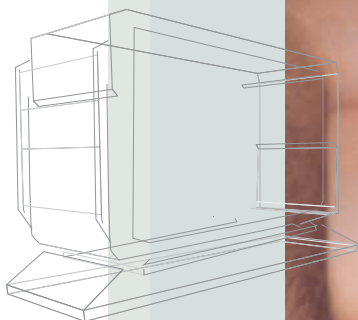
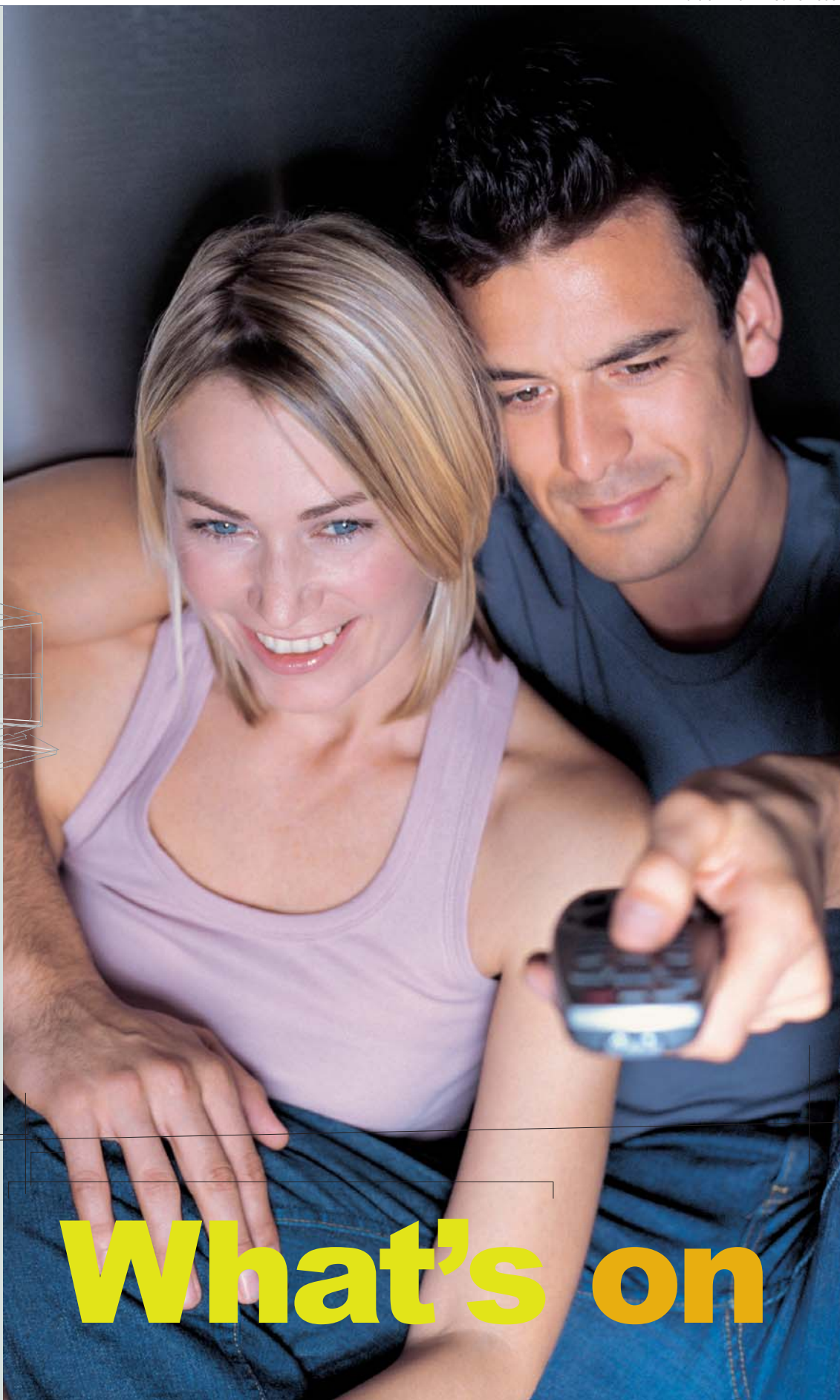


DVB - SCENE

Tune in to Digital Convergence



14



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The Standard for the Digital World

This issue's highlights

- > HDTV Format Wars
- > PVR Update
- > Home Networking
- > Portable Content Format
- > Analysis: Japan DTT Roll Out
- > MHP In Austria
- > Market Watch

What's on



A word from the DVB Project Office

TOPICAL ISSUES

Peter MacAvock, Executive Director

DVB-SCENE welcomes readers old and new to the 14th issue. Many of you will have noticed that we try to bring you news on key DVB technological developments and news from those who have to deploy them in the market. You'll find this issue no different with articles on many topical issues such as 720p HDTV, PVRs, portable content formats and home networking amongst many others. We're even bringing you information on DTV in Japan and mobile TV broadcasting in Singapore, China and Taiwan.

One of the major DVB work items at present is that of portable content format (PCF). Bringing together experts

from surprisingly diverse areas, PCF is an effort to define a common set of principles associated with authoring content for different iTV platforms. The broadcasting industry is currently faced with authoring iTV content for different interactive television platforms. The situation is no more complex than in UK, with one standardised platform and three proprietary platforms widely deployed. PCF aims to facilitate the process of authoring content in this multi-platform world. It comes from a mature set of requirements acknowledging that MHP is not going to be the only iTV platform in the market for some time.

Again with taking a look into the DVB connected home of the future, there's a growing realisation that home networking - particularly wireless - plays a pivotal role in the converged home. DVB doesn't plan to develop its own technology in this area per se, rather to observe work going on in other fora like DLNA and the DSL Forum with a view to incorporating this into a set of guidelines

for DVB services. We tried this before - but could not get consensus on a single solution for DVB, and therefore suspended the efforts pending substantial developments elsewhere. Things are now very much on the move, with 802.X based technologies in pole position to form the backbone of any DVB wireless networking solution. Thorsten Herfet (Intel) deals with some of the issues and where DVB plans to add value to the efforts of others.

