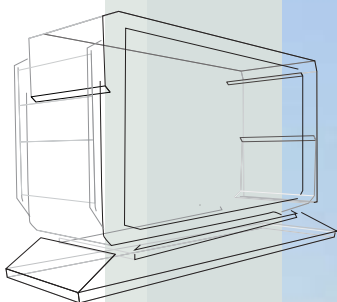


# Berlin Launches DVB-T

## DVB - SCENE

Tune in to Digital Convergence



04

**DVB**<sup>®</sup>

The Standard for the Digital World

### This issue's highlights

- > Blast-off with DVB-T in Germany
- > Working with UMTS
- > Flat panel wake up call
- > EU MHP action plan
- > DVB World 2003





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ADB has consistently contributed to the development of digital TV in more than a dozen world-wide markets and is the partner of choice for your broadcasting future. Come and see us at [www.adbglobal.com](http://www.adbglobal.com)





A word from the DVB Project Office

## DVB-T: ALIVE AND KICKING ...

October and November are traditionally months of preparation for the lucrative holiday season. Despite the current economic downturn, 2002 has seen the launch of the UK free-to-air digital terrestrial services, Freeview, and the launch of DVB-T in Berlin which is perhaps the most innovative to date. In terms of viewers, the UK remains the most successful DVB-T market. The collapse of ITV Digital meant that there were some 1.2 million receivers in the market, and fledgling free-to-air

set top box and IDTV sales. Freeview was launched on October 31st and represents an exclusively free-to-air offering compared to the pay-TV model from ITV Digital. It is early days yet for Freeview, but many in the industry feel that the price of set-top boxes is now low enough to make the offering an attractive alternative to satellite or cable.

Germany is a unique environment. Heavily cabled, and with extensive free-to-air and pay-TV satellite services, it is not an easy one for terrestrial television. In this environment, the independent media authority of Berlin-Brandenburg has been instrumental in bringing together the CE, broadcasting and network provision sectors of the TV industry to engineer a launch of DVB-T on November 1st 2002. While this is a significant step forward for Germany, the real innovation is that, from the launch date, the media authority plans to switch off analogue transmissions gradually in Germany, with the last analogue transmissions being switched off in August 2003, less than a year after the launch of DVB-T! Perhaps this is a model for other markets with congested analogue spectrum and

heavy cable penetration. Either way, Germany will experience in a record timeframe many of the social and economic issues associated with analogue switch-off that all countries must face at some point in the future.

Looking inwards, the DVB Project recently held its 10th General Assembly. 2002 was a year that saw DVB consolidate the MHP specification and the package in general. DVB has also been working hard on the development of some of the convergence specifications resulting from the DVB 2.0 initiative. In 2003, DVB will produce a cookbook for delivery of DVB content on UMTS and IP networks, as well as a set of guidelines for advanced video coding techniques. DVB's aim is to provide the tools the broadcasters and manufacturers require when delivering DVB content on other networks. In addition, DVB has recognised that operators may want to deliver DVB content to PDA type devices where screen size means that lower bit-rate video could be employed with codecs, e.g. H.264-JVT-ISO/IEC AVC, giving improved efficiency over traditional MPEG-2 coding techniques.

## LET IT SHINE

Dr. Hans Hege, Director of Medienanstalt Berlin-Brandenburg

The first of November was the long-awaited day and so in the capital city region Berlin-Brandenburg digital terrestrial television started regular operation on an initial eight channels, with more to come next spring.

Strictly speaking, this is less of an entry than a changeover - and in this respect the first in the world. In Berlin-Brandenburg the changeover has begun in the midst of a crisis in the media and communication industry. That it can nevertheless take place, and not remain a pipedream like so many other projects, is thanks to the observance of a simple rule: it all depends on the consumer! As everyone knows, the transition from analogue to digital is only possible with new terminal equipment, and the consumer paying for it. He will only do that if the advantage over analogue equipment is convincing.

With the broadcasters we have agreed a three stage transition plan that is now going into practical operation.

Had it not been clearly decided that the only way to make our offering competitive was to switch off the analogue frequencies, we could not have achieved a breakthrough with the equipment industry.



It was a pleasant surprise to see the effort the receiver industry is capable of making, even when initially the market is only the comparatively small one of Berlin. I hope this will continue.

The equipment on offer is proof of the capability of medium sized firms to

build on the success of global development. We see the dynamism of the open market which the previous cooperation between Kirch, Bertelsmann and Telekom in favour of a unified German decoder might never have achieved.

We are showing that digital television is more than just pay-TV. However, major challenges await us, especially in regard to practical cooperation between two separate industries: television and mobile telephony. UMTS and DVB-T can complement each other by combining the strengths of content providers and the accounting-know-how of mobile telephone companies.

