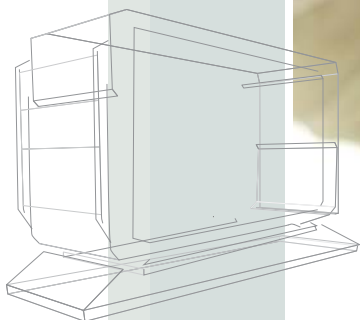
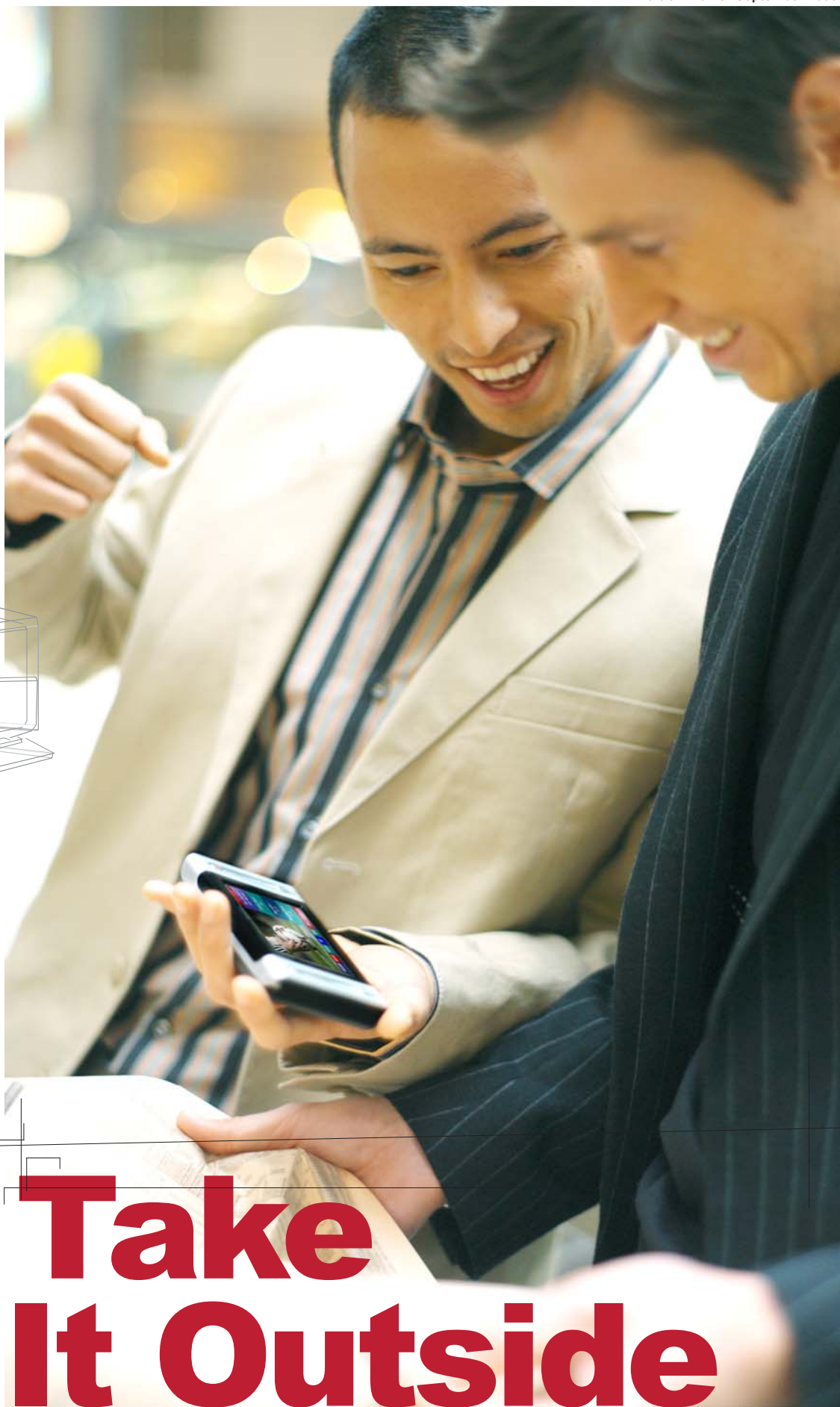


Tune in to Digital Convergence

DVB - SCENE



15



DVB®

The Standard for the Digital World

This issue's highlights

- > 2nd Generation STBs
- > New Features For MHP
- > Advanced TV Displays Forecast
- > Analysis: DAB
- > Choosing An IPTV Solution
- > Market Watch

Take It Outside



A word from the DVB Project Office

MIGRATION TIME

Peter MacAvock,
Executive Director

After the nice European summer, September brings heightened activity in the form of IFA (Berlin) and IBC (Amsterdam), amongst others. The hot topics this year are likely to be the launch of HDTV and the continued extraordinary interest in handheld broadcasting. This edition of DVB-

SCENE brings you topical articles on both of these subjects and more besides. Looking beyond the immediate confines of the world of DVB, we have a piece on the current status of DAB deployments, technology and set of services with renewed interest following the development in Korea of the two distinct systems, T-DMB and S-DMB. DVB continues its efforts at fostering interoperability between DVB-H and

the various DAB based systems being considered for standardisation.

Satellite delivered HDTV services in Europe are driving frenzied development of DVB-S2/H.264 set-top boxes. BskyB, Premeire and DirecTV in the US have announced plans to launch with the advanced set-top box. Not entirely coincidentally, we have seen the emergence of two groundbreaking technologies: one for transmission and the other for video coding, which make economically viable the migration from MPEG-2 for HD services at least. The question is whether affordable consumer equipment is going to be available on time for the planned launches. Either way, we are witnessing important steps in Europe towards an HDTV future – it's been a long time coming.

NEW MEMBERS

Arqiva
DPC-Digital Playout Center GmbH
Envivio
Freescale Semiconductor
Hewlett-Packard
MPC Data Ltd.
LIKE (Technical University Erlangen-Nürnberg)

DVB-SCENE : 02

The views expressed in this newsletter are those of the individual DVB members or guests and are not necessarily the views of the DVB Project Office or Steering Board.

Published by the DVB Project Office,
c/o European Broadcasting Union,
17a Ancienne Route,
CH-1218 Grand Saconnex, Switzerland.
www.dvb.org & www.mhp.org

Printed by Lithmark Limited.

Editors: William Daly, Harold Bergin
Editorial and Advertising enquiries to: WHD PR
Email: news@whdpr.com
Telephone: +44 (0)20 7799 3100

All rights reserved. No part of this publication may be reproduced without prior consent of the publisher. All content correct at time of printing.
(c) DVB-SCENE 2005. DVB and MHP are registered trademarks of the DVB Project. Certain other product names, brand names and company names may be trademarks or designations of their respective owners.