PVRs are also a central part of the converged home, and are already forcing change in the way broadcasters think. DVB World in Dublin heard that BSkyB's HDTV set-top box will include a PVR suggesting the importance this device has gained since large hard disks became affordable. The challenge for standardisation is to keep up. DVB has just finalised a set of MHP PVR specifications updates. This milestone effort has been achieved thanks to close cooperation with our CableLabs colleagues in the US.

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NEW MEMBERS

- Elti d.o.o.
- Himax Technologies, Inc.
- Silicon Image
- Sony Ericsson Mobile Comm. AB
- Streamezzo
- TrueSpan Inc.
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HDTV CHALLENGE

Bernd Reul, Director of Marketing and Business Development,
Scientific-Atlanta Europe NV



The appeal of HDTV amongst Europe's broadcasters and operators is growing. Organisations are reassessing their business models and are looking at how HDTV can increase ARPU (average revenue per unit). The popularity for the technology has been fuelled by the success of high definition broadcasts for movies and events, both in the US and in parts of Asia coupled with the steady reduction in the price of plasma and LCD TVs. However, operators and broadcasters are likely to face content production and logistical challenges. There are several options for the distribution of HD content between studios and event sites. If real-time transmission is needed, for example a sporting event, some signal compression should be applied and the systems must support the existing telco or satellite infrastructure. Using moderate DPCM (Differential Pulse-Coded Modulation) compression, two HDTV signals can be transported on an STM-16 (2.4Gbit/s) link. This however is still expensive and HDTV SDTI (270Mbit/s) is an alternative. Increasingly studio equipment such as cameras and tape recorders support various HDTV compression formats enabling the transport of HDTV on an SDTI link, which can be transported cost effectively via 2 STM-1 links.

The most cost effective bandwidth solution is MPEG-based and can be scaled for any network, covering any distance using DVB-ASI interconnects for satellite or terrestrial networks. While this offers a slightly lower video quality than uncompressed (mezzanine) HD solutions such as HD-

SDTI, it is widely accepted to provide sufficient quality for one-time 'event' broadcasts. The distribution of HD presents an equal challenge for all broadcasters and service operators, whether over cable, satellite, terrestrial or telco networks such as xDSL and FTTx.

While networks such as cable and satellite lend themselves more easily to HDTV, new developments in advanced video compression technologies like H.264 make it possible to broadcast high definition content over DVB-T and over next generation DSL networks. However, the physical lack of terrestrial spectrum would only allow for a few HDTV channels on DVB-T which in return also would reduce the number of SDTV channels. For xDSL networks providing HDTV will pose a challenge when providing more than one channel per home in addition to simultaneous high speed Internet connection even when new technologies like ADSL2+ are used.

Today's digital distribution systems can easily carry HDTV (given there is sufficient bandwidth available) and only need a suitable encoder and set-top box. The step from digital SDTV to digital HDTV will be smaller than the switch from analogue TV to digital SDTV in terms of the distribution systems - to the end user the switch will seem remarkable. H.264 promises up to 40-50 percent better bandwidth efficiency than advanced MPEG-2 compression and ensures that picture quality is retained even at low bit rates like 7-8Mbit/s. Retaining picture quality is vital - any significant picture

degradation during broadcast would defeat the point of offering it.

Most broadcasters and operators will need the assurance of an increase in ARPU to offer HD content. HDTV will be an expensive addition for free-to-air broadcasters who don't have pay-TV models and for some pay-per-view operators offering HD will still be bandwidth usage versus revenues. High definition broadcasts over cable will, in most cases, override the cost disincentives of higher operational expenses - due to high bandwidth available on many cable networks and ownership of networks. Offering HD content will also be in synergy with existing on-demand and pay-TV content models.

For CPE equipment, it will be difficult to make the case for offering or subsidising a brand new box supporting only HDTV. However, a new box capable of both DVR and HDTV is not much more expensive than a DVR only box. Therefore, attractiveness of DVR can be used to drive the deployment of new boxes and HDTV can ride on this wave.

The 2006 FIFA World Cup in Germany will be shot in HDTV and every match will be available in both HD and SD. It will likely be used by the Consumer Electronics Industry as the impetus for take up of large flat screen sales and thus HDTV in Europe. Not only will this provide broadcasters with an insight into the true potential of high definition television but it will also show how HDTV content can be broadcast to a wide range of audiences.



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PVR UPDATE

Paul Bristow, Chairman, DVB-PVR Group

A lot has happened in the year since I last wrote about progress in the DVB-PVR space. In the market, PVR shipments have continued their steady progress, roughly tripling last year to around 11 million units and expected to triple again in 2005. Both vertical and horizontal markets are benefiting from PVR deployments, with many DVD/PVR combination products available in retail.

Within DVB, the TM-GBS (Generic Data Broadcasting & Service Information Protocols) group has released TS-102-323, specifying how to carry TV-Anytime schedule information in DVB streams, finally allowing broadcasters to have an alternative solution to EIT (Event Information Table) schedule, which, as many have pointed out, is not the most bandwidth-efficient format available. This new specification continues the DVB toolbox tradition, by allowing a broadcaster to replace EIT schedule with TV-Anytime or have both at the same time. This even goes as far as having part of the same schedule information carried in EIT schedule and part in TV-Anytime, maintaining backwards compatibility for the installed base of equipment.

The TM-AVC (Audio-visual Coding Formats) group has released the guidelines for use of H.264 content, including the necessary recommendations for the configuration of H.264 video encoders for supporting PVRs. HD support using either MPEG-2 or H.264 is no problem, either for MHP or non-interactive PVRs.

In the MHP world, the release of the MHP-PDR (Personal Digital Recorder)



specifications by TM-TAM (Technical Aspects of MHP) is allowing broadcasters to get on with interactive PVR-aware applications, as I described in DVB-SCENE issue 10. Because of the commercial demand for access to these specifications, they have been released as DVB Blue books in advance of their ETSI specification release. You will find two documents, A088 for the GEM Common Core DVR APIs (created with CableLabs and also forming part of the OCAP DVR specification) and A087 for the MHP specific parts, on the DVB website. Implementation of these two specifications, along with either MHP 1.0.3 or the recently released MHP 1.1.2, is necessary to create a compliant MHP-PDR product.

