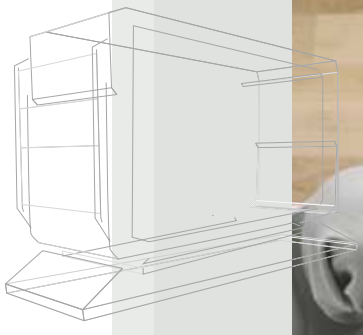
Edition No. 01 **April 2002**

# DVB - SCENE

Tune in to Digital Convergence



01

# MHP
## out of the box

DVB®

The Standard for the Digital World

### This issue's highlights


> Commissioner Liikanen addresses MHP implementation
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> MHP in the USA
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> Behind the wheel with MHP
> DVB-T tests in South Korea

# SUPPORT FOR
# MHP IMPLEMENTATION

Erkki Liikanen, European Commissioner for Enterprise and Information Society.

MHP is a tremendous opportunity to facilitate the passage from today's vertical markets, using proprietary technologies, towards horizontal markets based on open standards. This will benefit consumers and market players. Interoperability and standardisation will help Europe to achieve a socially inclusive Information Society, one of the objectives of the e-Europe Action Plan. I therefore support voluntary migration towards MHP.

The European Union's new legislative framework for communications was agreed on December 12th 2001. Whether to mandate MHP or not – in support of interoperability – was a key issue. The new framework does not impose MHP; but the European Parliament will follow MHP's future progress closely.

At a political level, the Commission has undertaken to support MHP implementation. MHP will be included in the official list of standards to be published shortly. Member States have to encourage implementation of listed standards. In 2003, the Commission will publish a review on how far interoperability and freedom of choice for EU citizens have been adequately achieved.

Now industry must follow through by collaborating on MHP implementation across all Member States. This is essential in order to achieve critical mass. Manufacturers need the Single Market in order to achieve critical mass across the EU. The process has already started. Several national MOUs are in place within Europe. I also support the initiative of the MHP Action Group to develop an industry MOU at European level.

DVB members come from all over the world now. I urge you all to support MHP implementation in all possible ways across the world. Global take up of MHP can contribute to achieving critical mass and making MHP the natural choice for broadcasters and platform operators everywhere. I welcome the challenge of supporting MHP implementation and count on the DVB's support.



**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.**

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**Jon Piesing, Vice-Chair DVB "Technical Aspects of the MHP" and Senior Project Leader, Philips Electronics gives an update**

# MHP PROGRESS REPORT

Since the completion of version 1.0 of the MHP specification (also known as ETSI TS 101 812 V1.1.1) in January 2000, a process has been in place within the DVB project to deal with comments on that document.
The main sources of these comments have so far been implementers of MHP receivers and receiver conformance tests. Some examples of the type of comment received include: spelling or grammar mistakes; requests to improve the clarity of the specification; ambiguities in the specification, i.e. where several implementation choices exist which are incompatible from the point of view of an application or network; conflicts between two parts of the specification; and features in the specification which cannot reasonably be implemented or cannot be made to work.

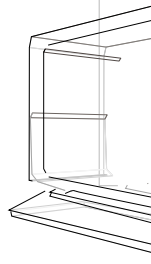
Between January April 2000 and March 2001, a large number of comments on the MHP specification were received and reviewed as part of a process leading to the first maintenance update of MHP 1.0. The final text of this update, known as MHP version 1.0.1 (ETSI TS 101 812 V1.1.2) includes solutions to 1500 comments. Another 628 comments were rejected for various reasons including for being duplicates of others. The single largest source of comments was the exhaustive review of the MHP specification performed by Unisoft under contract to the MHP Test Consortium as one of the first steps towards developing conformance tests for MHP receivers. Version 1.0.1 of the MHP specification was approved in the DVB project in March and April 2001. It was published by ETSI some time later in 2001.

Version 1.1 of the MHP specification was approved in the DVB project in June 2001. It includes the full text of MHP version 1.0.1 as well as a number of extensions, both mandatory and optional. Mandatory extensions mostly relate to extra mechanisms for downloading and signalling of MHP applications, particularly for markets where there is very little bandwidth available for MHP. Optional extensions include DVB-HTML and the MHP Internet access profile. At the moment, MHP version 1.1 is taking very much a "back seat" compared to MHP version 1.0 and very few comments have been received concerning the MHP 1.1 specification.

After MHP version 1.0.1, comments on the MHP specification continued to arrive. Between April 2001 and February 2002, the DVB project continued its process of comment review as part of a process leading to the second maintenance update of MHP 1.0. The final text of this update, known as version 1.0.2, includes solutions to around 500 comments. As with MHP version 1.0.1, one of the largest sources of comments was Unisoft working under contract to the MHP Test Consortium when they reviewed their earlier work with MHP version 1.0 and updated it to fit with version 1.0.1. MHP 1.0.2 is for all practical purposes backward compatible to version 1.0.1.

Whilst there are changes which are not backwards compatible, these are all found in small detailed areas of the specification which are sufficiently impacted by issues and problems that reasonable applications cannot use the affected areas.

In conclusion, version 1.0 of the MHP specification continues to grow in maturity and quality. One very encouraging piece of evidence to support this is that during 2001 and early 2002, several new MHP 1.0 receiver software implementations have appeared from companies who were not involved in writing the MHP specification. These are showing high levels of inter-operability even before any MHP receiver conformance tests are approved.