To obtain extra copies of DVB Scene please contact Eoghan O'Sullivan at osullivan@dvb.org.
Delivery charges will apply.

osmosys™

**FLAWLESS NAVIGATION WITH OSMOSYS,
THE BEST MHP & OCAP SOLUTION PROVIDER**

osm:NAVIGATOR
100% JAVA EMBEDDED GRAPHICS USER INTERFACE (GUI)

osm:TATTOO
WYSIWYG GUI (NAVIGATOR) RE-SKINNING TOOL

These and additional products are now available:
osm:MHP DVR — osm:OCAP DVR — osm:SDK
visit: www.osmosys.tv



Jean-François Buggenhout,
Networked Audio-Visual Systems, European Commission,
Information Society and Media Directorate-General

SUPPORTING SUCCESS

The world of television is moving towards high quality digital interactive services. Satellite and cable operators are progressively deploying their HDTV offerings in Europe, while the switch from analogue to digital terrestrial networks is improving the quality and increasing the number of programmes offered to us. At the same time digital recording and time-shifting equipments are becoming more affordable, and large HD flat screens are entering our living room. Behind all those devices and applications, the DVB family of standards is the guarantee for openness and interoperability.

Through its Research Framework Programmes, there is no doubt that the European Commission (EC), has highly contributed to the success of DVB technologies in terms of research, development, cooperation and standardisation activities. The EC contribution to the DVB standards started with the work carried out by research projects of the Third Framework Programme in the early 90's on audio and video compression and transmission technologies. The results of these projects still find applications in a wide range of domains, from digital television transmissions to the lightweight portable music players. Later on, the research projects pursued the efforts on an integrated and secure MPEG-2 delivery chain, as well as the development of better compression algorithms standardised within MPEG-4. Finally, other projects contributed to the further validation and evolution of the DVB standards and participated in the development of interactive satellite, cable and terrestrial broadcasting models, with a special emphasis on MHP. Today in the context of the Sixth Framework Programme of EU funded R&D (2002-2006), several DVB and MHP related projects are being carried out addressing convergent services, that combine interactive digital broadcasting and cellular communication networks.

Through the cooperation with organisations from Latin America and Asia these projects contribute towards the development of early consensus, easing the standardisation process.

With research being a long term investment, the European Commission is already preparing the next Framework Programme (Seventh) of EU funded R&D, covering the period of 2006-2010.

In the field of broadcasting to mobile devices, it is expected that the DVB-H standard will be one of the major players in Europe as well as in other countries around the world. Its close relationship to DVB-T, as well as its ability to manage power efficient reception, even at high speed, makes DVB-H an excellent candidate for this kind of application. However, the question of spectrum availability is still open.

Next year, the ITU Regional Radiocommunications Conference RRC-06 is expected to revise the frequency plans for the use of the VHF/ UHF bands, including the development

of a new plan for terrestrial digital television (DVB-T/DVB-H/...) in about 120 nations. During her speech¹ at the Seventh Radio Spectrum Policy Group, the Commissioner Reding has stressed the importance of having a coordinated action at European Level and announced a Communication on the preparation of the RRC-06 conference which should come out in the second half of this year. Thanks to the analogue switch-off that would take place before 2012, as recommended by the EC in its Communication on Accelerating the transition from analogue to digital broadcasting², there should be enough spectrum available for all those promising applications, making interactive digital television a very exciting experience, be it on your handheld device on the road, or your 'HD ready' labelled flat screen display at home.

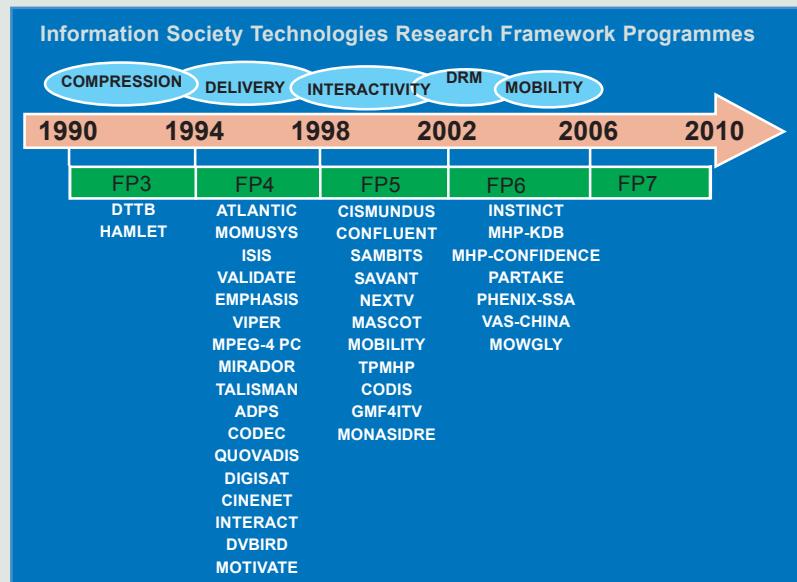
¹ The views expressed in this document are of the author and do not necessarily represent the views of the European Commission.

¹ 7th RSPG meeting, Brussels (June 16, 2005) – Speech from the Commissioner Ms Reding:

<http://europa.eu.int/rapid/pressReleasesAction.do?reference=SPEECH/05/374>

² EC Communication on Accelerating the transition from analogue to digital broadcasting (May 24, 2005):

http://europa.eu.int/information_society/topics/ecomm/useful_information/library/communic_reports/index_en.htm



2ND GENERATION HDTV STBs

Aidan O'Rourke, Marketing Director, IP Multimedia Access, Broadcom Corporation

Before we discuss the evolution of features and capabilities of second generation high definition TV set-top boxes, we should look at first generation HD boxes. HD STBs are starting to become commonly available from cable or satellite service providers, and their popularity is being fuelled by the availability of attractively priced, large screen plasma or LCD slim TVs, and a greater variety of high definition programming.

Current HD STBs employ MPEG-2 video decompression. MPEG-2 was standardised and developed in the early 1990s and provides a level of compression that is adequate for the transmission of standard definition TV but requires significant bandwidth (c. 20Mbps) for the transmission of HD. High end Media Gateways, additionally provide MPEG-2 compression for recording analogue content to an embedded hard drive.

HD STBs have many features such as personal video recorders, dual tuners for watch and record, embedded cable modems for IP data/video delivery, analogue video remodulation to a second TV, IEEE 1394 and USB interfaces for connection to consumer electronics devices such as digital camcorders or cameras, HDMI for secure digital connection to an HD display. An Ethernet port is also usually provided for connection to a variety of networking devices such as IEEE802.11b/g wireless adapters or one of the many forms of home networking technologies now under consideration by the various cable, satellite and telco TV service operators. The Ethernet port may also be used for connection to an ADSL or VDSL modem in the case of video delivery by a telephone operator. An integrated analogue modem may also be provided to support basic interactive services in a broadcast only network.

Audio capabilities of the current crop of HD STBs usually include Dolby 5.1 surround sound, as well as support for stereo mix down. BTSC encoders, for encoding stereo audio to a remote second TV may also be provided. Finally the security features of these existing boxes are primarily concerned with conditional access. Security is covered by either smart card based supporting standards such as CableCard or other proprietary solutions or it can also be network based.