For us in Germany the challenge is to be the first to show how well our European standards can perform, especially in combination with each other.

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## SATELLITE LAUNCHES

Philips has announced the commercial launch of MHP enabled set-top boxes in Germany and Austria at the end of this year to coincide with the start of free-to-air satellite services. These set-top boxes are designed to facilitate the attractive and feature-rich interactive services enabled by MHP.



# ...BLAST-OFF

## DVB-T in Germany

**Dr. Wilfried Geuen, Managing Director Panasonic European Laboratories**

**Dr. Wilfried Geuen is very much engaged in the promotion of DVB standards, in particular, regarding MHP and DVB-T. He is an elected member of the DVB Steering Board and chairs the national German TV Platform, the market launching group of DVB-T in Germany**

The computers are programmed, the flight drives started and slowly but surely the rocket lifts off the platform with a steadily increasing acceleration towards the destination which is currently not clear. These are the associations coming into my mind when thinking about the start of digital terrestrial TV in Germany.

All the necessary initial steps to start DVB-T in the region Berlin-Brandenburg are complete and since the 1st November DVB-T is a reality in this region.

What are the key characteristics for this DVB-T launch:

1. The whole launch is clearly market driven;
2. Focus: Indoor Reception (app 90% coverage);

3. Quantity and quality of programmes;
4. Retail availability of affordably priced STBs;
5. Variety of products (STB's with/without CI, IDTV's, PC cards, portable equipment);
6. Short simulcast period (less than 10 months).

What is the current situation:

Phase 1: (1st November 2002)

- 2 multiplexes (channels 5 and 44) with 8 programme reception channels (4 public & 4 private);
- Indoor reception inside Berlin with indoor antenna, reception outside Berlin (approx. 20-30 km in the area surrounding Berlin) with outside antenna;
- First STB's in the shops are priced

below 199 Euros and first lease/buy offers on the market are below 9 Euros per month (24 month), which is cheaper than most of the cable TV access fees;

- Several promotional activities organised by the governmental media group MABB and the broadcasters;
- Strong support from dealers.
- First reaction in the market is extremely positive (first products sold out quickly). Of course also, first complaints are coming in regarding additional cost when the analogue service will be shut off. The answer is that it is not the launch of DVB-T that is the reason for the shutdown process, but the number of analogue terrestrial TV viewers is going down steadily (currently the coverage range

# ALEXANDERPLATZ NOW

The Berlin metropolitan area is the first region in Germany to be converted from terrestrial analogue to digital signal transmission.

The DVB-T coverage of households is scheduled to be completed by August 2003. Digitisation of terrestrial frequencies was adopted for the more effective use of available frequency resources. More TV programme channels can thus be transmitted on fewer frequencies and auxiliary services can be offered to viewers.

In the first phase, the Munich based company Rohde & Schwarz is supplying thirteen new transmitters and modifying the existing analogue high power transmitters so that they can be used for digital transmission. After the conversion, thirty TV channels instead of twelve can be received in Berlin by means of antennas. Auxiliary services such as electronic programme guides can also be offered. Since the frequency spectrum assigned to the broadcast corporations is not sufficient, simultaneous analogue and digital operations will be continued for a relatively short period of time only.

The Berlin DVB network has three main transmitter sites: Alexanderplatz, Schäferberg and Scholtzplatz.

Transmitter systems for seven



multiplexers are set up at each transmitter site. The individual multiplexers are configured for single frequency network operation.

The transmitter systems are operated by Deutsche Telekom (T-Systems) in cooperation with the ARD

broadcasting corporation Sender Freies Berlin (SFB).

The first two multiplexers went on-air in early November. The complete network with seven multiplexers is scheduled to be in operation by the end of February 2003.



in Berlin is below 7%) and the maintenance cost for the whole analogue terrestrial network is too high and therefore from an economic point of view this 'old' system has to be switched off.

Phase 2: (1st March 2003)

- Additionally, 4 multiplexes which means in total 24 free-to-air programme reception channels;
- Some private broadcasters will switch off their analogue service;
- The public broadcasters will move their analogue services to low power transmitters and use high power transmitters for the digital service;
- Clear communication to the public that the entire analogue service will cease around August 2003;
- A greater variety of products are

expected and will be confirmed by the CE Manufacturers (around 20 manufacturers with more than 35 models).

Phase 3: (around IFA time in August 2003)

- Shut off of all terrestrial analogue services;
- Additional multiplexes (e.g. PayTV) expected.

Who are the customers for this new service?