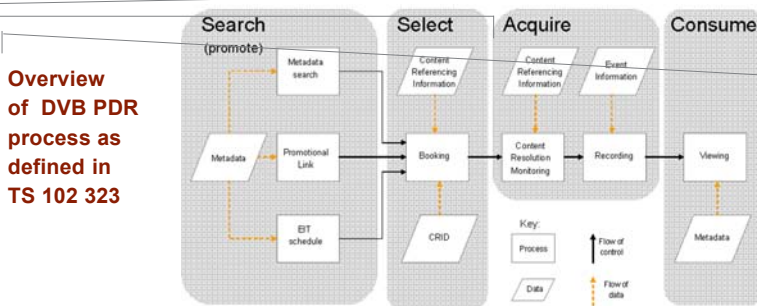
Speaking of MHP 1.1.2, this version of MHP includes support for stored applications which makes a great deal

of sense in a PVR which has Gigabytes of disk space. Using stored applications can significantly enhance iTV capabilities and performance, while dramatically saving bandwidth.

The first products based on MHP-PDR have already been announced, and are expected to be deployed within months. The first applications are very likely to be that broadcaster favourite, Electronic Programme Guides, but now, finally on MHP, with the 'record' feature. Probably telescoped advertising will be one of the very next applications. There is now evidence that interactive telescoping advertisements – where pressing a button pauses live TV, and takes you to a longer video brochure for the product or service you are interested in – are more effective than repeated viewings of normal adverts, and require an interactive PVR environment like MHP-PDR.

What's next? DVB is currently working on standardised solutions in home networking allowing networked PVR solutions in the home leading to my favourite feature: pause the movie downstairs, go upstairs and resume it in the comfort of your bedroom. All using standards from the DVB toolbox.

DVB-SCENE : 06



ON IN AFRICA

Martin Ungerer, Engineering Group Manager, MultiChoice Africa

The Sub-Saharan pay-TV operator MultiChoice has recently launched Southern Africa's first DTT service in Namibia. The service based on the 8K format, transmits six encrypted services to approximately 3000 subscribers in Namibia's capital, Windhoek. The design was developed based on the lessons learnt elsewhere coupled with a little bit of over engineering. The previous analogue system transmitted 20 watt and it was decided to go against what theory dictates and increase the power to 60 watt, up by 4.5 dBs! The higher power and a 2/3 FEC makes this a very rugged robust system to cater for possible inferior quality home antenna installations. This system was used as the ideal test bed for possible future projects. The 3000 analogue subscribers were more than happy to participate in the project and now enjoy the benefit of improved picture and sound quality from the digital signal.

The encryption is done at the head-end in Johannesburg, South Africa and the EMM's (Entitlement Management Messages) and ECM's (Entitlement Control Message) along with the services are sent via satellite to Namibia. The same 'old' antennas system consisting of a four tier, four panel Kathrein system was used and only the antenna splitter had to be upgraded to cater for the higher powered digital carrier.

The biggest challenge was to find a transmitter manufacturer willing to customise their product to the odd frequency we had to use i.e. channel 13. Because of the lack of spare frequencies, there was no 'dual illumination' period, and it had to be a switch-off, switch-on approach. The decoders were pre-loaded with the default parameter settings which made the process much easier, very much plug-and-play.



HOME NETWORKS

Prof. Dr.-Ing. Thorsten Herfet of Intel and Chairman of TM-AHG on Wireless In-Home Networks

Although it's been on the DVB agenda for some time and having a broad base of interest, with several specifications produced, home networking within DVB has not been a great success story. But things are changing.

Problem one was with infrastructure. DVB transmission specifications for satellite, cable and terrestrial, as well as DVB's interaction channels exploit existing analogue and digital infrastructures. You could say that DVB builds luxury, high-tech cars that are able to drive on these existing roads. Within the consumer's home, however, this infrastructure had not been available in a predictable or harmonised manner as required for DVB to act on.

Recent changes were brought about by the Digital Living Network Alliance (DLNA) when it published its Home Network Guidelines V1.0; a protocol and certification suite that relies on IP version 4, Universal Plug and Play, Universal Plug and Play Audio Visual and HTTP transport protocols and defines an interoperability framework for media including still images, audio and video. They have now built the road that DVB's cars can drive on.

The second problem had to do with architecture. While service providers and content owners tend to interpret the home network as being the last segment of the delivery chain, end device and network equipment manufacturers favour viewing the home network as the local distribution behind the content acquisition point. Whereas the first model splits the antenna cable, the second one disperses the set-top box.

We have witnessed the rapid

penetration of LANs in today's homes, which has been motivated by connecting multiple PCs and sharing broadband Internet access. The distribution of private audio visual content is a well perceived co-product. Fast, IP-based networks in the wired (Ethernet, 802.3u) and wireless (WLAN, 802.11abg) domains are state of the art. The customer is beginning to disperse the set-top box!

Content Management / Copy Protection (CPCM) is the third problem. Digital Home Networks must not unintentionally enable illegitimate use of copyrighted content. The fact that no trusted CPCM solution is in place has delayed the advent of media networks significantly.

While the digital output of copyrighted content is accepted and specified for several domains already (e.g. for 5C-protected 1394 outputs of DVD players or for 'HD ready' displays) and digital rights management (DRM) protected content (Windows Media DRM, iTunes DRM or other) can be distributed in the home already (but of course only played on licensed devices), more sophisticated CPCM systems are under development in DVB and the DLNA envisage solutions within the time frame of a year.

These are big changes compared to the situation of DVB home networking of several years ago. Consequently one can now observe a new push to make the reality of digital television part of the networked era.

The DVB Commercial Module's Ad Hoc Group on Home Networks is finalising commercial requirements and has unanimously agreed on making IP and DLNA the baseline architecture, the DVB Technical

Module Ad Hoc Group on Internet Protocol Infrastructures is planning its Phase II that includes local distribution that will exploit the service protection and discovery, as well as IPI's transport mechanisms in the home network, DVB-CPCM is designing a toolbox for content management and protection and DVB-WIN (wireless in-home networks) is evaluating a restart given the opportunities that fast wireless LANs now offer for unwired digital TV consumption in the home. There's a lot to contribute and DVB is ready and willing to do it!