As we look to the next generation of HD STBs, there are many technology changes and usage model changes that are driving major revisions of HD STB architectures. The following represents a list of what are probably the most significant of these changes:

- MPEG-4 AVC video compression, providing an additional 2-3x improvement over MPEG-2
- Upgrading of security to support downloadable/renewal security mechanisms
- Client/Server networking architecture
- Integration of in-home networking and auto-discovery capabilities
- Digital Rights Management
- Inclusion of IP Video and IP networking functionality
- Improved graphical user interfaces and graphics performance
- Increased prevalence of hybrid digital terrestrial/IP STBs
- Internet browser support and support for Internet video download formats
- Advanced audio codec support, Dolby Digital (+), HE-AAC, MP3, etc.

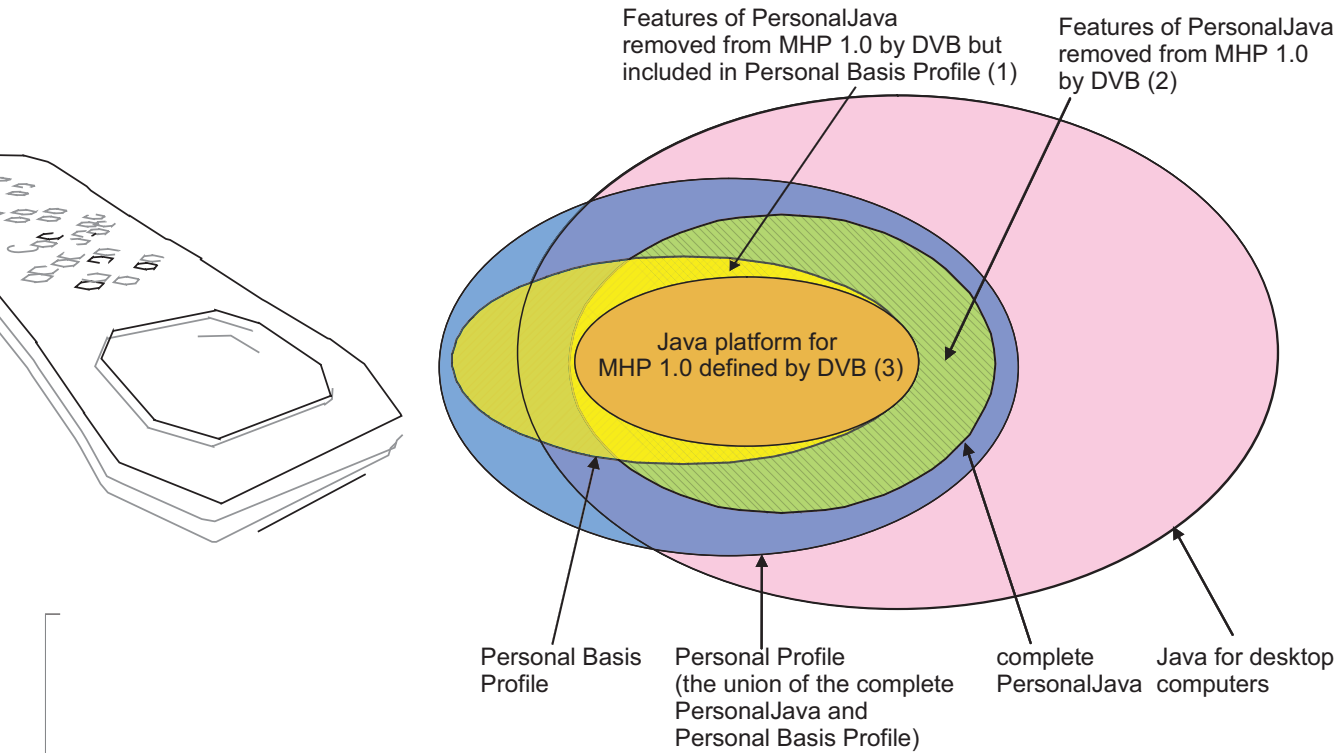
These new features are driving up the level of chipset integration needed to deliver cost effective STBs to operators. A great deal of system experience is required to pull all of these elements together and support the very aggressive operator plans for deployment of HD AVC boxes.

DVB-SCENE : 04



GET SMART

Jon Piesing, Sr. Technical Consultant, Philips & Chairman DVB Technical Module for Technical Aspects of the MHP



Last April DVB released three major new MHP specifications. Two of these relating to PVR were described by Paul Bristow in the last issue of DVB-SCENE. Now it is the turn of the third of these, MHP 1.1.2 also known as DVB Blue Book A068 rev 1.

The MHP 1.1 series of specifications extend the MHP 1.0 series with support for features like local storage of applications in the receiver, download of applications via the

As well as the new features, MHP 1.1.2 significantly upgrades the support for using smart cards. It is now possible to use a smart card to authenticate a consumer to a government or other server via the return channel. This is based on the PKCS #11 protocol widely used in smart card systems. Due to variation in the implementations of this by smart cards, a Java adaptor (called a Provider) is needed that is aware of

The figure shows the relationship between PersonalJava, PBP and other related specifications. At its heart is the DVB defined subset of PersonalJava in MHP 1.0. The direct replacement of PersonalJava is Personal Profile which includes all of PersonalJava. Personal Basis Profile includes all of the DVB defined subset of PersonalJava but omits many of those features of PersonalJava not

“...bringing to MHP the benefits of 7 years experience in the global Java community.”

internet and access to smart cards. Smart card access is focused on applications such as t-government, health and perhaps supermarket loyalty cards. There is also an optional HTML component and the optional internet access profile enabling control of a web browser and email client where included in the receiver.

Substantial features new in MHP 1.1.2 include a definition of how MHP should work in a HD video environment, support for MHP in 525-line/60Hz countries and support for implementing a UK DTT MHEG-5 decoder as an MHP application. A number of smaller features are also included of which probably the most significant is support for the 'drop call' technique for counting votes in tele-voting.

the details of the particular smart card. For many people, the largest change in MHP 1.1.2 is the upgrading of the base Java platform from PersonalJava to Personal Basis Profile (PBP). PersonalJava essentially dates back to the early days of Java in 1998. The version of PBP in MHP 1.1.2 is Java version 1.4.2 from 2003 hence bringing to MHP the benefits of 7 years experience in the global Java community. PBP also brings some new features including better support for text input and output for non-Western markets, better support for graphics on interlaced displays and optionally support for the IPv6 protocol which could be a requirement in the future as the number of connected devices grows.

required by MHP 1.0. MHP 1.1 has been sitting in some kind of limbo since it was first completed in 2001. There has not been any substantial implementation activity and the development of test suites for product certification has not happened. This is expected to change with MHP 1.1.2. From past experience, the process of developing the test suite for MHP 1.1.2 will generate enough significant feedback on the specification to require the creation of an MHP 1.1.3. This latter specification is likely to be the first specification in the MHP 1.1 series for which there will be a DVB approved test suite.

AND NOW THE SHIPPING FORECAST...