# ADDING VALUE TO ENTERTAINMENT

CANAL+ TECHNOLOGIES goes beyond the basics of the DVB-MHP standard offering two Java-based DVB-MHP MEDIAHIGHWAY middleware products, each tailored to a specific audience. For television operators, MEDIAHIGHWAY provides a full DVB-MHP end-to-end interactive platform with associated professional services, including system integration and onsite validation. For consumer electronics (CE) manufacturers, MEDIAHIGHWAY-CE delivers an open middleware tool for developing added value interactive television (iTV) applications specifically for the consumer electronics users.

Both MEDIAHIGHWAY solutions feature the Studio+ authoring tool for easy creation of highly interactive, customisable and scalable iTV applications at minimal cost. As an end-to-end solution, MEDIAHIGHWAY includes all necessary head-end components for creating a DVB-MHP compliant solution.

# MHP IN THE USA

Recent announcements from DVB members Canal+ and CableLabs add to the growing success of MHP as an open standard for interactive TV for both the cable and satellite sectors.

The first of such announcements came separately in November by both the DVB and CableLabs, the technology consortium for cable systems operators in North and South America. Both press releases carried the news that cable operators in North America had agreed that MHP is to become the core of the OpenCable Application Platform (OCAP). OCAP is the software specification of the OpenCable project, which solves the problem of proprietary operating system software by creating a common platform upon which interactive services may be deployed. The OpenCable set-top box will allow the cable household to access both digital broadcasting and interactive digital applications. Over 85 per cent of North America's cable household could potentially benefit from MHP-based interactive services.

Commenting on the agreement, Don Dulchinos, Vice President of CableLabs' Advanced Platforms & Services, remarked: "We are pleased to be working with DVB. The OCAP specification has been based on MHP from the start, but we now have an agreement and plan to coordinate the details of the current and future development, implementation and testing of the product."

Peter MacAvock, Executive Director of the DVB Project Office, stated: "CableLabs decision to adopt MHP is yet another milestone for the specification, which has been reaching critical mass. DVB believes that MHP as a common API has great advantages for manufacturers, content developers and consumers alike. The move by CableLabs offers up an enormous market for content providers to author MHP compatible applications for DVB and OpenCable boxes, bringing the write once, read anywhere aspect of DVB-MHP to the forefront of content provision."

That announcement was followed by a report in the industry newsletter Inside Digital TV that Canal+ Technologies had revealed that the MediaHighway technology it is selling to Echostar was to be MHP compliant.

Echostar is the largest DVB-S provider in the US with six satellites in orbit that give the company a footprint to cover all US households and over a 5 million customer base.

In the article Jean-Marc Racine, Executive Vice President, Marketing for the technology division of Canal+ revealed to Barry Flynn of Inside Digital TV "MHP is becoming a worldwide standard" and went on to say "it's great news for us to be able to provide MHP to EchoStar, but I think it's equally important, if not more important to the content industry in general."

**"MHP is becoming a worldwide standard"**

These two announcements push MHP one step closer to becoming the global, defacto open standard, common API for interactive TV. Quite an accomplishment!

# **HIGH UP** IN THE ALPS

httv, a service and technology provider for interactive digital TV based in the French Alps, and CANAL+ TECHNOLOGIES have developed an MHP interactive TV ticker tape application on a DVB-MHP compliant version of the MEDIAHIGHWAY platform. This ticker tape application allows the viewer to profile all the components of their dynamic personalised banner, which can feature news and other information using ticker-style presentation.

Indeed, the viewers can create their own profiles that are stored for each use. It is also possible to create as many profiles as desired by each home user. A personalised profile enables the user(s) to access the information they want. For instance, the viewer may wish to regularly follow a particular stock or even an entire portfolio. This new application will do it simply by registering the different shares. It is even possible to register for the different signs of the horoscope, different kinds of news (international, national or local), favourite sports or checking on the weather every morning. Moreover, you can gather all the information you wish to have each time you switch on the TV: your own horoscope, the latest value of your shares, the weather at your door and your local news.

In My Opinion - Barry Flynn

# A SENSE OF DÉJÀ-VU

I have a sense of déjà-vu about MHP. No jokes, please, along the lines of 'don't you mean presque-vu?' – I'm not referring to the lack of test-suites, but the way MHP's progress has almost exactly mirrored that of the DVB common interface standard back in the early 90s.

The parallels are intriguing: both standards were intended to promote interoperability between rival pay-TV operator's offerings. Both standards caused a deep rift in the DVB membership (which was eventually papered over). Both were accused of being too expensive and/or complex to implement. Both were dismissed as not being commercially ready (compared with existing proprietary solutions), and both gave rise to a fierce political debate about whether they should be legally mandated at European level (an issue which ended up, in both cases, being fudged by the European Commission). Since so-called CAM modules have now carved out quite a market niche for themselves, perhaps we shouldn't be that worried about MHP's prospects! As it happens, these two standards are closely linked – and will continue to be so.

Consider for a moment, what would have happened if the common interface standard *had* been mandated. In France, it would have meant that any digital satellite box would in principle have been able to receive the programming of any of the three digital platforms that then existed (Canalsatellite, TPS and Absat). This would have incentivised each platform to make itself attractive to its rivals' consumer base (since these consumers would represent a much lower subscriber acquisition cost). This in turn would have meant the three agreeing to use a single interactive TV system, since such consumers would not agree to swap if that meant losing access to interactive TV services. To put it another way, if the common interface had been mandated, MHP might well not have been needed.