Thorsten Herfet is Intel's Consumer Electronic Standards Representative and holds a Professorship on Telecommunications at Saarland University. Prior to this he was responsible for advance development within Grundig, Germany and participated and chaired several collaborative R&D projects in the area of home networks.

PORTABLE CONTENT FORMAT

Today's digital television platforms offer a wide variety of interactive services. To the casual observer, this may appear the result of mature production processes across the industry. However, the reality is that the majority of interactive content is developed in non-portable ways, specifically targeting individual platforms. The resulting high production costs mean that interactive content is often limited to high profile programming and revenue generating propositions.

The DVB's portable content format (PCF) will create a host of new opportunities for the creation and delivery of interactive services, by increasing service portability and so

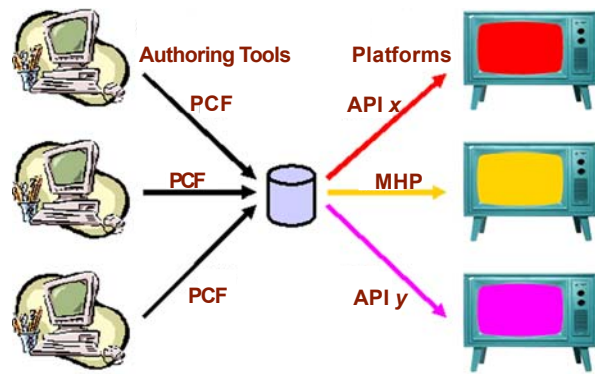
reducing production costs. With the PCF, interactive content can be authored and deployed without knowledge of a viewer's interactive technology. A service description can be interchanged business-to-business in a consistent way, whether it is an enhanced TV proposition, such as for an entertainment programme or an advert, or providing t-commerce/e-government services.

The PCF is a high level model for the description of a service author's intended viewer experience. It can be used for business-to-business interchange of service descriptions between both:

- content providers & content providers;
- content providers & platform operators.

The portability of the PCF across interactive TV technologies is analogous to the portability of Adobe's Portable Document Format (PDF) across computers. Rather than representing printed documents, the PCF describes interactive services that can be rendered as a viewer experience on interactive television receivers.

DVB members with significant experience of deploying interactive services and technologies, including the BBC, BSkyB, NDS, OpenTV, Liberate and NTL, are developing the PCF. The initial version of specification will be ready for submission to the DVB technical module by late summer 2005 and the first tools are expected in summer 2006.



Why are we developing an interactive TV specific content format? In the current marketplace, platform operators are more likely to choose an interactive technology based on wider commercial factors, rather than the availability of interactive content. As a result, many different interactive technologies are deployed globally. These technologies are not interoperable. Even where two platforms deploy the same underlying technology, network variations can introduce incompatibilities, e.g. the availability of a return path. This means

- Upstream of the platform by establishing a standard for interchange of interactive TV content that has the potential to make this as portable as digital video and audio. This is the aim of the PCF.

The PCF is being developed to enable automatic translation into platform specific formats, leading to a significant reduction in cross platform costs. This means that services developed for non-MHP platforms can more easily be deployed into MHP platforms, even if

"...developed to enable automatic translation into platform specific formats..."

that service distribution beyond a content provider's primary market often requires significant re-authoring, becoming un-economical.

DVB has taken two different approaches to addressing this issue:

- Within the platform by developing a standard interactive technology to be deployed everywhere, the Multimedia Home Platform (MHP). Despite an increasing number of deployments of MHP, the majority of interactive TV receivers deployed today do not support MHP. Nor do they have a hardware footprint that would allow them to be upgraded to support MHP.

this was not the original intention of the content provider. In this way, the PCF is not an alternative to MHP, it is a complementary technology.

The DVB's PCF will:

- enable much wider interchange of interoperable interactive service descriptions;
- be capable of representing 80 percent of existing services with benefits to the other 20 percent.
- stimulate new interactive television business applications;
- be complementary to existing technologies, including MHP.



From L-R: Richard Cartwright, Jeff Hunter, Toby Steele, Johann Rosser.

The authors of this article all work for the BBC's R&D department. They represent the BBC at the DVB-PCF Technical Module Subgroup and have been developing cross platform authoring technologies for the BBC for five years. At IBC 2003, the team demonstrated a cross-platform system that could publish a portable interactive service description to platforms including: MHP, MHEG-5, OpenTV and Liberate.

ANALYSIS: JAPAN

Alexander Shulzycki, Senior Media Analyst, EBU

Japan is leading the way for DTT in Asia. But now, over a full year after launch, how is the platform doing and what are its prospects?

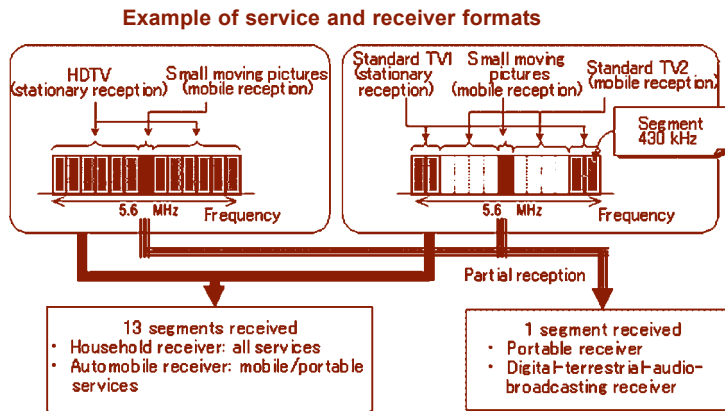
DTT started in the urban areas of Tokyo, Nagoya and Osaka in December 2003, with public broadcaster NHK, five national commercial networks, and 11 regional broadcasters offering free digital channels alongside analogue simulcast. Coverage is expected to be half of national households by the end of this year. By the end of next year all stations are required to launch DTT and switch-off is planned in 2011.