Pete Gambby, Research Director, Meko Ltd



Meko has a bullish forecast for plasma TV sets and shows a strong seasonal increase for Q4 in each of the forecast years. Much of this continued growth is dependent on price reductions and there's no evidence to suggest that the plasma panel makers are unwilling to try to compete with the LCD suppliers.

The plasma market is still and will continue to be dominated by the 42" screen size products. This screen size will increase its share of the market from around 80% at the moment to nearly 85% by the end of the forecast period.

So why is the share so low today? The example of the UK market is perhaps a relevant one.

With a TV set to household ratio of nearly two to one, there are potentially 40m installed TV sets in the UK that are analogue. Many of these will be 21" and smaller. This means there is a huge potential market for set-top boxes still to be fulfilled whilst the

According to the latest set of data from Meko's DisplayCast ATV market intelligence service, sales of flat panel TVs were down sequentially in the first quarter of 2005 and concerns over inventory build-up appear to have pushed shipments down further than the usual seasonal trend would otherwise have done.

Overall, the drop in unit sales from Q4 to Q1 was steep at about 30% for all types. LCD shipments declined by 19% quarter on quarter.

So that was Q1. What of the future? Meko's forecast for the European TV set market goes out to the beginning of 2008 and covers each of the product types by size and by country.

DVB-SCENE : 06

TeamCast
Your team for Broadcast



DVB-T & DVB-H ModuCast®

Easy-to-integrate, compact and truly cost effective modules for Transmitter, Base-Station, ENG and System integrators:

- High performance DVB-T / DVB-H modulators,
- Hierarchical MIP inserter for SFNs,
- Mobile DVB-T/-H antenna diversity receivers,
- Experimental DVB-H receiver,
- Ultra Low Phase Noise Synthesizers,

All the essential technical bricks needed to build up DVB-T & DVB-H high performance transmission systems at competitive pricing.

(for further information: www.teamcast.com)

price for a replacement, integrated digital TV is still high and while there are so few sets at or below 21" with that feature.

A recent report from Ofcom suggests that 'around 1.1m [digital tuners] have been bought for use on second sets by viewers who already have digital (either Freeview or Sky or cable) on their main set'. The regulator also reckons that nearly 25% of FreeView STBs are bought for this purpose.

At present, sales of integrated digital TV sets are proving very tricky to estimate as many manufacturers are unable (or unwilling) to disclose shipments by model. However, despite an increasing number of models with integrated digital becoming available the data that is being reported suggests that the share of sales for this type of set is still in single digits.

Meko's data suggests that the share of set sales for integrated digital TVs is very low and probably reaches only 5% to 6% in the UK but is as low as 1% for Europe as a whole and across all technologies.

Away from the traditional main room viewing market, the take up of PC-based TV viewing (and more importantly, recording) is also helping to drive digital take up. Tech-savvy users can get all the benefits of a fully functional PVR with the addition of a digital tuner card to an existing household desktop or notebook PC.

As home networking becomes more widely adopted, this may help to convert more analogue sets to digital viewing since a PC can provide a composite or S-video signal via a SCART socket to an analogue set.

Unlike the situation in the US, there cannot be Europe-wide legislation implemented to mandate set makers to provide digital capable sets and this will hamper more rapid adoption in Meko's opinion. The EU may try to implement something for its member states and has recently announced that it would like its members to drive for a coordinated 2012 switch over.

From the set makers point of view, the marketing of digital TV will more or less be taken care of by the broadcasters. After all, the last thing they will want is for 20% of the population of Europe to wake one day to a blank TV screen!

One strong conclusion offered by Ofcom in a report last year was that the announcement of a firm switch-off date would be a key driver for digital TV adoption.



Pete Gamby is the research director at Meko Ltd. Meko is a specialist market research consultancy and publisher whose topic is 'moving pixels'. The company combines technical and product understanding with practical experience of the world of high technology marketing.



Fraunhofer Institut Medienkommunikation

Fraunhofer IMK presents solutions for **Mobile Broadcast Technologies.**

Our expertise in mobile multimedia and broadcast technologies can back your business of mobile entertainment and information services. At IBC we present the all new **IPmux**, IMK's DVB-H playout solution for IP Encapsulation and Multiplexing.



Visit us at IBC
DVB booth
#1.481

SWING TV2

Mr. Carlos Pardo,
SIDSA's Strategic Technical Director



Since late 2004, DVB-H technical field trials have been underway in Barcelona, Spain. These trials are continuing under the auspices of the SwingTV2 programme funded by the Spanish government.

The SwingTV2 DVB-H trials involve the fabless design house and conditional access service provider SIDSA, the Spanish national broadcast network Retevisión and Ramon Llull University - La Salle (Digital TV competence centre).

Rather than simply verifying the DVB-H standard, the SwingTV2 project will help determine how revenue streams can be generated from handheld devices. Four areas have been selected for investigation.

The first area involves trials of interactive applications and data carousel transmission. The delivery of interactive applications to handheld devices will be investigated based on data carousels in SAP, DVBSTP, WFDP, FLUTE protocols. The DVB-H standard supports transmission of interactive applications, data and video in the same time slice (burst) with overlaying service information.

The second area is the integration of conditional access (CAS) for pay-TV programmes and services. Content protection systems compliant with DVB standards such as SIDSA's 'KeyFly' will be ported to handheld receivers. The return channel available via the mobile telephone network provides numerous interactive opportunities.

The third area under development is transmission of the Electronic Service Guide (ESG). An application called 'Service Discovery' allows the handheld terminal to recognise which services are available through the network interface to generate a list of both free-to-air and encrypted pay-TV options.

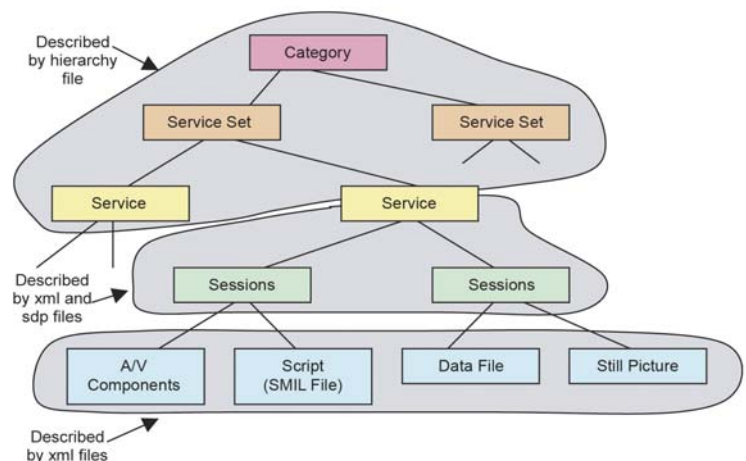
The ESG allows the user to select services or items for viewing and to search for services stored as 'favourites' in the handheld terminal.

The structure of DVB-H services is hierarchical with the IP streams transported in services consisting of components transported in packets. The services are grouped in service sets, which are presented under common categories. These services are also accessible as groups.

