

Contact: Harold Bergin Tel: +44 (0)20 7799 3100
 WHD Public Relations E-mail: harold@whdpr.com
 P.O. Box 3035,
 London SW1P 3BH
 United Kingdom

UNSURPASSED VENDOR SUPPORT & WORLDWIDE ADOPTION CONFIRMS DVB-H AS TOP CHOICE FOR MOBILE TV

Live DVB-H Broadcasts & Over 30 Vendors Exhibit DVB-H Products & Services at 3GSM.

Barcelona – 13th February 2006 – DVB-H is fast becoming the recognised leading technology for digital Mobile TV. The unparalleled support of network operators, broadcasters, content owners, silicon and equipment manufacturers is paving the way to commercial launches of DVB-H Mobile TV services around the world. Extensive trials and pilot services across five continents are confirming the technical capabilities and economic advantages of DVB-H.

Some of the advantages of DVB-H over other Mobile TV technologies are:

- DVB-H has been an ETSI standard since November 2004
- DVB-H is a non-proprietary, open standard, with public access to independent evidence regarding real world performance records
- Network investment costs compare favorably to other systems
- DVB-H offers 4 times more capacity with up to 60 channels per multiplex
- Offers the lowest power consumption with the highest data throughput
- Channel switching times of 1 – 2 seconds have been achieved
- DVB-H can share spectrum (and investment) with DVB-T using hierarchical modulation and/or statistical multiplexing. It can be implemented without switching off any existing services
- DVB-H spectral efficiency is scalable with 16QAM and 64QAM options
- DVB-H is uniquely specified for an Electronic Service Guide, for service purchase to generate revues, and a protection system allowing control over content viewing
- Receiver chips available from multi-vendors (DiBcom, Philips, Samsung, Siano, ST, TI, Freescale, Microtone, etc.) leading to lower costs
- Headend equipment commercially available from over 50 vendors
- Handsets available from Nokia, Motorola, BenQ, Samsung, Sony Ericsson, Sagem offering consumer choice

Unsurpassed Vendor Support & Worldwide Adoption Confirms DVB-H As Top Choice For Mobile TV

With all the elements now in place the roll-out of commercial DVB-H services is set to take place this year beginning in the U.S. with Modeo's planned launch in New York City and a nationwide deployment of its network to the top 30 U.S. markets targeted throughout 2007. Also in the US, a group of the industry's leading wireless and entertainment companies has formed a new organisation to promote the growth and evolution of DVB-H. The Mobile DTV Alliance includes Intel, Modeo, Motorola, Nokia and Texas Instruments.

Italy's Telecom Italia Mobile and Mediaset have jointly announced their intention to launch services later this year. Many other countries have expressed plans to launch full Mobile TV services over the next two to three years.

At this year's 3GSM World Congress, DVB-H will be live on-air in Barcelona with more than 40 services being delivered via 3 multiplexes. Visitors can also expect to find multi-vendor support for DVB-H with over 30 companies exhibiting products and services.

All of this makes for a clear indication that DVB-H is well on the way to becoming the Global Standard for Mobile TV.

Background

The DVB Project

The Digital Video Broadcasting Project (DVB) is an industry-led consortium of over 250 broadcasters, manufacturers, network operators, software developers, regulatory bodies and others in over 35 countries committed to designing global standards for the delivery of digital television and data services. The DVB standards cover all aspects of digital television from transmission through interfacing, conditional access and interactivity for digital video, audio and data. The consortium came together in 1993 to create unity in the march towards global standardisation, interoperability and future proofing.

To date, there are numerous broadcast services using DVB standards. There are hundreds of manufacturers offering DVB compliant equipment, which is already in use around the world. DVB dominates the digital broadcasting world. A host of other services is also on-air with DVB-T, DVB-S and DVB-C including data on the move and high-bandwidth Internet over the air. Further information about DVB can be found at: www.dvb.org.

DVB-H (Handheld)

DVB-H is defined as a system where the information is transmitted as IP datagrams. Time-slicing technology is employed to reduce power consumption for small handheld terminals. IP datagrams are transmitted as data bursts in small time slots. The front end of the receiver switches on only for the time interval when the data burst of a selected service is on air. Within this short period of time a high data rate is received which can be stored in a buffer. This buffer can either store the downloaded applications or playout live streams. The achievable power saving depends on the relation of the on/off-time. If there are approximately ten or more bursted services in a DVB-H stream the rate of the power saving for the front end could be around 90%. Information on DVB-H can be found at: www.dvb-h-online.org.

DVB is registered trademark of the DVB Project.

This press release is available in Brazilian Portuguese, Latin American Spanish, and Chinese languages by request or can be downloaded from the DVB website.



Bringing TV to Handheld Devices

The DVB-H specification for broadcasting to battery powered handheld devices, and a related set of specifications for IP datacast (DVB-IPDC), are the key enabling technologies for mobile television.