However, at the start of 2005, cumulative sales of DTT-ready TV sets and set-top boxes was 2.23 million¹, well under 5% penetration of total TV households. Many believe that the high cost of household HDTV equipment and consumer confusion have dampened more widespread acceptance.

Although the service model is mixed (see chart) DTT is very much HDTV focused as in the United States even though Japan has chosen a more European, COFDM-based standard: its own ISDB-T. The frequency usage plan² gives broadcasters some flexibility but most have chosen to maximize 1080i format exploitation. Operators tend to use HDTV for the prime time and multichannel SDTV service at other times.

High network investments

While expensive equipment is hampering growth on the consumer side, tremendous infrastructure investment is slowing development for many broadcasters and network operators. The estimated combined



Source: NHK

investment of all broadcasters for the full conversion is estimated at over \$9 billion. Public broadcaster, NHK, estimates its own capital spending requirements at over \$3 billion, well over half of its gross annual revenue from licence fees. The financial burden may be especially troublesome for the regional broadcasters. Fortunately, the government has acknowledged the issue and indicated that it would amend legislation to offer tax breaks and other incentives.

Too many things happening at once?

As broadcasters are busy maintaining analogue broadcasts while windowing their SD and HD digital broadcasts, they are also keen on diversifying their transmission portfolios into content delivery to mobile phones, laptop computers, and PDAs. Digital broadcasting for car navigation systems and car televisions is also on the agenda. Additionally, datacasting has

figured prominently in company announcements but with few details on actual services so far.

If that wasn't enough, film production has become a strategic priority for most major networks - Fuji TV, Tokyo Broadcasting System and Nippon Television Network have all increased their stakes in this business sector, consequently putting more pressure on financial resources.

Mobile services

DTT licences were granted on the basis of existing network ownership with each broadcaster retaining the right to use the allocated licensed spectrum. Moreover, these licences cover all television services which effectively excludes telecom and mobile operators from independently launching services. By the end of this year several broadcasters will launch the 1-segment broadcast in Tokyo, Osaka and Nagoya. It will be a free service at the initial stage, and the broadcast content will be a simulcast of the DTT channels with some data services. Broadcasters hope to develop a commercial market initially through data/interactive services.

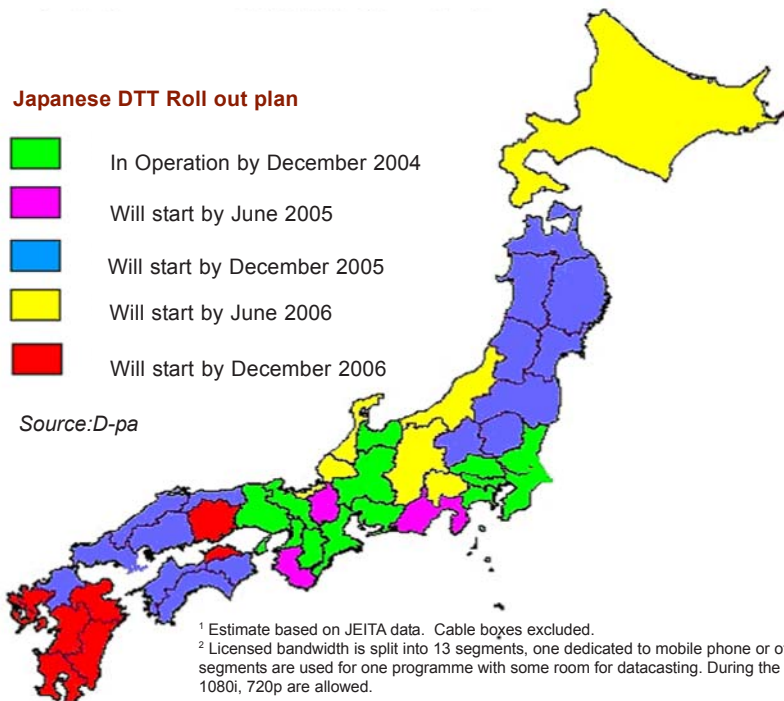
Outlook

Government and industry planners have set a challenging timetable for DTT in Japan: 10 million households in 2006; 24 million households by the Beijing Olympics in 2008; and 48 million TV households by 2011. Although early benchmarks seem to indicate progress if off pace, the government has already signalled its willingness to act, not only by taking financial measures but also by intervening with regulatory and deregulatory steps. Japan mastered the art of industrial policy during the last century and there is reason to believe that with that legacy and with a national commitment, its goals can still be met.

Japanese DTT Roll out plan

- In Operation by December 2004
- Will start by June 2005
- Will start by December 2005
- Will start by June 2006
- Will start by December 2006

Source: D-pa



¹ Estimate based on JEITA data. Cable boxes excluded.

² Licensed bandwidth is split into 13 segments, one dedicated to mobile phone or other portable device reception. For HDTV, the rest of the segments are used for one programme with some room for datacasting. During the SDTV window 2 - 3 programmes available. 480i, 480p, 1080i, 720p are allowed.

DIGITAL DREAMS

Contributed by the Media Development Authority, Singapore



In July 2003, Singapore announced its Media 21 blueprint for the development of the media industry here. The blueprint positions Singapore as a Global Media City, an international centre for the creation, trade and distribution of media services and projects. Though a relatively young shoot, the Media 21 vision is starting to bear fruit – the industry's contribution to the country's GDP in 2004 was 1.7 per cent, an increase from the 1.56 per cent contribution in 2003 when the Media 21 blueprint was launched.

The Media 21 development strategy adopts a holistic approach to developing Singapore's nascent media industry via five routes – developing the country into a media business exchange, exporting 'Made-by-Singapore' content, internationalising Singapore media enterprises and augmenting media talent.

Within the Media 21 masterplan, a key area that Singapore has targeted for attention is digital media. Specifically, the country's plan to become a digital media hub encompasses animation, gaming and digital technology. The arrival of international big names like Lucasfilm, BKN International and Koei Animation thus far attest to Singapore's competitiveness as an international digital media centre in the making, thanks to the country's vigorous intellectual property regime, strong infrastructure and pro business environment.