The fourth area of study is the handover support between DVB-H cells. Handover is complicated by the fact that each DVB-H service is transmitted as bursts to conserve the battery life of the handheld terminal. Therefore, the handover

support within a DVB-H broadcast network is determined by the ability to synchronise the IP encapsulators used to generate these time slices. The SwingTV2 project proposes a Master-Slave architecture with two different levels of synchronisation for bursts and IP content.

In conclusion, because bandwidth is a scarce resource, interactive applications and data carousel, CAS entitlement, ESG and handover must use bandwidth efficiently. The results of the SwingTV2 project will help to determine which methods are more efficient and provide useful information for revenue generation studies of DVB-H interactive services.



Example of a Hierarchical Structure of DVB-H Services

THE ULTIMATE ENABLER



With the introduction of 3G with improved data rates and speed, the fast growth of sophisticated phones and the availability of adequate content, mobile TV streaming becomes a highly interesting application. With personalisation and fast channel switching user acceptance is guaranteed. DVB-H broadcasts will later complement the streaming service especially to cover the capacity demand in metropolitan areas as it is ideal for broadcasting TV content to a large number of mobile devices simultaneously. Taking TV content directly to a mobile phone makes it the ultimate enabler for bringing content, applications and services together in one unique device. Not limited only to TV programmes, DVB-H also allows, in combination with the cellular network, access to background information relating to the broadcasts, the buying of products online and even bringing city maps to the user's fingertips. This Siemens concept device will be fully featured with a DVB-H broadcast receiver, stereo sound and a large VGA-Touchscreen.

OXBRIDGE EDUCATION

Adriana Mattei, Arqiva Business Development Manager and Mike Brooks, Arqiva New Product Development Manager



Arqiva's long term datacasting trial in and around Cambridge (UK) in partnership with Microsoft, using a variety of converging technologies to achieve multimedia delivery, has already been described in a previous issue of DVB-SCENE (Issue No. 11). At that time it comprised a combined DAB and DVB-T network delivering multimedia content to both fixed and portable devices.

Additional elements have now been incorporated to explore further opportunities. Most significantly, the DVB-T transmission has been upgraded to a QPSK DVB-H service, which will deliver a combination of live TV and download files to enabled devices. The target devices will include not only mobile phones, but also PDAs, laptop PCs and portable media devices.

DAB transmissions to handheld devices continue as part of this project, and one of the development objectives is to seek a common set of applications across this and the DVB-H network, in line with a recent initiative between the DVB and WorldDAB organisations.

Other objectives include:

- Developing and testing mechanisms which allow receiving devices to switch seamlessly from one type of network to another

- Running user focus groups to help to evaluate why, when and how people interact with the different types of devices and multimedia content. For example, do people have different viewing habits depending whether they are viewing mobile TV on a laptop rather than a mobile phone? What types of user interfaces do they require? What's the peak time of a mobile TV day?

Meanwhile over in Oxford, Arqiva is beginning a much publicised user trial of multichannel mobile TV in partnership with O2, using a network of eight DVB-H transmitters,

provided by Harris. Around 350 trial participants are being issued with DVB-H capable mobile phones and will provide valuable feedback on their preferences and experiences of viewing up to 16 'linear' TV channels.

The combination of the research in the Oxford and Cambridge trials will give the partners a unique insight into the user habits, preferences in how they consume the different types of content and the usage of the different types of receiving devices.

In the long term, additional infrastructures (such as WiFi and ADSL) will be added, and the interaction of broadcast transmissions and in-home networks explored, with seamless roaming across all of them being the ultimate goal.

Time to rethink DAB strategies

ANALYSIS: DAB

Alexander Shulzycki, Senior Media Analyst, EBU

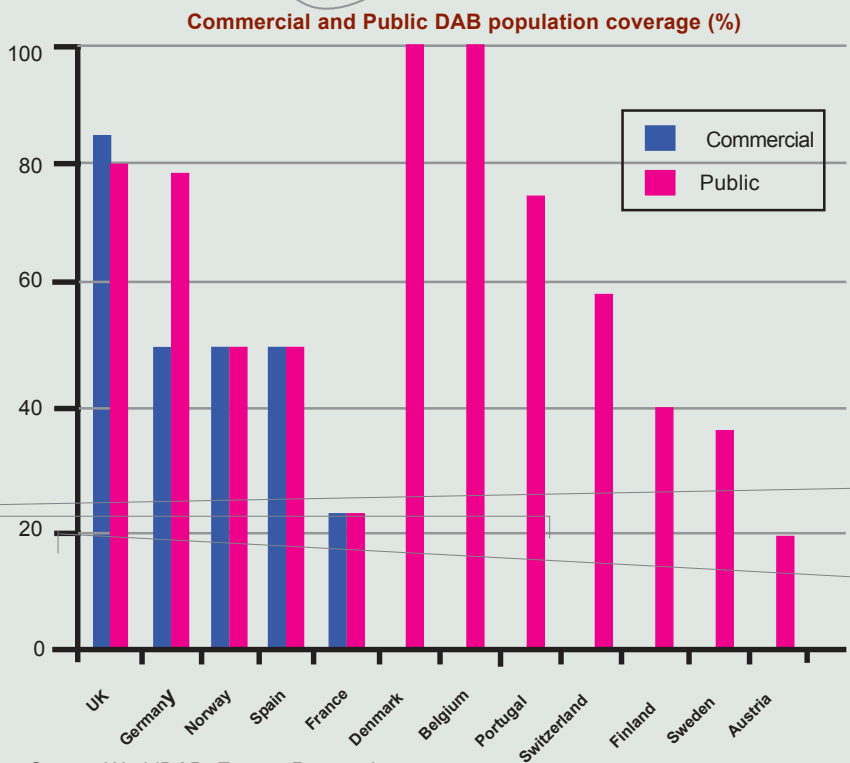
DAB is at a critical juncture, stalled in many countries and taking off in only a few. After ten years, what are the prospects of this traditional new media?

So far the technology has established a mass market only in the UK with 1.2 million digital radio receivers sold in 2004. There's a thriving receiver market with entry level sets below £50, over 150 different products available, and some auto makers offering DAB receivers as standard features on new models. High-end models have pause/re-wind functionality and can record and download to SD/MMC cards. Importantly, both public and commercial radio have contributed to developing the technology.

Meanwhile, in the other big markets the situation could not be more different. In Germany, DAB has a presence but not much more. There have only been 100,000 units sold to date and there is what one observer calls a 'political moratorium' on DAB in the northern regions. France declared 2005 the official year of digital radio and formed an industry committee to promote the spread of the technology, however, the degree of commitment of the major radio channels is not yet clear and sales are certainly not booming. And so it goes in many of the smaller markets. Last year only nine European countries had coverage levels over 50% of the population.

