Neyrinck SoundCode For Dolby E Encode/Decode

Neyrinck SoundCode For Dolby E is a Mac/PC software package enabling Dolby E encoding, decoding and monitoring. JIM BETTERIDGE contemplates the savings.

*N*eyrinck SoundCode For Dolby E can run in Pro Tools as an AudioSuite or RTAS plug-in or it can run as a standalone application. It can open a 5.1 multichannel broadcast WAV file (MBWF) and spit out a Dolby E file about three times faster than real time. It can also monitor a Dolby E stream in real time, dynamically displaying details of its metadata, and (in its Audio Suite form within Pro Tools) decode a Dolby E file back into its MBWF also at triple speed (based on a 2.6GHz Mac Pro running OSX).

For those not yet entwined in the format, Dolby E allows up to eight channels of PCM audio and its attendant metadata to be encoded into a single AES pair. The eight channels can be virtually any combo of channel formats you can imagine, e.g. 8 x mono, 4 x stereo, LCRS + 2-mono, 5.1 + stereo etc, or just 5.1 alone (you don't have to use all eight tracks). While all conceivable combinations are included in SoundCode and while many will have real applications in this multilingual, multiformat world, the one most likely to exercise readers of this magazine is Dolby Digital 5.1, which is mainly what I'll be referring to here.

As more programmes are made in HD more of us are working in surround. And although Sony's HDCAM-SR tape format (the *de facto* standard for HD television) provides a seemingly generous 12 digital audio tracks, these are nowhere near sufficient if you want to include an even modest array of deliverables in a 5.1 format. For instance, we're required to provide a Full mix, a dialogue/music/effects (DME) mix and a DE mix all in 5.1 plus Full mix and DME in LR stereo. That'd be 22 tracks as PCM.

Originally, the only way to encode Dolby E was through Dolby's DP571 rackmount processor: you run your six channels into its AES-EBU inputs and record its Dolby E output back into your DAW. Theoretically, you could record the Dolby E stream straight to tape but

the encoding process takes one frame and so it would be one frame late on tape whereas most broadcasters require it in-sync on tape. So for a one-hour programme, once you'd created your three 5.1 mixes (Full, DME and DE) you'd have three hours encoding plus an hour to lay them back to tape.

The actual process has other layers of complication too detailed to go into here (largely when there are 11th hour changes or fixes to do) but suffice it to say that the addition of Dolby E to a project will add more hours of extra work than you initially imagined and will hence tie up your DAW and studio for long periods of time. So when Dolby launched its DP600 (reviewed *Resolution* V7.6), which offers five times real-time file-based Dolby E encoding plus a range of other useful processes it was a very attractive proposition. You can

throw any number of files into its digital job bags across the network and return to your studio and its expensive DAW/controller to resume other work while the DP600 crunches rapidly through the list of encoding processes. It's a great bit of kit but at around £13,000, it's not for everyone.

At US$4495 the Neyrinck SoundCode For Dolby E is only a bit more expensive than the DP571 and, while not providing the hardware, the range or the power of the DP600, it too allows you to free-up your DAW while it does the encoding three times faster than real time (assuming you have a spare PC or Mac, of course).

The process is essentially quite simple if you know what you want. In the Configuration page you navigate to the file you want to encode, set a few encode parameters plus a whole host of metadata parameters (that's where you might need to do a bit of reading-up), give it a name and destination folder and click the Encode button. The Dolby E file can be 16-bit, 20-bit or 24-bit. The 16-bit option allows only six channels whereas the 20-bit provides for the full eight and higher data rates. The 24-bit word length is relatively new and is not found on the DP571. It's intended to offer still higher bit rates for newer tape formats like the HDCAM-SR, which provide 24-bit audio tracks. You can also choose to compensate for the one frame processing time for the encode process only, the encode + decode, or none at all.

The current version has a small bug in that files over a certain length do not retain their timecode stamp in the Dolby E file — 61 minutes is OK, 65 minutes has no TC, so somewhere in between lies the maximum. I'm assured that, now pointed out this will be rectified.

Even if you're not required to Dolby E encode your MBWFs yourself it's still arguably a good idea to embed in them all the necessary metadata to avoid any future misunderstandings. For instance, you might have mixed at a dialnorm of -25 in a Dolby room set up for cinema where the surround levels differ from those in a domestic/DVD environment. When, months or years later, copies of copies of your files are re-ingested for encoding, the chances of any meaningful paperwork

surviving are minimal. With all the metadata written into the file, however, the new engineer will know to drop the level by 2dB to hit the desired -27 and adjust the surrounds for their new purpose before encoding.

There's even a space to type in a description of the file, e.g. Full Mix, Mix minus VO undipped, etc. With this in mind Dolby has developed the Dolby Metadata (DBMD) standard which it is working to standardise throughout the industry. SoundCode allows you to set and encode a DBMD chunk into a BWF file. In this way it is also presented as being an ideal tool to work in conjunction with a DP600 in that all the metadata can be enshrined in the MBWF to allow the DP600 to do its job without further human interaction. This DBMD function is also available for the less expensive SoundCode for Broadcast ($995), and it would be possible for a larger facility to have a number of them preparing files that could effectively be queued-up for the SoundCode For Dolby E to encode.

Apart from including its own high quality hardware, the DP600 offers the advantage of working at five times real time and being able to apply four different (or identical) processes to four separate files simultaneously including AC-3 and LtRt and LR fold-downs. It also allows you to set up separate folders for different combinations of jobs. Although this initial setting-up isn't terribly easy it would make managing a complicated workflow within a large facility that much faster and more foolproof. SoundCode only uses a single processor irrespective of how many your machine has. If Neyrinck (and therefore its customers) were prepared to pay more for the license they too could offer multiprocessor operation. This might be an interesting future option — to buy access to the number of processors that suit your application. Ideally it would be possible to buy a time-limited key allowing use of extra processors when the need arises. A while back we had to reversion a 20-part series and render out three Dolby E streams per show. I would have paid a lot to have more power for a few days; although not £13,000.

Neyrinck is very open to user feedback and would certainly be influenced by user demand. A couple of suggestions that may well be in a future update: the facility to change a MBWF track format from LCRLsRsLfe to LRCLfeLsRs (or vice versa) when encoding; and also the measuring and correcting of a programme's dialnorm before encoding (as per the DP600). It may also be made available in a VST version, which would have relatively limited function but allow the basic encode/decode from within DAWs other than Pro Tools, although personally I think the standalone format has a lot going for it.

SoundCode For Dolby E is simple to use and offers a very detailed level of information and control if needed. If you have to do a lot of Dolby E encoding it's a great halfway house between the real-time Dolby DP571 and the fabulous but very expensive Dolby DP600. ∎

PROS Mac or PC; three times real-time Dolby E encoding and decoding; works within Pro Tools or standalone; can free-up your main DAW while a second computer gets on with the encoding.

CONS None.

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