I'm not arguing here that the common interface (or MHP, for that matter) should have been mandated. The ill-fated 'Mac' Directive taught everyone (well, almost everyone) that technology solutions such as these have to be regulated by the market, not bureaucrats. But the fact that the common interface wasn't mandated all those years ago not only called MHP into being, but also remains, today, a thorn in MHP's side. Even if two rival platforms both adopt MHP, if those platforms are not interoperable at the conditional access level, they won't be interoperable at the interactive TV level, either.

This means that when MHP eventually becomes a globally adopted standard (which I am sure it will, in one form or another, although please don't ask me to name a date), the benefit will not be directly to the consumer but to the content provider, whose costs will be lowered through not having to re-author interactive TV applications from scratch for each and every platform. Of course, consumers should benefit indirectly, since as a result they should be exposed to a greater variety of innovative interactive applications than they would otherwise have been. But something tells me no pay-TV operator is going to pass on the savings to its subscribers – who will probably still have to buy a new box if they want to access someone else's programming or interactive services. And if that doesn't give you a sense of déjà-vu, what does?

**"...consummers should benefit indirectly, since as a result they should be exposed to a greater variety of innovative interactive applications..."**

**Barry Flynn is editor of Inside Digital TV, and has recently launched his own interactive digital TV consultancy, Barry Flynn Associates. Contact: barryflynn@compuserve.com**

# CHANNEL ZAPPING SATISFACTION

A supplier of digital set-top boxes and software solutions for digital interactive television, Advanced Digital Broadcast (ADB), has developed an optimised open standard solution based on the MHP specification.

The platform, compliant with DVB MHP 1.0.1 ETSI TS 101 812 Enhanced and Interactive broadcast profiles, offers ADB's customers the advantage of having MHP applications integrated efficiently in its set-top boxes.
The platform has been designed to interface with applications created on third party MHP compatible software development kits. ADB's solution has been implemented as a platform independent layer and has already been ported on STMicroelectronics' OMEGA family of single chip MPEG2 processors.

ADB has also available a set of tools that allows applications to be designed, developed, and implemented in a simulated end-to-end scenario, resulting in a higher performance efficiency and lower system cost as the software code is considerably optimised.

Based on its proprietary toolset, ADB offers highly efficient solutions for tasks such as channel zapping and booting time, where system responsiveness is a key requirement for viewer satisfaction.

To meet these basic but demanding requirements, ADB developed a set of resident applications compatible with the MHP standard. These include Installation Menu, Zapper, Channel Navigation and Multilanguage Programme Menu. Additionally, a set of interactive applications is also available to ADB's customers, to enable provision of value-added services such as E@syMail, T-Commerce and Information Services. ADB can upgrade these downloadable applications over time, according to the requirements of its clients.

# SUBLIME SOLUTIONS FOR DIGITAL TELEVISION AND DIGITAL CINEMA

The people at Sublime Software are firm believers that interactive services within digital television programmes and, eventually, alongside digital cinema screenings will inevitably change the way people experience what they see. Gradually, the general audience will embrace enhanced TV and unconventional events at the local cinema, and consider them self evident, inseparable parts of the entertainment industry.

**The Sublime iTV Suite is a versatile, easy-to-use tool used to edit, design and finalise additional, interactive applications for television shows.**

Sublime Software specialises in developing mastering and management solutions for video streaming content. It develops and manufactures application development tools for digital television and digital cinema. In this role, it works closely together with the world's leading players in the digital moving image business.

It is fortunate enough to benefit from Finland's unique position in the technological forefront of certain industries. With Finland the first country in the world to adopt the MHP standard as the basis for interactive terrestrial digital television broadcasts, and the nation's unrivalled stance in the world of mobile technology, these are tremendous assets in terms of viable, user-friendly feedback channels used with all kinds of interactive applications in digital television and cinema. Sublime Software is committed to implementing MHP in all its current software systems. The company believes MHP is a truly horizontal approach to DVB services and is the protocol of choice for future DVB broadcasts. Therefore, it is an integral part of its current and future product developments.

Sublime Software's portfolio of packaged products consists of various content mastering and management tools for digital television, and basically covers creating, managing and distributing all the value-added, interactive content available in digital broadcasts. The Sublime iTV Suite is an easy-to-use content authoring system, complete with expansions for various purposes. The system offers television networks and production companies convenient tools to create their own interactive content for TV shows.

Although the advent of digital cinema is still sometime away, Sublime Software feels it is poised to play a major role in the digitalisation of the world's cinema complexes.
The company's theatre and content management interface and network database solution augments the software backbone of digital cinema projectors.

# FINLAND GOES LIVE WITH DVB-MHP

Finland became the first country in the world to broadcast live on-air interactive services using the DVB-MHP standard when the country launched its new digital terrestrial television services. Eight new digital channels were added to the four existing channels giving Finnish viewers a total of twelve channels from which to choose.

At the launch ceremony held at YLE headquarters in Helsinki, the new channels were opened by Mr Heikki Lehmusto, Head of Television YLE, representing the digital television operators. In his speech, he said that he is pleased with the choice of the MHP platform and that Finland's

**"It produces an open, level market where anyone can develop and market applications and receivers."**

solution had attracted broad international interest. He went on to say that television must be able to keep up with what is happening in the world of telecommunications at large and that the age of closed systems in television production is past.

Also at the event, Finland's Minister of Transport and Communications Olli-Pekka Heinonen expressed his faith in the future of digital television and regards the choice of the MHP standard as a wise decision. He added that it would provide Finnish IT companies with a head start for developing new services and business.