In the tech-savvy Nordic countries the picture is mixed but developments there may offer some glimpse of DAB's future. The laggard is Finland where public broadcaster YLE constitutes the only offer with three channels. Sales in 2004 were flat and bordering on nonexistent. According to the Nordic Radio Digital Initiative only 27 DAB receivers were sold in Finland last year. With 930 sales last year, Sweden did not do much better on a per head basis and Norway registered a respectable but unimpressive 4000 sales. Although Finland seems likely to retrench further, there are hopeful signs in Sweden and Norway as public and private radio stations have agreed on joint initiatives and coordinated marketing.

In contrast to its neighbours, Denmark stands out with 2004 sales of more than 34,000 units and has achieved a



Source WorldDAB, Eureka Research

qualified success. How did it happen? Denmark's public broadcaster, DR, launched 18 popular DAB channels with only a marginal increase in its overall budget. The company followed the typical strategic learning curve. After it became immediately clear that improved sound quality was not going to be a driver, the idea was that original and exclusive content would do the trick. To some extent that worked, however, new digital-only content had one other important aspect: it was very expensive and limited the number of channels that could be launched. DR hit upon a new strategy: launch a wide range of new channels, exclusively designed for DAB but repurpose existing material and draw heavily on archives. Put this all together into targeted and formatted

digital packages and you have an offer that listeners can't refuse. The strategy worked and budgets were held under control.

So, can DAB get back on track in the rest of Europe? Realising that analogue simulcast is not enough and producing new content is too costly, other countries are looking at new cost effective approaches like the Danish model. Receiver prices have dropped to mass market levels. Commercial radio is becoming more involved, partnering with their public radio colleagues. The elements for success are in place but the window of opportunity is limited as other digital media and devices continue to draw radio listeners into different consumption patterns. For DAB, it may be now or never.

THE LYIN', THE WHICH AND THE WARDROBE

In My Opinion - Julian Clover



Everyone has a piece of clothing that is kept at the back of the wardrobe in case it might come back into fashion. For those involved with digital terrestrial television in Britain the item of clothing is pay-TV.

When the Crystal Palace transmitter was lit up by On Digital, probably in the mistaken belief that it was the Eiffel Tower, pay-TV was seen as an essential component of the UK DTT offering. We all know the story of how the pay-TV venture failed as On Digital became ITV Digital before fading into television history.

In Spain it was a similar story as the entertainingly named Onda Digital – the Spanish operation had also had the UK's Carlton as a shareholder – changing its name to Queiro before also disappearing into the ether.

Rightly or wrongly the UK is seen as a market that leads the way in television developments both in regulation and technical infrastructure. The Nordic countries have modelled their TV system of a public broadcaster sitting alongside a commercial broadcaster holding some public service obligations – even if the ITV of today is more likely to pick and choose which ones it honours. As Norway and Denmark look to launch DTT services their eyes may turn towards the UK and Top Up TV. The small scale pay-TV service founded by former Sky executives David Chance and Ian West has not revealed how many subscribers it has, but I understand they have upwards of 150,000 of the

250,000 needed to break even. Added to this is the BT project that intends to use the free-to-air DTT alongside IPTV-delivered premium services.

The Nordic countries already boast a successful pay-TV service in Sweden's Boxer, which is responsible for 34% of the nation's 1.3 million digital television homes. The size of the Scandinavian markets, and the same is true for other small countries, means that if DTT is to succeed beyond a handful of public service channels then some sort of pay-TV element will be required.

The most recent European DTT nation to go live is France where the technical infrastructure will deliver a mix of free and pay-TV services. Those who have rushed out to buy their MPEG-2 DTT boxes will have to return to the stores if they are to enjoy the pay services that will use MPEG-4 transmission. France

is at least used to the concept of paying for terrestrially delivered TV. Canal+ has been a feature of the television landscape since the 1980s and will be looking to DTT to hold onto those subscribers that it has so far not been able to convert to the competing digital platforms of satellite, cable, and more recently IPTV.

There is no reason to assume that anyone who moves to digital television, on any platform, will suddenly have a desire to subscribe to television when they have previously been content with free-to-air services. It's just that the new pay platforms will look to capture more than a handful of converts.

Julian Clover is managing editor of Broadband TV News. Choose from three weekly editions at www.broadbandtvnews.com.



SIDSA, your technology partner for DVB-H

**DVB-H demodulator reference design platform
DVB-H IP encapsulator**



P.T.M. Torres Quevedo, 1
28760 Tres Cantos (Madrid), SPAIN
Phone + 34 918 035 052
salesinfo@sidsa.com www.sidsa.com

CHOOSING AN IPTV SOLUTION

Dr. Eunsang Yun, President, Alticast, Inc.



In a fiercely competitive converging technologies market, interest is quickly moving to IPTV as a viable option for telcos to compete head-to-head with cable and satellite service providers. It is important in the early stages of any burgeoning technology to give careful consideration to upfront investments and early partnerships to ensure both long term success and minimised financial risks.

Telcos are in a unique position to offer a coveted quadruple play with video, voice, data, and mobile or wireless connections. The trick is to avoid being guinea pigs in the quest for IPTV deployment that includes value added interactive services to entice viewers from the cable and satellite subscriber base.

Open standards vs. proprietary systems is the central theme facing telcos when considering interactive services and is a critical decision in

the beginning phases of their IPTV deployment.

MHP, is an open standard that utilises a common Java based API for digital set-top boxes. MHP was designed for the TV environment and has been proven repeatedly in large scale commercial deployments, ensuring that IPTV can exceed viewers' expectations. The integration of the middleware with telcos' existing infrastructure can be easier and require less investment with open standards. The MHP open standard would allow telcos to choose the 'best of breed' solutions for each phase of their IPTV deployment, preventing vendor lock-in. No vendor lock-in means service providers have more options for content, hardware, software, system flexibility and expansion. And that's just the tip of the open standards iceberg.

With open standards, telcos have the

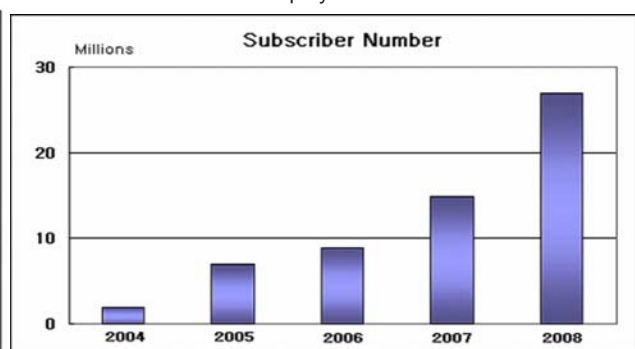
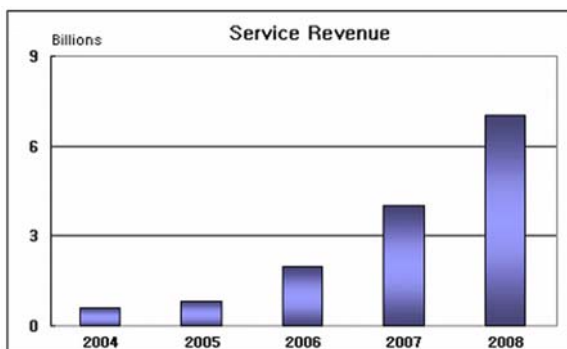
option to choose content and solution providers from all over the world, adding to the diversity of their service offering portfolio. Content and applications written to the MHP standard can run on any MHP compliant set-top box regardless of manufacturer, making content cost effective and interoperable from one platform to another. Telcos have a worldwide roster of content providers whose motivations for better technology and killer graphics are spurred by fierce competition.

