Engineering notes from NAB 2010

BY DAN ROACH

As always, the exhibit floor at NAB 2010 in Las Vegas was filled with a combination of the new and novel and the tried and true—some trends continued and there were a few surprises.

Suddenly, this year there was a lot more attention being given to surround sound level control for ATSC. The pending legislation south of the border, threatening penalties to those broadcasters transmitting excessively loud commercials, might have had a little something to do this sudden interest.

Whatever the cause, there was lots of new stuff and, dare I say it, many new and creative approaches to tackling this problem. Evertz, Harris and Miranda each had their own unique take on it.

Dolby Labs surprised me—I had expected that they would have something to say about this—by introducing a multichannel audio "processor" that doesn't and won't work in real time. It works at server ingest time or later, by examining and treating the audio files on the server and writing them back there. It also produces all sorts of statistics on the audio it treats, but it won't work in real time so it's not of much use for live broadcasting or for level control after the server.

Linear Acoustics took a more traditional approach, and their box looked more like an audio processor to those of us that are used to looking at such things. They and Harris also had novel new graphical ways of displaying multichannel audio (Harris actually had at least two different displays on offer, one of their own and one from dts, the digital theatre sound people), but apparently none of these displays phase information.

Lots of approaches; but it now remains to be seen if any of them are particularly effective. Impossible to tell while on the exhibit floor.

There was a great deal of gabbery about the new mobile 8VSB transmission standard, and mobile ATSC. Pardon my cynicism; it seemed like a lot of energy in search of a market. Maybe I just need someone to explain to me why we would need all this. I will be the first to admit that it is in the nature of the bleeding edge to introduce all sorts of new ideas, good and bad. In fairness, I also have to admit that it is often in my nature to wonder who would want a lot of this new stuff, and if it really represents progress in any real form.

On that merry note, there was much discussion on the latest IBOC radio developments as FCC announced that the requested increase in injection levels for the digital sidebands has been "somewhat" approved. Whether the digital power can be increased from the old level of 1% of analogue (-20 dBc) to 10% (-10 dBc) is dependent on each individual station's protection requirements—some can and some can't. Most can increase part way, at least (perhaps -14 dBc).

A further submission to FCC would allow unequal power levels for upper and lower sidebands, so a station could really squeeze out the last few allowable IBOC watts on each. Just calculating the transmitter power size requirements for a station under the new and the proposed rules is a major operation, best left to the transmitter manufacturer.

As this whole IBOC business gets more and more complex, and just refuses to stay still, I've been thinking about how lucky we are in Canada that we haven't had to deal with any of this just yet. Let's leave it to the U.S. broadcasters to keep beating on this drum until the smoke clears and a stable standard emerges. Maybe, if they can get that far, maybe then there will be something worthwhile for Canadian broadcasters to look at—hopefully without some of these costly growing pains.

Speaking of the Excited States, there's another proposal that's just been submitted to FCC that would allow all U.S. AM stations to increase power by 10 dB on their day patterns, using the argument that the protection requirements would stay the same if everyone increased by the same amount. It's intended to help overcome electrical interference problems. Night time power levels would be unchanged. But we'd be talking about AM transmitter power levels up to 500 kW per station! Yikes!

Dan Roach works at S.W. Davis Broadcast Technical Services Ltd., a contract engineering firm based in Vancouver. He may be reached at dan@broadcasttechnical.com.