IT'S GIANT LEAP OF FAITH TIME AGAIN…

Lately I've been hearing excitement from radio station sales managers, and some soft groans of "here we go again" from station engineers. At the centre of it all: the Bureau of Broadcast Measurement's promise of "Portable People Meters" for radio.

As long as I've been involved in broadcasting (roughly since the middle of the Jurassic period), there's been grumbling about the purported accuracy, or perceived lack of it, of BBM's ratings, which have always relied on radio ballots. And while everyone (perhaps excluding BBM employees) seems to feel that these are not as accurate as they should be, well, there hasn't been a proven way to get better results.

BBM has responded to the pressure to find a more modern method, with the promise of PPM's in the next few months. These special radio receivers will log what stations listeners are listening to, and for how long. They'll do this by decoding inaudible identification signals encoded in each station's broadcast audio chain, and subsequently broadcast over each station's transmitter. Of course the techniques to be used are proprietary, but it has been let out that they will involve psychoacoustic masking. The little bit of information that has been released claims that the system is patented, has been around since 1992, and works very reliably under real-world conditions. There's already some experience with TV measurements, but now AM and FM radio will be trying this system as well.

Tricky business, this. Radio reception, being portable, arguably is subject to quite a bit more variable background noise than TV viewing. And with AM radio in particular, the bandwidth available for this kind of telemetry is very small. Psychoacoustic masking is well-known to broadcasters, and has been one of the main tricks used to bit-reduce audio. But the last time we heard about anybody trying to use it this way was when CBS Labs got embroiled in the Copycode chip debacle, and that didn't work out well at all…

You might remember when Sony and other Japanese manufacturers tried to make R-DAT into a consumer format. These low-cost digital audio recorders promised to replace the popular audio cassette format with a smaller, CD-quality digital recording. Record industry types, notably the RIAA in the USA, got their knickers in a knot over the prospect of consumers making high-quality bootleg dubs of copyrighted CD's. CBS Labs entered into the fray, promising to develop a chip that could be incorporated in the R-DAT machines that would identify copyrighted input material by the *absence* of a narrow band of audio that would be present in all normal audio, and this would prevent the recorder from continuing to record. Under this system, the critical band of audio would have to be notched out of all commercial CD's. The main problem CBS encountered was

that the notching process kind of ruined the source audio they were trying to protect. If they moved the notch to a less critical area in the audio band, then the system didn't work reliably, because the audio wasn't always there to be filtered out.

Try as they might, CBS Labs couldn't come up with a satisfactory system. Listener tests indicated that they were mutilating the source audio. The lack of a workable Copycode chip effectively prevented R-DAT from ever having a chance of becoming a consumer format in North America. Who knows? Maybe it wouldn't have caught on in any event. It was about the last time anybody heard from CBS Labs, which was closed down shortly afterward.

We've got a couple more decades under our belts now, and digital signal processing and psychoacoustic masking are much better understood than they were in CBS Labs' time. BBM may be able to some up with a system that (a) works and (b) is inaudible. But let's just say that it won't be easy, and wait on developments. If these encoders do produce audible degradation, broadcasters will face a difficult choice: whether to accept them anyway, for the sake of more accurate audience measurements, or demand something truly inaudible, which may be impossible to achieve in practice, in order to keep more audience in the first place.