Finnish broadcasters and network operators selected the Sony Open

DataCast Platform as the backbone for the delivery of their MHP based interactive services. Another DVB member, Sofia Digital, supplied super teletext services and the national electronic programme guide. In fact, all Finnish DTV channels including the country's most popular TV channel, MTV3, have been supplied with teletext systems from Sofia Digital. Sofia ARENA was used to create these services.

In looking at the various standards, MHP was the natural choice for YLE. Kari Risberg, Project Manager, Digital TV at YLE explains, "MHP is the only standard approved by DVB. Also, it's the only open API that opens up interactive and Internet services. It produces an open, level market where anyone can develop and market applications and receivers."

In selecting its technology partner, YLE was attracted to Sony. "Sony's

**L-R: Mikko Räisänen (Alma Media), Heikki Lehmusto (YLE) and Tapio Kallioja (SWelcom) at Finnish launch**

technology is an important part of our MHP platform," commented Risberg. "The company has a good reputation in this field and its technology is advanced."

The added value of an interactive TV system based on DVB-MHP is the level playing field that this standard creates – one in which telecoms operators, application developers and broadcasters work collectively with no technical barriers to system entry.

"We are proud of being able to provide the first real on-air DVB-MHP applications in the world. Based on our experiences as leading application developers, we believe in DVB-MHP," commented Mika Kanerva, Chief Technology Officer at Sofia Digital. "We have integrated our content management system with Sony's MediaCaster system and used it in an end-to-end content delivery system in the Finnish DTT network."

MediaManager can simultaneously support numerous networked content providers, taking their production environment from a closed environment, based on proprietary technology, to an open standards-based environment. "DVB-MHP represents the best opportunity we've seen for a truly open, inter-operable standard for interactive television," said Allan Arthurs, General Manager, DataCast Europe at Sony Broadcast & Professional Europe. "We are delighted to have been part of this Finnish world's first. The endorsement by companies such as YLE, Digita, Sonera and Sofia Digital has been a source of much encouragement to all involved."

# BUDDING COMPANIONS

**Partnering to develop and market application solutions**

Broadcasting stands on the verge of one of the most exciting eras in its history. In the space of just a few short years, the growth of cable, satellite and terrestrial television has transformed the way we watch TV. Exciting new interactive digital television services, some through the Internet, have become available, with many in the course of development – services like home shopping, home banking, super teletext, electronic programme guides, information channels, gaming, chatting, voting and e-mail. Philips is addressing the requirements arising from these new services with its programme known as CompanionTV. It is aimed at application developers and interactive digital television OEMs and, ultimately, users among broadcasters, network operators and service providers.

Softworks, a business within Philips Digital Networks offers a suite of MHP software development and reference tools. The company's MHP Software Development Kit provides creators of new and exciting applications with the products and support needed to explore the full potential of MHP middleware, applications and services. Included is an MHP reference set-top box that provides a reference environment to create, test, debug and validate MHP applications and the opportunity to run those applications within the physical constraints of a real world MHP receiver. Philips' developer tools for MHP form the basis for an easy migration path to wide implementation of the DVB-MHP standard, ensuring that broadcasters, service providers and network operators can take full advantage of digital TV.

The CompanionTV partnership programme has been set up to establish partnerships with companies to develop the market and application solutions for MHP platforms and offer these to potential customers. Such partnerships offer both technical and commercial advantages to both parties.

On the technical side, CompanionTV partners can work together to develop joint solutions that ensure interoperability between the partners' applications, services and solutions and Philips MHP middleware implementation. Partners also get insider knowledge to ensure continuous compliance with the very latest versions and extensions of the software.

Partners in the CompanionTV programme can also take advantage of a number of combined marketing initiatives. These comprise joint demonstrations of applications and services on top of Philips' middleware platforms, marketing communications material, training, and participation at trade shows, workshops and other events. The commercial relationship can be extended to include other business developments or distributorship.

# ON A CAROUSEL

**David Cutts of S&T describes how to make a simple stepwise investment in transmission systems for MHP and make applications work well along the way.**

MHP uses a delivery technology called DSM-CC Object Carousel (OC) to deliver applications and key data to applications. This enables the presentation of a complete 'broadcast file-system', including directories, to the receiver via the broadcast transmission.

S&T has been developing applications for interactive TV using this technology since it was first used in the UK and its software has been providing 24x7 service since early 2000. It now provides a range of carousel generation solutions for the MHP industry. Each solution provides a complete transport stream, including signalling, for use in direct transmission to a receiver or for re-multiplexing. The solutions are built around carousel encoding technology so that the application author has close control over the disposition of files in the carousel, and their relative priority of transmission. The system also provides for rapidly updating selected files, support of Stream Events and the MHP Application Signalling.

The company's SoftOC package is designed to provide tools for development and test for receiver designers and manufacturers. There are also two packages for application developers. The core workstation is called TSDeveloper. This is presented on a low cost Sun workstation with DVB-ASI output and is typically used

# **NETWORK TEN** LAUNCHES AUSTRALIA'S **FIRST MHP SERVICE**

Australia's commercial free-to-air terrestrial broadcaster Network Ten is the first to support the MHP standard in the Australian market with the development and transmission of MHP applications. A key element of developing MHP applications, to showcase the technology to Network Ten's viewers, was to have a head-end infrastructure that allowed applications to be optimised for transmission.

DVB member Thales' commitment to MHP proved to be an asset when being chosen by Network Ten for its transmission of MHP interactive services. The company's Coral iTV Broadcasting Server was selected as it allows the broadcaster to develop, manage, and deliver "higher-value" broadcast content by performing real time multiplexing of heterogeneous data from multiple sources, including transport stream packet files, section files and associated audio files.