Already, the country is a test bed for new digital technologies. For instance, Singapore's Media Corporation of Singapore Pte Ltd (MediaCorp) was the first terrestrial broadcaster in Asia to launch the pilot DTV service, MDigital, and mobile DTV service, TVMobile, in 2000 and 2001 respectively.

TVMobile Pte Ltd, a subsidiary of MediaCorp, was the first broadcaster in the world to offer commercial mobile DTV services on public buses, providing commuters with on-board, real time entertainment en route to their

destinations. This service was extended to taxis when Smart Automobile fitted its fleet of taxis with TVMobile.

Additionally, local cable operator StarHub Cable Vision launched its digital cable pay-TV service in May 2004. The service changed consumers' viewing habits from passive to active viewing, and provided viewers with programme information like cast lists and synopses without disruption to the channel currently being watched, as well as quick visual searches of programmes being aired.

To spur the digital media industry's growth overall, the Media Development Authority (MDA) has set aside S\$12.5 million to support digital content and digital technology development. The MDA recently announced an initiative with StarHub to support companies seeking to bring digital applications they have developed to the market.

Under this Digital TV Applications Initiative, the MDA will be providing funding support through its Digital Technology Development Scheme while StarHub will provide a digital cable platform for applicants to showcase their products.

Many dreams often come and go but the vision to develop Singapore into a Global Media City is not one that can be easily forgotten. With the industry and government working together to make greater waves in the international media scene and closer ties being established around the world, the island state looks set to making big leaps in the world's media industry. So keep a lookout for the day where the word media becomes synonymous with Singapore.



Pictures courtesy of Scrawl Studios Pte Ltd, Agogo Corporation Hong Kong Ltd, and Big Communications, Flux Animation.

In My Opinion - Trevor Huang

DOES MOBILE TV MAKE SENSE?

The first DVB-H trial in Asia is going to kick off in Taiwan this summer. How will consumers here in Taiwan and China think about the coming mobile TV? I have done some studies about this issue, and this article is going to talk about what I found.

Price, Price, Price!

Just like the Taiwanese electronics industry, which is always sensitive about cost issues, when I asked my interviewees what they thought about watching TV on their mobile phones, they often answered with another question: What about the price?

This may indicate that they would like a mobile TV device, but are not prepared to pay a lot for it. Most of my interviewees told me that they would like to purchase one if the device didn't cost more than 500 USD. On the other hand, those who have a regular job would be prepared to pay more money for it – around 650 USD.

But, the broadcasters and network operators may not be able to use mobile TV as a new window to gain more income. Consumers consider the bill they might receive each month as a greater priority issue than the price of the devices. Most of the people I spoke to would like to be able to watch TV on their mobile phone for free but if forced to pay for it they would not be willing to spend more than 5 USD per month. What is even more considerable, is a

“...have relatively high incomes and are willing to be early adaptors of new technologies.”

certain portion of them stated that they would not want to subscribe if they were asked to pay an additional fee every month. This figure is close to 30 percent.

The sample consisted of students, lawyers, engineers, and news reporters and most of them are under thirty years old. They have relatively high incomes and are willing to be early adaptors of new technologies. My survey shows



DVB-SCENE : 11

Trevor Huang is the Reporting Editor for CompoTech Asia, the monthly magazine published by LOOK Publication Inc, which focuses on semiconductor devices and market trends in the electronics industry in Asia and Greater China. He was born in Taipei City in 1980, and graduated from the Department of Philosophy, National Cheng Chi University with a Bachelor degree.

Founded in 1999, CompoTech Asia is mainly published in Taiwan, the leading ODM/OEM center and since 2002 has published a China edition, CompoTech China. Further information on CompoTech Asia can be found on their website: www.compotechasia.com.

that they do appreciate the idea, but they still want to enjoy it at a very low price.

Bigger screen, more integration

Apart from the price issue, I also asked

them what kind of features or specs would make a mobile TV device more attractive to them. Mostly the answer is a bigger screen, whilst some of them insist that mobile TV devices should have a screen equal to or larger than a PDA. Like the service fee per month, if mobile TV devices do not have a bigger screen, some of them are adamant that they would not be interested in mobile TV. As well as a bigger screen, a few

of them think that a mobile TV devices should certainly offer stereo audio as an optional feature enhancement. Some go as far as wanting more function integration with MP3 play back, digital video recording and a megapixel still camera, etc.

What a challenge!

It seems consumers here won't pay very much money for mobile TV devices and services. How do you implement this complex technology without boosting cost? What business model could be profitable for operators and content providers and still provide a free service? I think we need to find the answers to these questions.

Setting the stage for DVB-H deployments in Asia-Pacific

MOBILE ASIA

Mauro Montanaro, Vice-President, Sales and Channel Management, Nokia Multimedia, Asia-Pacific

Mobile TV is the true convergence of the cellular and the broadcasting domains. With the possibilities of 30 to 50 TV channels on the mobile device, mobile TV in fact, brings the broadcast world to the mobile generation!

With lifestyles getting more fast paced, the mobile phone is one's companion throughout the rushed and the quieter moments of the day. It is difficult to imagine leaving home without your mobile phone today. In addition to being an enhanced productivity tool and a lifestyle statement, today's feature rich mobile devices are also good entertainment devices on the go. Today, the mobile device more than ever, is slowly integrating into everyday life as an 'idle-moments' killer. It is not an uncommon sight anymore to see people well engrossed with their devices while commuting or even waiting for someone.

With TV switching on in the mobile devices, new possibilities and opportunities arise. New viewing times and reaching out to a new set of audience for broadcasters are a certainty. In addition to broadcasting to households, the opportunity will increase with broadcasting to

handhelds!

Mobile TV will enable interactivity via a return channel using the cellular networks. Interactivity, which essentially is a personal experience, will enable the broadcasters and mobile operators to engage more with the audience and at a relevant instance on their personal handheld devices. A richer end-user experience follows with broadcast providing the triggers for increased cellular traffic and usage.

The Asia-Pacific region has a strong mobile services culture. Many Asian conglomerates also have the advantage of a good understanding of both the media and telecommunications businesses by virtue of their business interests. Most of the content is local, which also helps in content rights negotiation. All these factors combined are conducive to bringing mobile TV offerings to the market faster. Needless to say the right regulatory framework has to be in place.

