Choosing a versatile, digital terrestrial broadcasting standard

With different proposed DTTB standards from Europe, Japan and the US, broadcasters around the world have a tough choice to make.

Although it is the regulator in each country who will make the decision, the needs of the viewing public and broadcasters will be of primary importance. After that, a level playing field must be ensured for manufacturers who will provide broadcasters and viewers with the necessary DTV equipment.

Here are some of the issues the regulator will consider.

The big picture

DVB means maximum synergy between all the different DTV delivery media.

DVB is a family of compatible standards for all television delivery media, including satellite, terrestrial and cable.

DVB-S satellite transmission is the de facto global digital satellite standard. DVB-C is its cable equivalent. DVB-S and C services are on air in five continents.

DVB-T is Europe's chosen Digital Terrestrial Broadcasting (DTTB) system. DVB-T terrestrial services launch in 1998.

How to allocate the spectrum

DVB-T gives complete freedom in terrestrial frequency planning.

DVB-T has been designed to be tailored to suit any geographical or frequency environment.

Uniquely, DVB-T allows the construction of single frequency networks (SFNs), where adjacent transmitters use the same frequencies. This also permits "gap-filling" for optimising coverage in difficult spots.

Consider the 50/60-Hz legacy

DVB-T is also suited to 50- and 60 Hz countries, 6-, 7- and 8 MHz channels.

For historical reasons, the frame refresh rate of a TV picture is 50-Hz in some countries and 60 Hz in others.

Likewise, television channels consist of 6, 7 or 8 MHz 'bands'. In Brazil, for example, the combination is 6 MHz and 60 Hz. In Argentina it is 6MHz and 50 Hz.

DVB-T equipment can be configured easily for all of these environments.

Consider HDTV and SDTV

DVB is HDTV and/or Standard Definition TV - progressive scan or interlaced.

Although the majority of DVB-T services planned for launch in 1998 and 1999 will focus on multiple channel SDTV and 16:9 widescreen services, there are no obstacles to using DVB-T for HDTV.

All envisioned HDTV picture formats are supported, 'interlaced' or 'progressive' scan.

Crash-test the RF modulation

DVB-T COFDM modulation provides rugged, even mobile reception.

There is no better way to illustrate the ruggedness of DVB-T than to point out that in mobile reception trials DVB-T has been perfectly received at speeds of up to 275 km/h on highways and in trams moving through dense city centres.

DVB-T uses multi-carrier modulation to overcome adjacent channel interference and reflections of the same signal (ghosting). With a variety of user-adjustable parameters, this is easily achieved in any situation.

Think about the receiver cost

DVB open standards allow manufacturers to achieve global economies of scale.

Millions of DVB receivers are in use today, more than two million in the US and Europe each.

For the different media, most of the receiver components are the same.

MPEG-2 chip manufacturers in particular will benefit from the huge economies of scale - all proposed DTV standards are MPEG-2 compliant.

Plan for convergence

DVB carries video, audio and multimedia data of all kinds. It is convergence-ready.

The core of the DVB digital data stream is the standard MPEG-2 "data container", which holds the broadcast and service information. This flexible 'carry-all' can contain anything that can be digitised, including multimedia data.

DVB specifications include a complete set of return channels for users to interact with enhanced interactive digital services. Interfaces for DVB receivers to all potential in-home digital networks are specified.

In Europe today, DVB is already delivering high-speed Web services via satellite to PCs equipped with plug-in DVB receiver cards.

The first sea-change to digital is over.

DVB-T puts you firmly in control on the next wave.

DVB

Digital Video Broadcasting

the next wave

NAB '98

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http://www.dvb.org