A Coral MHP Broadcasting Server is employed to create and manage the MHP carrousels. Thales claims to have paid particular attention to the carrousel rate and set-top box memory use of its system. Coral's GUI gives easy access to all parameters and statistics and enables the user to: update, add, suppress objects in carousels or application in AITs in real time; send stream events in real time; and set and monitor rates or cycle times for each DSM-CC message.

The Coral platform enables real time broadcasting of interactive data files within MPEG-2 DVB transport streams. It is compatible with any DVB compliant network including satellite, cable or terrestrial.

The initial system will be used by Network Ten, primarily for test transmissions and the ongoing optimisation of interactive services, such as, for its music video programme 'Video Hits'.
The application runs in conjunction with the video clips, allowing viewers to access additional information about the artists and their albums. It also allows the broadcaster to schedule transmissions of these applications on a regular basis.

Digital receivers incorporating MHP will be available for consumers in Australia in the first half of 2002.
In addition to Video Hits, Network Ten plans to have a number of other interactive services operating by that time.

"The Thales equipment will form the basis of the Networks next phase of interactive development by giving us the ability to implement a sustainable transmission system," said Network Ten's network technology development manager, Stephen Rubie.

## CORE VALUE

SkyLife, the Korean satellite broadcaster, is deploying NDS Core in its entry-level set-top box and is planning to implement the Alticast MHP solution with NDS Videoguard conditional access.

Supporting MHP is a priority for NDS to ensure that operators continue to have choice in their technology selections. As part of its overall solution, the company supplies the feature rich set-top box software - NDS Core. This middleware, currently used in over 2 million set-top boxes, is capable of running complex Java-based applications, therefore facilitating the future adoption of MHP. By initially deploying interactive applications based on NDS Core, the operator has a natural and easy migration path to MHP.

with a suitable modulator or direct interface to deliver a transport stream to a 'farm' of MHP receivers.

TSDeveloper can be used in a multi-developer set-up where each developer has control of his 'service' in the transmission. TSDeveloper is also part of a second package called 'MHPExpress' which contains, in addition, Sun's Forte development environment and the 'Gear' package from Snap2 Corporation. This has many useful tools for creating MHP X-lets and eases implementation using the HAVI part of the MHP specification.

In order to transfer applications developed in this way to an 'on-air' trial of MHP, a low cost version of its transmission playout 'TSPlayer' for integration in trials is provided.
This unit plays out to air to a remultiplexer, again through ASI, streams created using TSDeveloper.

Finally, for a full broadcast system which is integrated with broadcast playout, automated data-sources, dynamic database query and rapid update, the full suite of broadcast software includes TSPlayer, TSScheduler (which includes interfaces to existing broadcast automation) and other software that can be integrated in a reliable package depending on the precise needs of the broadcaster and applications.

S&T believes that this range of products offers each part of the MHP community a solution to the issues concerning delivery of applications and content, and enables easy transition from authoring to 'on-air' for content production and transmission.

# **ACHIEVING** A MILESTONE FOR IP COMMUNICATION

A Broadband Interactive (BBI) Network Management System for the world's first Ka-Band system, based on the DVB-RCS standard has been designed and implemented by ND Sat Com. The BBI system, based on the new international open standard DVB-RCS (Return Channel over Satellite), will enable end-users to have two-way broadband data communication from their own premises via standard low cost Satellite Interactive Terminals. Users can contribute data and media-rich content at transmit rates of up to 2 Mbit/s via ASTRA 1H to the BBI hub in Luxembourg via satellite. The BBI system is capable of delivering up to 38 Mbit/s of IP data or content to Satellite Interactive Terminals. Ideally suited for high performance broadband interactive IP applications, this new technology allows SES ASTRA to serve the growing markets for high speed web access, high quality IP video streaming and interactive video conferencing, as well as all standard IP-based needs such as file transfers, e-mail, database management and broadband Internet access in Western and Central Europe.

# **DESIGNS** ON MHP

Bang & Olufsen, renowned for its technological excellence and innovative product design, is the first external company to license Philips' DVB-MHP technology and deploy it in a satellite integrated digital TV (IDTV). The MHP IDTV sets will be offered with a number of standard residential applications. These include an electronic service guide, comprehensive menu functionality, and an application manager for downloadable applications.

Commenting on the deal with Bang & Olufsen, Frank Bosveld of the SoftWorks business group at Philips Digital Networks, said: "We are delighted to deploy our MHP software technology in Bang & Olufsen's new range of IDTV sets and therefore provide them with the technology track for the future."

Peter Petersen, CTO of Bang & Olufsen, added: "We want to pioneer integrated DTV in Europe based on MHP, because we believe strongly in the open platform approach. We are Philips' first customer for their innovative MHP offer, which is a natural choice for us because we have had a technology exchange partnership with Philips for many years. We are assured of success with the addition of these new MHP IDTV sets."

MHP represents a move away from today's closed proprietary operating systems to an open horizontal marketplace, offering important benefits to all parties. Ultimately the benefits fall to the consumer who, using a single MHP set-top box or IDTV will be able to receive a wide range of new exciting multimedia and interactive applications.

Bang & Olufsen will offer MHP technology in three of its product concepts. Look out for these IDTV sets later this year.

# **ZETACAST** LAUNCHES

Ken McKann, well known in the DVB world as chairman of the Technical Module group on Audio-Visual Content (AVC), has left NTL to open a new digital TV consultancy with fellow systems engineer Ian Brown. ZetaCast offers a wide range of services including representation in standardisation bodies, specification of broadcast systems architecture, system integration and supplier management, project management and project design services.