Of course, one group is the current terrestrial analogue viewer. However, first indications show that the first time buyer and households with a second and third TV set are interested in this new service. Furthermore, the current cable TV viewer recognises that they now have an alternative. Especially in

Berlin where there is a very high cable penetration and for most of the connected households there was no other distribution service available. In addition, where the cable access fee is part of the total rental fee, organisations set up for the protection of tenants recognise that there is now a new area to advise their customers of with this alternative (e.g. lease/buy versus permanent cable TV access fee).

This approach for Berlin-Brandenburg is not unique because other regions in Germany are already preparing similar launch strategies which are planned to be introduced in the second half of 2003. Furthermore, other countries in the world observing this new approach will be watching to see if the expected success story could be adopted in their countries.



# MATURE APPLICATIONS

## The ZDFdigitext Story

German public broadcaster ZDF recently presented their new MHP free-to-air service ZDFdigitext, a fast multimedia enhanced news and information application broadcast live from Astra and as such, one of the first regular MHP services in Germany. The project goal was to provide a challenging advancement for the well-known analogue TV Teletext service, enhanced with more content, multimedia elements and - most importantly - noticeably faster than the analogue service. To meet these requirements, ZDF teamed up with noted design and technique professionals to create the service. Graphics and UI specialist Pixelpark developed a straightforward, easy to use design and navigation concept targeting all viewers regardless of age and technical interest. All content is clustered thematically in so called magazines whose pages are accessible through a simple, web-like navigation concept using links, while

main menu embraces the magazines and provides a first glance into the latest content. For the technical realisation, the development team at Fraunhofer Institute for Media Communications (IMK) has been involved in the application design process right from the beginning, providing technical consulting, system design and programming. IMK chose a high performance, scalable system design, facilitating an outstanding application performance at a high page count and very brief update cycles.

"Key feature of the system" says IMK project manager Sven Becker "is the specialised thin client architecture that uses certain areas of the MHP API to their full extent to meet the particular project requirements. This allows us to do most of the work on server side, saving time and code size at the box." The system demonstrated contained over 250 pages and there are plans by ZDF for continuous growth to a target volume of 1000+ pages by spring 2003.

## EU ACTION PLAN

The European Parliament has recently adopted a resolution on a European Union action plan for the successful introduction of digital television in Europe. The European Parliament is convinced that digital broadcasting is an essential tool to guarantee access of all European citizens to the services of the information society and to avoid a digital divide.

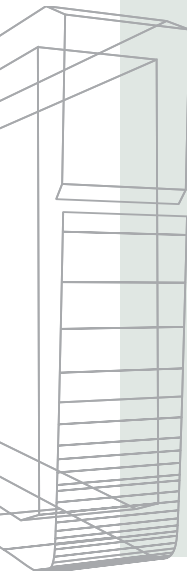
In March 2002, together with the European Council, it issued a directive on a common regulatory framework for electronic communications networks and services (the Framework Directive). Under Article 18 of the Framework Directive, EU Member States shall encourage providers of digital interactive television services and equipment to use an open application programming interface in accordance with the minimum



Photo European Parliament

requirements of the relevant standards or specifications, in order to promote interoperability and thereby facilitate the free flow of information, freedom of choice for consumers, media pluralism and cultural diversity. The Parliament declared that at the moment, only MHP satisfies the requirements of Article 18. The European Commission will shortly publish a list of relevant

standards for the provision of broadcasting services in its Official Journal which will include ETSI TS 102 812 (MHP) and other DVB Standards. The resolution also welcomes the Memorandum of Understanding of the MHP Action Group, whose purpose is to encourage widespread implementation of DVB-MHP.



# TODAY'S PREMIERE

Dr. Helmut Stein, COO of Premiere Fernsehen GmbH & Co. KG



Dr. Helmut Stein is COO of PREMIERE with responsibility for Technology, IT and Service Management. Prior to this, he has held various positions in the Nokia Group from 1990 onwards, most recently as Chief Technical Officer at Nokia Home Communications. After obtaining a doctorate in Physics, he began his professional career in 1973 when he joined Robert Bosch GmbH, before moving to Blaupunkt GmbH in 1977. Dr. Stein became known and has gained particular recognition as a member of the Executive Board and Promotion & Communications Module Chairman of the DVB Project, and also as Chairman of the Consumer Electronics Trade Association and Executive Board Member of the General Association of the Electrical Engineering and Equipment Industry in Germany (ZVEI).

The history of Premiere has always been diversified. From the consolidation with Teleclub, (Germany's first analogue subscription based television founded in 1988) with Premiere in early 1991 to the integration of DF1 (Germany's first digital subscriber television channel launched mid 1996) in October 1999, Premiere has always been on the move. But it has never been as exciting as since Premiere committed itself to the open standard DVB-MHP with the signing of the so called Mainz Declaration in September 2001 that heralded the end of Premiere's proprietary d-box receiver.

