lecturer Andrew Bourbon did know a thing or two about networking audio for live sound. 'Andy came in and said this could be fabulous if we did this and we laid out a picture of what we could do. We got some costings in and financially it actually made sense. Had Apogee come in miles ahead it would have given us a real problem,' he says.

So the first phase of the world's largest RedNet installation was begun. Audinate's Dante audio networking protocol is used to send and receive audio between the RedNet units via any standard Cat5e or Cat6 infrastructure and so an entirely discrete RedNet network was laid in parallel with the building's new data network during refurbishment. Two 48-way Cisco switches are all that is required to make the RedNet connections across the site and as it is a fully distributed network there is no central control — it can be managed from any point on the network.

Each of the seven currently available RedNet units is a break-in/break-out box for the Dante network: RedNet 1 & 2 provide 8 or 16 channels of A-D/D-A I-O; RedNet 3 provides 32 channels of digital I-O (AES, S/PDIF, ADAT); RedNet 4 provides 8 remotely controllable mic pres/line level input plus 2 DI inputs A-D; RedNet 5 offers a 32-channel bridge between the network and Pro Tools HD/HDX; RedNet 6 provides a 64-channel bridge between the network and MADI; and the RedNet PCIe card provides 128 channels of I-O for Mac or PC. Additionally, Dante Virtual Soundcard software allows a Mac or PC to connect to a Dante audio network via its Ethernet port and communicate with other Dante enabled devices.

At LCM, fifteen HDX systems are bridged with RedNet 5s across six tracking studios, three 5.1 rooms and a couple of teaching rooms. Live rooms are networked with appropriate mic preamp and A-D RedNet units. Forty

workstations running Pro Tools 11 Native and Logic have access to the audio network using Dante Virtual Soundcard. This forms the core of the University campus studios complex. The final phase of the audio network installation will see LCM's planned 15-room complex at Ealing Film Studios join the audio network via a fibre channel link to the main campus audio network (their current building on the site is due for demolition!).

'They work, the great thing about the boxes is they do exactly what they say on the front. They are simply I-O,' says Liggins adding that the installation of the RedNet units has been straightforward with each studio requiring about a day's soldering. 'There is no issue connecting them up to Pro Tools HDX; it



works. The techs have been really very impressed, take the old one out, redo the DSub and plug the thing in and Pro Tools says "hello" and there's the audio.' The I-O appears in Pro Tools just as the I-O you'd expect to see and on my tour of the facilities I saw producer Pip Williams demonstrating this very point in his class.

Perhaps inevitably, with a large installation of a product early in its life there were going to be some snags. Clocking and latency are two areas that haven't been fully assessed yet but Liggins is sanguine about this. So far the only minor gripe he has is over the issue of sample rate changes. 'Because it's network audio you can't propagate sample rate changes from one box to any other boxes because otherwise it propagates across the entire network,' says Liggins. Focusrite is addressing this by a software fix to generate subnets specific to connected units thereby isolating them from all other units on the network. Under this scenario it should be safe to propagate sample rate changes across any given subnet on the network. Liggins' only other niggle was that he dearly wanted red sockets with red cables to match his thoroughly attractive new units.

The audio network has also been routed through, and made available in, all manner of performance and rehearsal spaces on the campus which has created exciting opportunities for interdisciplinary collaboration and teaching across the wide range of arts studied on site. The regular performances in the main theatre are an obvious candidate: 'We have the music theatre and we try to record the cast recording of each show that they do and they do at least one bespoke show every year. At the moment,' says Liggins, 'we take them to the studio, as you would normally and do it, but why don't we just RedNet it up here [in the theatre], send it everywhere, get the students to have a play with it, mix it, choose the right one, you can record from the production rooms, you want to record in-progress stuff, you can just do that.'

One option would have been to install a console with integral Dante boards, such as Yamaha, in the main theatre but they 'didn't offer the theatre flexibility we needed,' says Bourbon. 'We're trying to also train our students to be specialist theatre engineers. We talked to various West End theatres and they're all using Digico because its theatre software is so impressive. So we definitely want to go

down the Digico line, how are we going to get this to talk to Dante?' A RedNet 6 provides an elegant 64-channel bridge between MADI and the network. 'Its all about usability first; its all about what we think best supports our students. Eventually we can have students in the studio next to the radio studio, live mixing a band in the theatre and broadcasting it on the radio. That's the vision.'

LCM is a teaching facility first and foremost — 'We're not in the business of providing professional recording studios per se,' says Liggins, 'we are in the business of teaching people how to use recording studios. We give them the kit that proves the principles effectively; the desk, the recorders, the monitoring, the outboard and a good mic stock.' Bourbon agrees: 'Everything is always about music, that's the bottom line, these students are working with artists, they're producing artists, whatever they want to do they've got this vision for it and the last thing we want is them getting stuck, not able to realise their vision because they don't know how things work.'

'It's about choices — what mic are you using, where are you putting it? — but that choice is driven by understanding...and if we can give them the technical tools and the creative tools and if they can fuse the two together then that's fantastic and RedNet is really good because people are now coming to us and saying "thinking about RedNet, could we now do this?" with all sorts of multiroom ideas or lots of performance ideas with remote performance or distributed speaker networks or multichannel diffusion systems.

'I'm still really excited about the creative opportunities and I love the fact that every day somebody comes up with another way of making use of it. It's the fact that there's an appetite to try that I think is really exciting for us,' he says.

The whole University of West London Arts department has an infectious energy about it. Besides the divergent talents

within the College of Music itself, there are photographers, filmmakers and designers all working side by side with advertisers, journalists and marketers. As the RedNet extends its tentacles into the other disciplines' domains the scope for new collaborations and radical new ways of working cannot help but present themselves. ■