"This is a challenging time to be starting a new venture, but the need for technical consultancy is never greater than when organisations have reduced their in-house capabilities," commented Ken.

# IP DATACASTING & DVB

**Ken McCann of ZetaCast and Chairman, Audio-Visual Content (AVC) group DVB Technical Module reports**

IP datacasting is a prime example of the increasing convergence of broadcasting, telecommunications and computing. The process of making the most of the strengths of each technology is well summarised by the DVB vision statement: “to build a content environment that combines the stability and interoperability of the world of broadcast with the vigour, innovation and multiplicity of services of the world of the Internet”.

IP datacast services use the traditional digital broadcast networks to deliver IP-based audio, video, graphics and other broadband data services to the user at home, at work or on the move. The potential applications range from entertainment (e.g. networked games) to information (e.g. stock market information) and business services (e.g. product updates to a closed user group).

True interactive services require a return channel, although a form of pseudo interactivity can be provided by data storage at the user end. These issues are best illustrated by looking at a specific example: datacasting over a digital terrestrial network using DVB-T.

DVB-T can be used to provide services to fixed receivers, but a particularly interesting application is the distribution of IP services to users on the move. For example, the photograph illustrates the convenience of being able to act on the latest stock market information whilst being driven to a meeting.

The DVB-T specification allows a trade-off between robustness and the data capacity provided in an RF channel. The parameters chosen in the UK for fixed reception give just over 24Mbit/s, whilst a typical mode for robust mobile reception would give about 10Mbit/s.

10Mbit/s could be used to provide web based teletext services on a data carousel. Assuming very little storage in the receiver and hence a 30 second cycle time for the carousel, this would provide a magazine of about 500 web pages: sufficient for basic information services.

The service could be greatly enhanced by adding hard disk storage to the receiver. A 40Gbyte hard disk could store a library of about 700,000 web pages to give pseudo on-demand web browsing, or to play video clips of news or sports. The 10Mbit/s data channel would be sufficient to update the entire contents three times a day.

Finally, UMTS could be added to provide a return channel for true on-demand services and greater capacity for downstream unicast or multicast services, e.g. to download the local traffic information into the car’s navigation system. In principle, either the UMTS channel or else the DVB-T channel could be used to carry unicast data. However, the typical DVB-T infrastructure has cell sizes of about 30km radius, compared to about 1km for UMTS. With today’s infrastructure, the larger number of users who share a DVB-T cell means that unicast data by DVB-T is likely to be best suited to areas of low population density.

The IP Datacast (IPDC) Forum has recently been set up to promote the implementation of IP-based services over digital broadcast platforms. This is an implementation body, whose work is complementary to the standardisation activities within DVB and DAB.

Preparatory work for the Forum began in September of last year, and it formally came into being at its first General Assembly in Zug, Switzerland, on 22 January. The twelve initial members represent most aspects of the broadcast and multimedia industries: Crown Castle, Deutsche Telekom, Digita, NDS, ntl, Nokia, Philips, Rohde & Schwarz, Sonera, Sony, Teracom and The Fantastic Corporation.

Open to new members from throughout the industry, the Forum will act as a catalyst to facilitate the growth of IP-based content rich multimedia applications for delivery via a variety of digital broadcast networks by developing a common set of implementation processes and using a common set of operating standards.

IP datacasting promises to deliver services that make the most of the combination of broadcasting, telecommunications and computing technologies. Such services are already being tested and can be expected to be launched in the near future.

**DVB solutions in abundance – DVB-SCENE highlights some of the new offerings at this year's premiere US exhibition**

# PRODUCT BULLETIN - **NAB**

**DVB** showcases MHP at this year's NAB. Significant advancements towards bringing full interactive/enhanced television and Internet services to consumers will be featured with demos from Canal+ Technologies, Sofia Digital, Sony, Strategy & Technology and Tao Group.

**Broadcast Technology** will exhibit its new DTMD 1000, a professional COFDM modulator with a 70 MHz IF output in addition to UHF output. Designed to meet the needs of set-top box software developers and hardware manufacturers, the DTMD 1000 is optionally available with data rate monitoring on the incoming transport stream.

The DTCR 1000 digital television cable receiver and the DTSR 1000 digital television satellite receiver will both make their first US appearances as concept models at NAB 2002. The company will also introduce to the US market a compact and competitively priced ASI data stream monitor, the DTSM 700.

**Digital Vision** will exhibit the AGR-IV grain and noise reducer, a new version of its ACP colour corrector, and a new aspect ratio converter. Also on exhibit will be the Valhall control system fully integrated with the DVNR real-time image processing workstation.

Tandberg D-ENG solution

Adding to its range of DVB-T transmitter products, **Harris** will show SPOT, a digital repeater that transmits a pristine signal by decoding the DVB-T stream and recoding it before the re-transmission. As a gap filler it can be synchronised to the main transmitter using ITIS SFN technology. SPOT - as it includes the complete COFDM chain - can also be used as a low power standalone transmitter.

The **ND SatCom** SCPC L-band solution that will be exhibited at NAB offers high performance connectivity for broadband corporate networks. Based on the company's SkyLANE L-band modem and transceiver series, the SCPC L-band solution offers data rates from 9.6 kbps to 2048 kbps in 1 bps steps.

**Nextream**, the joint venture of Thomson multimedia and Alcatel are exhibiting a raft of new products at NAB. In the broadcasting and primary distribution applications field, the company will exhibit the new Maestream MPEG-2 server ad insertion solution that provides frame accurate, seamless performance on CBR or VBR streams. Also on exhibit will be advanced adaptive prefiltering algorithms for the DBE 4130 broadcast encoder.