The DVB-H standard, which mobile TV is based upon, is a subset of the current DVB-T open standard that has been implemented or chosen by many



countries within the Asia-Pacific region. China, Australia and Singapore have already deployed commercial services on DVB-T. In fact the public transport system in Singapore and major cities in China like Beijing, Shanghai and Guangzhou are equipped with DVB-T services. Countries like India, Vietnam, Brunei, New Zealand and Thailand are in either test or pilot phase. Recently, The Bridge Networks Pty Ltd announced their intention to trial mobile TV over DVB-H in Sydney around mid 2005.

In this convergent environment, the success of mobile TV does not rest on any one party alone. It requires the cooperation of broadcasters and mobile operators working together in the right regulatory environment to make the most of this exciting opportunity.

DVB-SCENE : 12



STRATEGIC ALLIANCE

With the support of Taiwan's government authority, CMC Magnetics together with technology partner Nokia, local Taiwan TV broadcasters, radio stations and mobile operators have announced the formation of the Mobile TV Strategic Alliance. The Alliance aims to create a mobile TV ecosystem based on DVB-H technology to enable a true digital mobile lifestyle in Taiwan. The initiative will enable mobile devices to receive broadcast digital TV directly and conduct interactive communications via mobile networks.

The Mobile TV Strategic Alliance's first task is to develop a commercial trial in mid 2005 which will lead to a commercial service launch in 2006.

"Mobile TV is bringing together the telecom and broadcast industries to expedite the convergence of telecommunications, Internet and digital broadcast networks," said Bob Wong, Chairman of CMC (left). "With the arrival of the new digital entertainment era, people will be able to access entertainment and receive information anytime, anywhere".

!TV4 GRAZ

Wolfgang Rittsteiger & Rudolf North, Siemens project management team !TV4GRAZ

March 2004 witnessed the introduction of digital terrestrial TV in Austria. Within the framework of the '!TV4GRAZ' Project, 150 households in Austria's second largest city were equipped with MHP set-top boxes in order to test audience acceptance of added value applications based on the MHP standard. The project's special features were the large scale integration of the return channel and the use of what is called an Interactive Application Centre (IAC) to enable both interactive TV and new business models.

Under the auspices of the RTR (Austria's regulatory body), an SFN network was built in Austria's second largest city, Graz, the capital of Styria to supply its citizens with digital terrestrial TV. This was the first step in

"...numerous TV formats are already successfully relying on interactive features..."

line with Austrian planning, according to which terrestrial broadcasting should become fully digital by 2010.

While elsewhere TV viewers being offered DVB-T, the advantages were increased portability and a broader range of programmes, the main added value in Austria was – right from the start – interactive MHP applications, which also include the active use of a return channel.

In addition to TV channels ORF1, ORF2, and ATV+, which are already being offered on a terrestrial basis throughout the country, a fourth channel was set up and other

broadcasters, such as Pro7 Austria, Sat1 Österreich, goTV, Steiermark 1, Aichfeld TV and TW1, were invited to join the pilot project with their programmes. The key condition for becoming part of channel 4, which was also called !TV4GRAZ, was to make attractive MHP applications available to complement the programmes.

The majority of programme providers relied on the portal application developed by Siemens. Given adequate content management, it is possible to supply the MHP

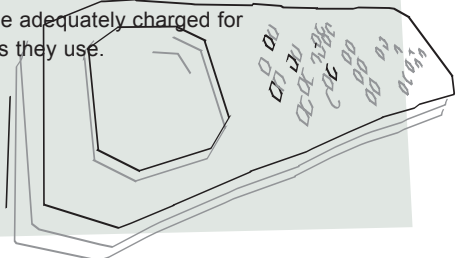
literate segments of the population an attractive means of access to electronic information.

All the user-initiated return channel activities via the Internet have to be terminated in the network and also be instantly confirmed in some cases. That is why it makes sense to speak of an interaction channel that needs to be established between a set-top box and a specific data centre. In the !TV4GRAZ Project, Siemens successfully deployed its own data centre, the Interactive Application Centre, and ensured that the

application. This is specially branded for the particular broadcasting company, with contents and functionalities such as voting or ordering available at suitable points in a flexible manner. Programme providers can offer their viewers an always-up-to-date platform from where they can retrieve news or situational information in a similar way to an Internet website. The big advantage for consumers is that the MHP application is so easy to use – all they need is their familiar remote control. Therefore, MHP makes an important contribution towards reducing the digital divide by giving non-Internet-

interactive TV circuit was closed via MHP set-top boxes. As a clearing centre for data from various applications, the IAC features flexible interfaces and a high performance database to enable information to be edited, stored and passed on to the respective partners. Having registered once, TV viewers then no longer need to repeatedly enter their authentication credentials. Broadcasting companies profit from the central service centre functions. They can set up their services (e.g., voting) in next to no time, getting the results supplied automatically via the Content Management System.

The return channel furnishes the ideal basis for promising new business models, not least in view of the developments brought about by PVRs. The fact that numerous TV formats are already successfully relying on interactive features such as value added SMS or call centres today should encourage broadcasting companies to increasingly offer MHP services. Providing interfaces to billing centres, the IAC makes sure that users will be adequately charged for the services they use.



MARKET WATCH



Humax LGB32-TPVR

Humax has launched for the UK market a digital/analogue LCD TV (iDTV) with a built-in PVR for digital tapeless recording. The LGB32-TPVR's twin Freeview tuner allows the user to record while watching another programme. The 40Gb internal hard disk drive allows for up to 30 hours of record time.



Neotion Processor 4

Neotion has introduced its latest chip, NP4, using its N-Hub co-processor, which enables current DTT decoders to be made compatible with the MPEG-4 standard. The patented silicon NP4 combines real time MPEG-4 decoding, MPEG-4 MPEG-2 transcoding, and additional operator's essential features such as security and copy protection. The NP4 is targeted to consumer's DTT.

