

Contact:  
Harold Bergin  
WHD Public Relations  
Tel: +44 20 7799 3100  
E-mail: harold@whdpr.com

## **THE COMBINED POWER OF SECOND GENERATION DVB STANDARDS & HEVC ON DISPLAY AT IBC**

### **Demonstrations Show The Unrivaled Performance Of DVB Platforms To Deliver Multiple Channels Of HEVC Encoded Content In UHD & HD Services**

**IBC, 12 - 16 September 2014, Amsterdam, Stand 1.D81**

**Amsterdam – 12 September, 2014** – Visitors to this year's IBC should not miss the opportunity to visit the DVB stand to witness firsthand the revolutionary effect the combination of second generation DVB standards and HEVC, the new video coding scheme, has on the delivery of Ultra High Definition and High Definition TV services. Demonstrations will show how the coding efficiency of HEVC can be used to increase the capacity of the new DVB-S2X satellite standard, as well as for the DVB-T2 terrestrial platform. Utilizing HEVC encoding, multiple UHD services will be delivered using DVB-S2X, and multiple HD channels over DVB-T2. This latest breakthrough in the road to UHD TV services follows the recent approval of the specifications for both the use of HEVC in the DVB environment and DVB-UHDTV Phase1.

The DVB-S2X demonstration will show how utilizing HEVC encoding will allow 4 Ultra HD channels to be transmitted over a 36MHz channel at a data rate of 100 Mbit/s. DVB-S2X offers an increase in spectral efficiency of up to 50% for professional applications. It provides more choices for roll-off factors as well as additional modulation and Forward Error Correction options that allow for the more efficient use of satellite transmission channels. It enables channel bonding of up to 3 satellite channels, which support higher aggregate data rates and allow for additional statistical multiplexing gain for services such as UHDTV.

The DVB-T2 demonstration will show up to 7 HEVC encoded High Definition channels being delivered in a single 8MHz DVB-T2 channel at 64 QAM and at a data rate of 26.56 Mbit/s. This very robust transmission mode works well for indoor reception using small indoor antennas, as well as for portable reception. Both fixed reception and portable reception will be demonstrated.

The arrival of HEVC is a logical time for mature European DVB-T markets to consider switching to DVB-T2 and to introduce HEVC encoded services at the same time. The UK, for example, which already uses DVB-T2, would more than double its number of HD channels from 5 per multiplex to around 12 by switching to HEVC, thanks to the combined

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efficiency of HEVC, DVB-T2 and statistical multiplexing. Germany plans to launch DVB-T2 services with HEVC using the robust indoor reception mode to deliver up to 7 HD channels per multiplex to fixed and mobile receivers. A number of other European countries are now actively making plans for combined roll-outs.

DVB would like to thank DVB Member companies and others who have generously contributed equipment and content to the demonstrations. They include: Arte, Creonic, DekTec, EBU/Eurovision, Ericsson, Fraunhofer HHI, Hispasat, IRT, Newtec, Pace, Rai, Rohde & Schwarz, SES, Sony, TeamCast, Technicolor, Thomson Video Networks, Vestel and Work Microwave.

Visitors to the stand will find a host of information available on the family of DVB standards. Representatives and technology experts are on hand to answer queries and provide information on the implementation of the world's most successful set of technical standards for DTV. DVB's open, interoperable standards form the basis of services on every continent with well over a billion receivers shipped.

The official IBC 2014 Conference Program includes many DVB related topics. As part of the Paper Sessions, DVB has produced in association with the IBC, "Advanced transmission techniques for satellite and terrestrial broadcasting" at 12:00 - 13:30 on Saturday, 13 September.

### **About DVB-T2**

DVB-T2 is the world's most advanced digital terrestrial television (DTT) system, offering more robustness, flexibility and at least 50% more efficiency than any other DTT system. It supports SD, HD, UHD, mobile TV, radio or any combination thereof. Like DVB-T its predecessor, DVB-T2 uses OFDM (orthogonal frequency division multiplex) modulation with a large number of sub-carriers delivering a robust signal, and offers a range of different modes, making it a very flexible standard. DVB-T2 uses the same error correction coding as used in DVB-S2 and DVB-C2: LDPC (Low Density Parity Check) coding combined with BCH (Bose-Chaudhuri-Hocquengham) coding, offering a very robust signal. The number of carriers, guard interval sizes and pilot signals can be adjusted, so that the overheads can be optimised for any target transmission channel.

DVB-T2 has now been adopted or deployed in 70 countries. This well-established standard benefits from massive economies of scale and very low receiver prices.

### **About DVB-S2X**

DVB-S2X is an extension of the DVB-S2 specification that provides additional technologies and features. DVB-S2X is to be published as ETSI EN 302 307 part 2, with DVB-S2 being part 1. S2X offers improved performance and features for the core applications of DVB-S2, including Direct to Home (DTH), contribution, VSAT and DSNG. The specification also provides an extended operational SNR range to cover emerging markets such as mobile applications. The most relevant features for DTH are channel bonding and finer granularity of modulation and FEC options combined with sharper roll-offs of 5% and 10% (in addition to 20%, 25% and 35% in DVB-S2). Channel bonding of up to 3 satellite channels will support higher aggregate data rates and allow for additional statistical multiplexing gain for high data rate services such as UHD. The mandatory implementation of VCM (Variable Coding and Modulation) in receivers offers the possibility of increasing the spectral efficiency for UHD services, while guaranteeing service continuity during heavy rain by simulcasting highly protected SD components. A finer granularity of modulation and FEC options allows for improved operational flexibility.

DVB-S2X has been introduced at the same time as the new efficient HEVC video coding scheme. It is expected that new satellite receivers will combine these two technologies to make the delivery of HD and especially UHD services more efficient.

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### **About DVB**

Digital Video Broadcasting (DVB) is an industry-led consortium of over 200 broadcasters, manufacturers, network operators, software developers, regulators and others from around the world committed to designing open interoperable technical standards for the global delivery of digital media and broadcast services.

DVB standards cover all aspects of digital television from transmission through interfacing, conditional access and interactivity for digital video, audio and data.

DVB dominates the digital broadcasting environment with thousands of broadcast services around the world using DVB's standards. There are hundreds of manufacturers offering DVB compliant equipment. To date there are over a billion DVB receivers shipped worldwide.

Further information about DVB can be found at: [www.dvb.org](http://www.dvb.org), [www.dvbservices.com](http://www.dvbservices.com) and [www.dvbworld.org](http://www.dvbworld.org).

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