There will be demonstrations of a turnkey end-to-end solution for interactive TV over xDSL access networks with the XNA 4610 head-end IP gateway.

In the fixed contribution applications field, Nextream will launch the µ-XNA 4600 that increases the 4600 family's abilities to transport multimedia services over ATM, SONET, SDH or PDH telecom networks.

Another first for NAB is a new line of high performance, DVB compliant, Internet Protocol Encapsulator (IPE) solutions from **Norsat** with ipe IN A BOX for high-speed data transmission across satellite and cable networks. Other new DVB compliant products will include: the Integrated Services Network (ISN) for managing the reliable and efficient transfer of data over satellite; Full Services Network (FSN) for integrating video, audio, data and telephony applications; and Return Satellite Network (RSN) for two-way high-speed data transmission.

Making its NAB debut is the **Pixelmetrix** DVStation-Q, a new compact version of the DVStation with a new four-port, 2RU preventative monitoring solution designed especially for remote monitoring applications where an integrated display user interface and expandability of the standard DVStation are not required.

**Rohde & Schwarz** will premiere the monitoring receiver Rohde & Schwarz ETX for quality monitoring of broadcasting networks. The cost effective monitoring receiver comes with a variety of measurement functions and optimally meets the requirements of network operators.

The TV Test Transmitter Rohde & Schwarz SFL will be another innovation on show.

The Rohde & Schwarz SFL is the all-in-one solution for the production of STBs and digital TV receivers, as well as for the simulation of digital TV links (terrestrial transmission, satellite and cable).

Also new is the ATM/MPEG2 Test Set Rohde & Schwarz DVATM, which is suitable for all measurement applications in which MPEG2 transport streams are transported via ATM links.

Adding to their DVB range of transmitters, the company will show the new compact, air-cooled, low-power UHF Transmitters Rohde & Schwarz SV7000 for digital TV from 50 W to 200 W that are fitted with LDMOS transistors and integrated OFDM coders.

**Scientific-Atlanta** will exhibit its new PowerVu D9390 advanced modulator alongside of its D9390T advanced modulator with Turbocode. These DVB compliant, QPSK, 8PSK and 16QAM capable modulators are designed for single-channel or multiple-channel satellite transmission.

Also on display at NAB will be the PowerVu D9752 advanced modulator card that provides complete encoding/modulator capabilities for DSNG. The D9752 comes with option for DVB 8PSK or TurboCode 8PSK.

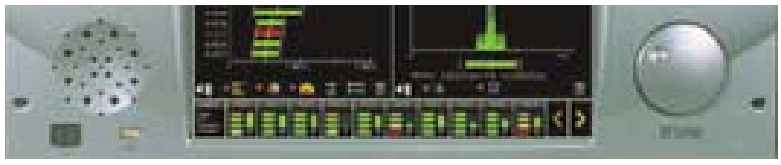
**Sony** will introduce a new low cost, self-contained head-end system for off-air validation and test applications. The DVB compliant MediaStation is capable of delivering audio, video and data services for under Euro 50K.

**Sony's MHP IDTV**

It includes all of the essential elements of a digital TV head-end including an MPEG-2 encoder, multiplexer, modulator and the Sony MediaCaster (DSM-CC Carousel Server). It is a minimal configuration, designed to be both highly compact and as inexpensive as possible while still maintaining fundamental compliance with the DVB standards in respect of Audio/Video and Data Broadcasting.

**TANDBERG** Television will launch new products and debut technologies including: newsgathering and outside broadcast solutions for news-on-demand with Voyager Lite, a ground breaking 'backpack' D-ENG solution designed for wireless cameras and roaming newsgathering and Voyager DSNG systems; control and monitoring solutions; systems to create profitable satellite, DVB-T, cable and broadband businesses; and an iTTV branded broadband range that includes iTTV Pilot – a packaged solution for easy roll-out of broadband video over IP trials.

**Pixelmetrix DVStation-Q**



**Thales** will introduce OpenStream, the entry point to supervise and control all the IP multicast streams in a complete delivery content system. The company will also show its new design for its OPAL IP encapsulator and TOPAZ TV streaming server. Also brand new for NAB is a new line of Test & Measurement Products: the MERCURY real-time MPEG-2 transport stream analyser and the COBALT IP over MPEG-2 real-time analyser.

The MHP Implementers Group member **TVC Multimedia** will demo MHP applications on its stand. Visitors will be able see a configurable ticker, a mosaic application that allows the viewer to navigate a multiwindow screen, an MHP based EPG and METEO a weather information service.



# A FOND FAREWELL BUT NOT GOODBYE

Dear DVB readers,

As you may or may not know I will be leaving the DVB Project Office to pastures new – Advanced Digital Broadcasting S.A. in a business development role. I have enjoyed my time immensely, working closely with Peter MacAvock and the DVB gang, not to mention the DVBites around the world.

So please let me bid you a fond farewell but not goodbye and ask you for your continued support to the DVB and to the incoming Head of Marcomms.

Will see a lot of you again at the PCM, TM, etc. etc. etc

Yours truly,

**Anthony Smith-Chaigneau**
**dragontulip@freesurf.ch**

# BEHIND THE WHEEL WITH MHP

In the last edition, the DVB newsletter highlighted the findings of the MCP (Multimedia Car Platform) project. The project established that with the benefit of diversity antenna DVB-T is also perfectly suited to mobile reception. In this article, T-Systems Nova's Peter Christ takes a look at how MHP services will be enjoyed on the move and in the car. In addition, how positioning and communications services could be combined with data and applications received via digital broadcast.