IPTV set-top boxes are sleek, fast and easily adapted to home networking. They are cost effective with a wide variety of major name brands available in the market and can motivate techno weary, cost conscious subscribers to switch to IPTV with hybrid boxes that deliver terrestrial or satellite along with IPTV to the home.

IPTV is a natural environment to offer value-added differentiating services such as interactive TV. MHP was specifically designed to support interactive services, providing viewers with up to the minute weather and news updates, banking, shopping, and EPG services. Interactive services give telcos the ability to offer movies, news, sports, and many other services to their subscribers and are a great way to generate additional revenue.

As with any business proposition, choosing a company to provide strategic services can be the deal breaker. Some vendors provide only one piece of the pie, and others provide a turnkey solution, and still others form strategic alliances of their own that pull together 'best of breed' in each category to offer the telcos an end-to-end pre-integrated solution, taking the burden off the telcos to find the pieces of the puzzle themselves.

When choosing a vendor, telcos should keep in mind that vendors have a responsibility to prove they are capable and have the experience to deploy interactive TV services.



Source MRG, 2005

MARKET WATCH



Newtec Azimuth DVB-S2 Modulator

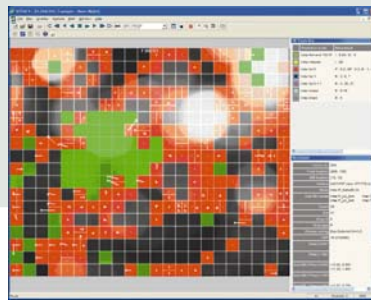
Newtec has developed DVB-S2 modulation schemes for its Azimuth product family. This latest version of the modulator NTC/2280 (L-band version) or the NTC/2277 (IF version) will handle data rates up to 65 MSymbols in QPSK, 8PSK, 16APSK, and 32APSK (per application) and will work in the 3 standardised modes (CCM, VCM and ACM). DVB-S2 based AZIMUTH modulator equipment provides more than 30% bandwidth savings typically for IP trunking, interactive satellite services, satellite TV contribution and distribution. For 2-way broadband via satellite networks, like the DVB-RCS standard based networks, the DVB-S2 equipment will provide bandwidth gains up to more than 50%.

TeamCast Modulators



TeamCast continues to enrich its ModulCast products family of solutions for transmitter manufacturers, base-station manufacturers, ENG providers and system integrators. Based on the latest digital technology, these new ModulCast family members integrate all the functionalities of high end modulators including SFN capabilities, seamless hierarchical input switching and very efficient digital pre-correction. They constitute a compact, high performance and cost effective solution, easy to integrate in either VHF or UHF or L-Band transmitters. The ModulCast family includes digital modulators, professional receivers, up-converters and synthesisers, all packaged as 'ready to integrate' modules and all providing high performance core technologies to the broadcast market sector.

Tektronix now offers the VC-1 advanced compression video codec within its MTS4EA Video Elementary Stream (ES) Analyzer. The MTS4EA ES Analyzer offers a flexible, upgradeable test solution for next and current generation video compression technologies.



Tektronix MTS4EA Video Elementary Stream Analyzer

Next generation video compression standards such as VC-1 are critical for future high volume consumer products such as set-top boxes and high definition DVD. Advanced video decoders such as VC-1 are finding a role as standard features of Internet Protocol set-top boxes. The MTS4EA ES Analyzer enables developers and manufacturers of these technologies to competently and confidently design and test devices using next generation compression standards.

ATI Technologies has introduced its All-In-Wonder X800 XL PCI Express video card that enables the reception of DVB-T transmissions and also supports high definition-ready TV output for PCs. It has PVR functionality that allows users to record programmes on their hard drive, pause live TV and resume broadcasts. It is a dual tuner with picture-in-picture capabilities.



ATI Technologies All-In-Wonder X800 XL PCI Express

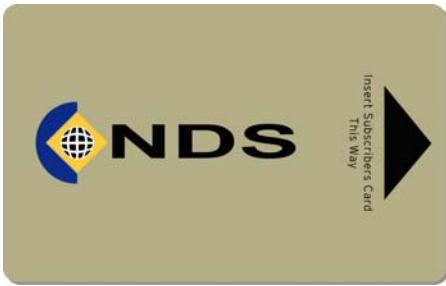
Nagravision is now offering its end-to-end push content-on-demand security solution. The Nagra DVR Push Content-on-Demand is designed for operators wishing to provide transaction based content-on-demand on DVRs. Content is encoded, encrypted, and transferred to the DVR hard disk drive, and offered to the subscriber for rental or purchase. Content can be in any format as file based transfer is used to push audio, video, data, games, etc., onto the hard disk.

While file based systems are typical in IP networks, Nagravision provides the first implementation of a content-on-demand system using MPEG-2 TS 'files' that can be downloaded quickly over DVB networks. The solution has already been successfully launched by German operator Premiere.



Nagra DVR Push Content-on-Demand

IMK is introducing version 2.0 of its well known JAME iTV production and authoring system. By adding return channel capabilities, the system now also allows the creation and operation of fully interactive services like voting, billing and transactions. Based on open standards (HTTP, SSL) and providing an open interface to existing web and application server infrastructure, the new enhancement continues the JAME practice to focus on high performance, flexibility and reliability. Additional graphical and functional components enable a new range of dynamic and personalised services. Local area weather forecasts, event or restaurant information using personal information stored on a server are only some of the new scenarios supported by JAME 2.0.



NDS VideoGuard Express

For smaller pay-TV operators, **NDS** offers VideoGuard Express, a new entry level Conditional Access solution that gives platforms the robust security and flexibility they need, at an affordable price. VideoGuard Express gives operators the freedom to choose the path to digital TV that is right for their budget and strategy. A choice of configurations minimises costs while a range of add-on modules provides the opportunity to deliver advanced pay-TV services in the future.

IDway has announced the latest release of its MHP middleware product. Complying with the MHP 1.0.3 specification, it also supports conditional access systems, advanced software download mechanisms and complete STB features management. Its memory footprint and performance makes it a perfect choice for implementing the MHP standard. A market-ready version of the company's MHP solution called Italy@IDway, supporting Nagra and Irdeto CAS, is available for the Italian DTT market and is already deployed by leading STB manufacturers.



IDway MHP Solution

ProTelevision Technologies has added four functions to their third generation MIP Inserter PT 5879. The system now offers the PT 8733 hierarchical mode option that supports both hierarchical and non-

ProTelevision Technologies Third Generation MIP Inserter PT 5879



hierarchical mode. The data rate is automatically adapted to the chosen TS priority (HP/LP) when the hierarchical mode is selected. PT 8736 DVB-H TPS extends the MIP to include DVB-H specific parameters interleaver-depth, time slicing status, and MPE-FEC status. Full control of the MIP Inserter via ethernet with PT 8727 SNMP Client / WebLink, and on-the-fly selection of system bandwidth (8,7,6,5MHz) with PT 8728 Multi-BW.