Fraunhofer IMK's JAME Author OCAP version



Fraunhofer IMK has debuted its all new OCAP version of JAME Author, the latest member of IMK's JAME product family for iTV services. JAME Author is an advanced MHP/OCAP authoring system for the straightforward creation of

sophisticated, well designed iTV services. By combining the efficiency, reliability and flexibility of JAME with the advantages of an easy-to-use graphical authoring tool, JAME Author addresses the needs of iTV designers, editors and many other media professionals. An assortment of features well known from popular graphics tools and special TV/MHP related functions, such as a built-in emulator, ease and accelerate this process. This makes JAME Author a valuable tool for drafting first ideas and creating complete services. By having a customised OCAP version of JAME Author, Fraunhofer IMK introduces its successful JAME iTV authoring and production system in the US market.

Rohde & Schwarz has unveiled its compact R&S FSH3-TV spectrum analyser. The handheld TV analyser can process both analogue and digital TV signals. Due to its portability it is especially useful for servicing new installations and maintaining or repairing TV cable network or transmitter components. The R&S FSH3-TV combines the functions and characteristics of a full featured spectrum analyser with the functionalities of a TV test receiver. All measurements essential in field use can thus be performed with only one instrument. In addition, the R&S FSH3-TV is very robust and weatherproof and can be powered from its NiMH battery.

R&S FSH3-TV Spectrum Analyser



SCM Microsystems SDI 010 reader

SCM Microsystems has launched the SDI 010 reader, a secure dual interface reader that combines contact and contactless interface capabilities to support the growing demand for badging and other personal identification applications utilising contactless smart cards. The readers work with a broad range of 13.56 MHz contactless smart cards and passports including: Philips; MIFARE; DESFire; MIFARE ProX; ATMEL and SHARP. The combination of contact and contactless technologies in one reader makes it possible to integrate a number of conventional single purpose card applications onto one card.



ADB 7800

Advanced Digital Broadcast is claiming to have developed the world's first set-top box featuring on board a revolutionary single chip solution to support Advanced Video Coding. The STB offers TV viewers a single platform for the reception of both standard definition and high definition TV signals through DVB cable, satellite or terrestrial broadcast in addition to Internet Protocol Television audio-video streaming. The single chip solution is based on the STi710x state-of-the-art processor from STMicroelectronics. The set-top box includes a wealth of new services such as digital video recording and access to online gaming, e-mail and t-commerce. Interactivity is supported by MHP middleware from Osmosys. Delivery of this product is set to begin in the second half of 2005.

The **Tektronix MTS400's** innovative CaptureVu feature allows the user to define trigger conditions for fast detection, analysis and correction of fault conditions. Its programme-centric user interface also ensures ease of use for less technical operators. Multi-standard support including MPEG-2, H.264 and VC-1 PLUS real time video over IP analysis is also available.

Tektronix MTS400



allows for the usage of different ways of billing the customer. These methods include: mobile phone using text messages (SMS) or WAP, telephone using IVR, smartphone with Symbian or Java capabilities using a client application for easy gaming, interactive set-top box with an API, such as MHP, OCAP or HTML, using a client application for easy gaming. Games can be offered by different payment and subscription mechanisms and pricing can be set independently by the service provider.



Scopus UID-2902 Universal IP Decoder

Scopus Network Technologies has launched its dense IP decoder UID-2900 product family with the introduction of the UID-2902 Universal IP Decoder. The UID-2902 is described as a cost effective platform that enables migration from analogue to all-digital distribution networks. The new device features concurrent two-channel MPEG decoding; dual MPEG over IP inputs supporting IGMPv2 (IGMPv3 ready); simultaneous two video stream and four audio stream support; and both link and logical redundancy. Management and control of the UID-2902 are easily achieved via an easy-to-use graphical front panel, a simple network management protocol (SNMP) or Web-based management.

Sofia Digital has launched a crossmedia platform for multiplayer TV games which allows the same game to be played from several terminals (above right). The company believes the system will open new business model scenarios for broadcasters, operators and content providers as it

DVB WORLD 2005



In March 2005, for the fifth year running Dublin played host to the DVB World conference. Snows and strikes across Europe contrived to delay the arrival of a handful of delegates (including the chairs of the first two sessions!), but that didn't stop the event from getting off to a strong start with a thought provoking opening address from the BBC Director of Regions and Nations, Pat Loughrey. The keynote address was delivered by Richard Freudenstein, COO of BSKyB (above), who chose the occasion to reveal further details of the satellite broadcaster's plans for their upcoming HDTV launch.

Attendees greatly enjoyed the opening night's trip to Howth Yacht Club, where copious amounts of food and drink were accompanied by the lively music of well-known Irish cabaret act, The Paddy Cole All Stars. Nevertheless a full conference room was up and ready to hear session chair Ulrich Reimers open Thursday's session on HDTV. And a lively session it was too, with people left in no doubt that the time has come for HDTV in Europe - finally! An afternoon session focussing on the important but rather complex topic of rights and content held the attention of well over 100 delegates, many of whom then ventured out to sample the delights of Dublin city centre's nightlife.

Friday morning's final session was, for many, the real draw of the event with an opportunity to hear reports from DVB-H trials around the world. Delegates had been able to see the live reception of DVB-H signals on handheld receivers throughout the show with representatives from Nokia

on-hand to take them through the demonstration. As is often the case, time caught up on a rather populous panel, and the conference was brought to a close by the EBU's David Wood. George Waters, president of the organisers IAB, had kept a watchful eye throughout the event and declared himself delighted with the proceedings. There were close to 250 participants at the event, an increase of about 16% on the previous year. Next year's event will take place once again in Dublin from 1 – 3 March.





TV Goes Mobile

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Nokia is making mobile TV a reality today. Imagine being able to watch your favorite TV show, tune into news as it happens, or catch the latest sport events on your mobile phone. What was a dream in the past is now fast becoming a reality. The latest DVB-H (Digital Video Broadcasting-Handheld), an open standard which has been adopted for handheld devices by most countries, heralds an entirely new chapter in the history of broadcasting. It's a great convergence of broadcasting and mobile telecommunications and it's going to create exciting opportunities for mobile and network operators, content providers and broadcasters. Come witness the excitement at the DVB Pavilion, Singapore Expo Hall 2 at 2E2-07 at BroadCast Asia today.