**Basic Terminal Specification -** MCP started from commercial requirements for an MHP compliant terminal to be used in a car or other mobile environments. Therefore, mandatory features are: the support of MHP (MHP 1.1) applications, several special interface additions respecting the focus on mobile use, and not least an open standard middleware, manufacturer specific and configurable look & feel.

These demands lead to functional and technical requirements and some extensions to the MHP 1.1 standardised open platform. The most remarkable being defined in MCP are: Extended application priority and security handling (e.g. car security breaks media streaming, blocking distraction of the driver while moving); Integration of APIs for Speech, Phone, Navigation, CarData and a car radio interface; Mobile Management Client API; Seamless integration of all types of networks (DVB-T, DAB, GSM, GPRS, Bluetooth, in-car networks) with TCP/IP; JINI service interface; Abstract user interface supporting manufacturer specific user I/O controls.

In addition, the MCP receiver has to perform a number of network related tasks to enable intelligent network control (handoff / handover, cost-function support) and potentially accommodate synergies between IMT and broadcasting bearer services such as antenna steering and diversity reception.

**MCP Services -** The MCP project demonstrated Interactive Mobile Services for car drivers and passengers at IFA 2001. Various applications were demonstrated such as Internet access, cached web services, location aware services, m-commerce and entertainment. For example, the Travel Guide application lead the driver to several destinations included in a precompiled tour using the navigation system. Every time one of the destinations came into reach, details were offered on the screen.

Another user scenario demonstrated within the MCP project was the Clever Petrol application. This application alerted the driver when the fuel gauge ran under a given limit with the driver receiving navigational instructions to the cheapest petrol station in the area.

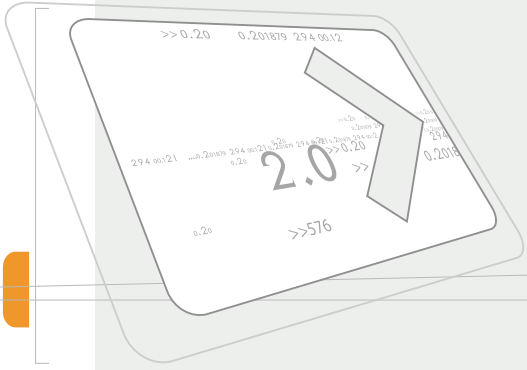
**Conclusions -** MCP provides a powerful architecture for multimedia services in the car. It has designed a set of specifications, both for the car terminal and for integrated mobile communications and broadcast networks to support enhanced broadcasting, mobile communications and positioning services in the car. The MCP software platform is based on the MHP 1.1 specification with extensions to access the navigation, the DAB system, the speech control and the car data bus. The MCP project established that the MHP is suitable for the automotive environment. Content could be conveyed over different networks (DAB, DVB-T, GSM) depending on which is most efficient for the application or data concerned. In a very short time MCP became one of the most relevant European projects in the area of multimedia services for automotive users. All partners acknowledge the need for a coherent launch of MCP services in Europe. The basic specifications of the MCP system, including network and terminal have been published and are available free of charge.

The detailed list of project partners, the draft MCP specification itself and other significant results of the project are available at http://mcp.fantastic.ch

**MCP Forum -** At the end of the project, the MCP Forum was set up with the primary goal to promote the results of the MCP project and to guarantee a continuity of the work.

Questions related to the MCP Forum can be forwarded to: mcpforum@berkom.de

# **BTL RECEIVER CONFIRMS SUPERIORITY** OF DVB-T COFDM OVER ATSC 8VSB IN SOUTH KOREAN TESTS



Broadcast Technology (BTL) has announced that recent tests completed by a committee of South Korean broadcasters confirm the superiority of DVB-T over ATSC. The comparison was conducted by members of the Korean Broadcast Engineers & Technicians Association and Munwha Broadcasting Corporation under the aegis of the South Korean Digital Terrestrial Television Broadcasting (DTTB) Comparative Field Trial Committee.

A two year old DTVM-2000 COFDM DVB-T receiver from BTL, incorporating a first generation chipset, out-performed the very latest 8VSB ATSC receiver from LG Electronics in mobile and stationary tests made with omni-directional outdoor and indoor antennas. DVB-T performance was between 10 and 20% superior to the ATSC system at stationary sites and even further ahead in mobile reception measurements.

The test committee has now advised the South Korean broadcasting authorities to adopt the DVB-T standard on the basis of its proven stability and with an eye towards the rapidly expanding market for DVB-T receivers. DVB-T (COFDM) has been selected for use in China, Europe, India, Latin America and South East Asia compared with two countries (USA and Canada) that have chosen ATSC (8VSB). The US remains at a standstill three years into its digital broadcasting project and Japan has postponed its digital broadcasting schedule to 2003. Taiwan, which initially selected ATSC (8VSB), gave it up for DVB-T (COFDM) following a comparative study in 2001.

BTL commented that the company is pleased that this independent evaluation vindicates the superior performance of both the DVB-T signal format and BTL receivers.

# SMART **SOLUTION**

The TechniData iTV.publisher is the company's first generation software product that according to the manufacturer is an efficient MHP tool that enables broadcasters, broadband network providers and TV media producers to provide flexible interactive content.

These screen shots show an iTV portal designed for buying music products. The system provides high-end features like open design, scalability of performance and sophisticated workflow functionality.

DVB
Digital Video
Broadcasting