DVB-H is largely based on the successful DVB-T specification for digital terrestrial television, adding to it a number of features designed to take account of the limited battery life of small handheld devices, and the particular environments in which such receivers must operate. The use of a technique called time-slicing, where bursts of data are received periodically, allows the receiver to power-off when it is inactive leading to significant power savings. DVB-H also employs additional forward error correction to further improve the already excellent mobile performance of DVB-T.

The specifications for IP Datacast are essential to the convergence of broadcast networks and mobile telecommunications networks that will almost certainly be central to the majority of commercial launches of DVB-H services. The specifications cover the overall system architecture, electronic service guide (ESG), content delivery protocols, and the PSI/SI (Program Specific Information/ Service Information) that will make the establishment of convergent networks possible.

Some key DVB-H facts:

- An ETSI standard since November 2004. The specification (EN 302 304) can be downloaded from the ETSI website: <http://pda.etsi.org/pda/queryform.asp>
- It has been thoroughly tested around the world and DVB-H products are widely available
- It enables cost-effective implementation of broadcast networks
- It has the bandwidth capacity for rich audiovisual content, appealing to content providers and advertisers
- It is designed to use the VHF, UHF or L-Band spectrum in a variety of channel bandwidths
- Channel switching times of only 1 – 2 seconds

Tried & tested

DVB-H trials and pilot services have taken place or are currently running on five continents including the following countries: Austria, Canada, Netherlands, Czech Republic, Denmark, China, Italy, Malaysia, Portugal, Singapore, Finland, Switzerland, France, United Kingdom, Spain, Germany, Australia, South Africa, Taiwan, and the USA. The market for commercial broadcast services is expected to open during 2006. By the year 2010, analysts project over 74 million worldwide users for mobile television based on DVB-H technology. Leading mobile entertainment industry analysts, including Frost & Sullivan and IDC, project the mobile video market in the U.S will exceed \$1.5 billion by 2009.

Error-free functionality

As handheld devices have small antennas and require reception under varying signal conditions, a robust transmission system with solid error protection is needed. To meet these requirements DVB-H offers improved transmission by using an additional level of forward error correction (FEC) at the Multi Protocol Encapsulation (MPE) layer. This and the use of the optional 4K radio mode enable better Doppler performance meaning improved mobile signal reception, for example, in moving vehicles. MPE-FEC also improves impulse noise tolerance.



A quality TV experience

DVB-H makes use of high bandwidth channels with high transmission speeds. This means high quality and a wide selection of TV services can be made available to mobile users. There is no limit to how many people can receive the content within the coverage area. One-to-many broadcasting is a cost-effective means of delivering content media to large audiences, compared to one-to-one delivery over, for example, cellular networks where the data is sent separately to each recipient.

Utilising advanced video and audio codecs (H.264) allows up to 60 television or data channels to be broadcast over one DVB-H multiplex.

DVB-H offers a variety of business models and together with GPRS connectivity opens up the opportunity for TV-related interactive services such as voting, polls, gaming and e-commerce. Also, different pay-TV models like subscriptions and pay-per-view can be supported.

Value for all

Content will drive mobile television. Adopting DVB-H as the worldwide standard delivery platform will be beneficial to all value chain players, as it will drive market growth and enable open, competitive pricing on the various technology and service components. Existing players, both inside and outside the mobile content value chain, including the entertainment, publishing, finance/commerce and mobile service worlds are seeking to leverage their strengths into the converged multimedia market in order to capture a slice of the potential business.

In addition, it makes sense for telecom and broadcast industries to co-operate. Broadcast enables the cost-efficient delivery of rich multimedia content to consumers. Mobile networks offer the possibility to implement interactive services as well as the billing services necessary for pay-based business models. Broadcasters have existing content, while mobile operators have a direct customer relationship with millions of mobile users. With co-operation across traditional industry borders, there is a lot to win for all.

The DVB Project

The Digital Video Broadcasting Project (DVB) is an industry-led consortium of over 250 broadcasters, manufacturers, network operators, software developers, regulatory bodies and others in over 35 countries committed to designing global standards for the delivery of digital television and data services. The DVB standards cover all aspects of digital television from transmission through interfacing, conditional access and interactivity for digital video, audio and data. The consortium came together in 1993 to create unity in the march towards global standardisation, interoperability and future proofing.

To date, there are numerous broadcast services using DVB standards. There are hundreds of manufacturers offering DVB compliant equipment, which is already in use around the world. DVB dominates the digital broadcasting world. A host of other services is also on-air with DVB-T, DVB-S and DVB-C including data on the move and high-bandwidth Internet over the air. Further information about DVB can be found at: www.dvb.org.

Further information on DVB-H can be found at: www.dvb-h-online.org.