Philips DSR 200



New free-to-air, digital satellite and terrestrial set-top boxes from **Philips** are now available for retail outlets in selected European countries. Two satellite STBs – the DSR 200 and DSR 320 – will be launched in Germany and Turkey, and two terrestrial receivers – the DTR 200 and DTR 320 – will be introduced in Germany, France and the UK. The new products offer extensive features to suit the viewing and price requirements of a broad range of consumers.



Philips DSR 320

SIDSA has introduced a DVB-H laboratory and field trial kit which broadcasts DVB-H with content from IP streams, DVB-T, DVB-C or DVB-S antennas and traffic generators. Mobile handsets and reception prototypes can be verified with a proven DVB-H transport stream generated from SIDSA's IP Encapsulator. Broadcast TV programmes from satellite, terrestrial and cable antenna feeds are converted by SIDSA's TS processor based 'Ether TV' into IP streams for 24 hour testing. The trial kit also includes a DVB-H modulator and transmitter.

The company is also licensing its DVB-H demodulator reference platform. This reference design allows semiconductor development teams to accelerate their time to market by integrating DVB-H demodulator functionality in mobile applications chips.

Microtune has added a dedicated L-Band tuner to its new family of mobile TV tuners. Complying with the DVB-H industry standard, the new Mobile MicroTuner MT2262 is a specialised, ultra low power silicon TV tuner that supports the L-Band frequency range (1670-1675 MHz) licensed for mobile broadcast TV services in the US. It enables manufacturers to target the US market in bringing high quality broadcast TV and digital entertainment services to mobile phones, laptops, PDAs and mobile handheld devices with a cost optimised solution.

Built with Microtune's patent pending Mobile MicroTuner technology, the MT2262 is a sister device to Microtune's MT2260 multi-band DVB-H TV tuner, the first member of the product line which the company recently unveiled.



Microtune Mobile MicroTuner MT2262

Micronas claims to be setting a new standard for high quality video, audio, de-interlacing, scaling and controller functionalities. Optimised for LCD TVs, The company has integrated all essential TV functions, including memory, into one QFP package. The new VCT69xyP has a multi-standard video decoder with 3D comb filter, motion-adaptive de-interlacer and scaler, micro-controller and graphics processor, stereo decoder and audio sound processor. LVDS outputs directly drive the LCD.



Micronas VCT69xyP



Harmonic DiviCom Electra 5000

Harmonic has announced the introduction of the DiviCom Electra 5000 which delivers compression flexibility for existing and emerging applications. Basic configurations simultaneously encode two full resolution channels using either MPEG-4 AVC (H.264) or MPEG-2 while others provide a mix of resolutions in MPEG-2 and MPEG-4.

Also new from Harmonic is the DiviCom HD encoding platform that delivers high quality MPEG-2, MPEG-4 AVC and SMPTE VC-1 HDTV. The new HD platform supports multiple audio encoding formats to provide the full HD experience.

The Techno Trend TV-Stick is a low cost, high performance DVB receiver that allows for connection to a notebook or personal computer via USB version 2.0. The TV-Stick features a complete DVB receiver for reception of data broadcasts such as digital TV or radio programmes and provides high speed access to internet technology based services. The TV-Stick can also be used for extended functionality, such as using a notebook for digital content recording, and for time shift features.



Techno Trend TV-Stick

Pixelmetrix has launched the hard disk based DVStor-IP that allows non stop simultaneous recording of multiple channels of transmitted IP video.

The video is recorded by specifying the source IP address and destination IP address of the transmitted video. A continuous archive of recorded video is Pixelmetrix DVStor-IP



created on a 'first in, first out' basis. This means that out of date material is removed to allow for fresh recordings, and selected segments can be locked to prevent them from being removed or overwritten. The recorded IP video can be subsequently played back to any remote machine with a video player.

JVC has added a new 10" multi-standard colour monitor, the DT-V100CG to its DT-V monitor range. The cost effective, compact monitor is ideal for high end users whose requirements are to monitor the output of HD SDI and SDI signals accurately, flexibly and affordably.



JVC DT-V100CG Monitor

New from Tiernan is the HE4000, a simultaneous HD AND SD MPEG-2 video encoder (AVC upgradeable). The HE4000 offers HD to SD down conversion, SD to HD up conversion, 4:2:2, 4:2:0, encode up to two independent video sources simultaneously with up to 4 stereo audio pairs.

The HD4000 is Tiernan's new HD/SD MPEG-2 4:2:2 and 4:2:0 decoder / IRD. Inputs to the HD4000 include direct ASI, satellite demodulator QPSK / 8PSK or 16QAM or terrestrial T2/E2/T3/E3/DS3 interfaces.



Tiernan HE4000 Encoder

Scientific-Atlanta is introducing a new high density networked MPEG processing platform, the Digital Content Manager (DCM), that will provide the versatility and processing power necessary to deliver digital simulcast, switched digital broadcast, more HD and on-demand digital channels, and expanded ad insertion opportunities.

The Scientific-Atlanta DCM will provide the ability to simultaneously process up to 2,000 standard definition or up to 500 high definition MPEG video streams from a single platform.

Neotion MPEG-4 IP Input Module



Neotion is introducing a range of DVB-CI & CableCard plug-n-play Modules, powered by its patented NP4 -NEOTION Processor4 that will bring to integrated digital TVs (iDTV) and CI receivers, both IP wireless capabilities (ability to pull interactivity, VOD, and enable quadruple play), and MPEG-4 decoding and MPEG-2 transcoding features.

Rohde & Schwarz has introduced the compact R&S DVM400 for monitoring, analysing, recording and replaying MPEG-2 transport streams. When it comes to analysis tasks, it is noteworthy for its extensive functionality in data broadcasting. Protocols can be specifically and conveniently analysed, for example for transmitting MHP and IP contents in DVB transport streams. It is of special interest in the research and development of DTV components. Other fields of application include troubleshooting in DTV networks. It can be expanded by the R&S DVM120 to monitor up to 20 transport streams in parallel.



Rohde & Schwarz DVM400

New from Radyne is the DM240XR DVB modulator, with data rates reaching 250Mbps, fully compliant DVB-S and DVB-S2 including DVB-S2 BS and DVB-S2 ACM mode support. All existing DM240 interfaces can be used in the DM240XR modulator.

Radyne is also announcing one of the first commercially available DVB-S2 / DVB-S demodulators. With data rates as high as 155 Mbps and the ability to choose either DVB-S, DVB-S2 and any demodulation mode from QPSK, 8PSK or 16QAM, the DD240-S2 is claimed to save up to 30% bandwidth / power.

Radyne DD240 Modulator



Stand 4.240

DVB Pavilion 1.481

www.protelevision.com

Pro Television
TECHNOLOGIES

