

Stay tuned

Communications: Broadcasters plan to hop, skip and jump around the world with a new long-range digital-radio technology

EVERY evening in 1960s Britain, millions of young people—many hiding under their bedsheets—would twiddle the dials on their transistor radios. They were tuning in on medium wave to Radio Luxembourg's nocturnal English transmissions. They wanted to listen to pop music, the likes of which could not be heard on the stuffy old BBC. With the deregulation of radio and the arrival of hordes of commercial rivals, Radio Luxembourg lost its audience, and went off air in 1992. But now it is planning a comeback using a new technology that can provide high-quality digital broadcasts over long distances.

Several broadcasters besides the RTL Group, which owns Radio Luxembourg, are testing this digital replacement for traditional long-, medium- and short-wave radio. It is called Digital Radio Mondiale (DRM)—confusingly, the same acronym as that for digital rights-management. It has been developed by a consortium of broadcasters and equipment-makers including Deutsche Welle and the BBC World Service. And it has now been endorsed as an international standard.

This standard is for frequencies below 30MHz—those used by amplitude-modulated (AM) services since the earliest days of broadcasting. The problem with such AM broadcasts is that they are prone to interference. That was why FM (frequency modulation) was introduced after the second world war. The advantage of AM is that it has greater range than FM, since the very high frequencies required by frequency modulation do not travel far. Indeed, some AM broadcasts, especially on short wave, bounce between the ionosphere and the ground in a way that allows them to travel huge distances—sometimes halfway round the world. This phenomenon, known as sky-wave, is particularly powerful at night.

DRM provides the same range as traditional AM transmissions without the interference—on the face of it, the best of both worlds. It is also cheap. It can be broadcast by modifying existing AM equipment and does not use as much electricity as an equivalent AM service. And it will cover several countries with just one transmitter. Reinhold Bohm, a senior researcher at Dolby, an audio firm

that is part of the DRM consortium, says that in one test a signal transmitted from Europe was received well in Australia with only two "hops" along the sky wave.

In a shorter-range trial a DRM signal from Austria was received all over Britain, says Bryan Coombes of VT Communications, who is vice-chairman of the DRM consortium. That means broadcasters could reach niche markets in other countries without having to set up shop in them. It could also maintain the flow of news to countries during political crises—hence the BBC's interest.

Of course, DRM faces competition from satellite broadcasting and internet radio. (Radio Luxembourg, hedging its bets, has already begun broadcasting online.) Nevertheless, there is something appealing about the idea of a global radio station with a single transmitter. •