Living up to its name, Premiere the German Pay TV provider has always been the first to introduce new concepts and ideas to the world of digital television (in addition to more than 300 movie premieres every year). Still unique worldwide is the German soccer league (Bundesliga) conference channel that Premiere introduced in 2000. Besides the conference, customers can also watch all 306 Bundesliga matches live, of course, as well as the 157 matches of the UEFA Champions League competition. Fans of Formula One can watch all 16 races live and from six different perspectives.

As a result of the aforementioned MHP commitment, Premiere has kicked off three more premieres - each a world's first in its own right - some of these have already taken place while others are on the verge of realisation.

Premiere 1: In March 2002 Premiere changed its business model from rental to retail. In other words, Premiere is no longer the owner of proprietary set-top boxes (in this case: d-box) which are rented out to the membership, but has certified digital receivers from different manufacturers in the sense of a technological opening up of the market which enables more open competition.

Premiere 2: As a next step, Premiere introduced its own common interface (CI) module in October 2002, giving the customer even more choice in picking a digital receiver for decryption of the Premiere programmes. This CI module - which is given to the Premiere subscribers free of charge - works with all CI receivers certified by

Premiere. This additional step of certification is unavoidable in order to assure Premiere's quality of service including multifeed features, NVOD capability and the completion of parental control requirements imposed by German authorities.

Premiere 3: The final step in Premiere's successive 180 degree turn is expected to be taken during the second quarter of 2003. The migration from the current proprietary d-box middleware, Betanova 2, to the open standard DVB-MHP will launch the longed for horizontal MHP market in Germany almost overnight - both over satellite and on cable. For performance reasons, this software substitution will only reach the second generation d-box models, known as d-box2. But it will still create a customer base of nearly 2 million MHP receivers for Premiere, all of whom will also be accessible by other MHP compliant broadcasters.

The new positioning of Premiere currently under way - en route to MHP - will be completed by the introduction of a variety of MHP applications, some of which have already been launched for the proprietary d-box. Those interactive services to be converted to MHP include Premiere Sport Interactive for Bundesliga and Formula One as well as the Premiere EPG and Navigator. Additional MHP based services will be introduced as the market develops which - with the support of Premiere as outlined above - should not be too far down the road for Germany.

SCENE : 07





In My Opinion - Norbert Bolewski

## DVB-T IN BERLIN: FLOP, OR DAWN OF A NEW ERA?

With twelve channels there is certainly no shortage of analogue terrestrial television in Berlin. And yet right now, Berlin is the place where the future of digital terrestrial television in Germany begins, with a lot of question marks and some headaches. Why?

To be precise, digital broadcasting has been happening ever since the 1997 Internationale Funkausstellung (IFA), though at extremely low power levels. The changeover began on 1 November 2002, when two high-power carriers, hitherto used for analogue broadcasting, went into operation. On 28 February 2003 all the supraregional private television channels will convert to digital, while the public service channels will still be seen on the lower-power analogue frequencies until August 2003 when they too will be switched off.

The background to so radical a change is not only technical, but like television in general, it also has political implications. After all, we Germans, like everyone else, have a right to be kept informed via the public service broadcasters. So, it was a big

surprise to see that - quite unlike the usual situation in politics - the parties were capable of hammering out a far-reaching consensus on the introduction of DVB-T. And it is certainly to the outstanding merit of the enterprising Hans Hege, head of the Berlin-Brandenburg Media Institute, that the project, despite behind the scenes rumbling, but an outward show of unity, actually came to fruition in Berlin. To be honest, four years ago no one in Germany really took DVB-T very seriously.

Unfortunately, conditions have even altered since then. The economic situation throughout Germany is hardly rosy, and is viewed with increasing pessimism. People are holding on to their money, and the flop on the stock market for new media, together with a wave of bankruptcies in this area (as witness the Kirch-Group) has made the man in the street sceptical about the whole media concept. This means we are entering a questioning phase, and if we listen to what people who are weary of politics and business are really saying, angry voices are being

raised. The fact that the broadcasters will save money later compared with analogue broadcasting is not the only reason for introducing DVB-T. The suspicion that business has thought up yet another way of coaxing money out of our pockets is finding support. This is because, of course, you need an extra piece of equipment to receive terrestrial television - a set-top decoder that will cost at least 200 Euros. A lot of money when you're out of work.

The DVB-T concept is taking time to root itself in the minds of the public, who start to wonder - out loud through the journalists of the daily press - whether the whole thing is necessary and for whom. Strictly speaking, those who need it are, of course, solely the people who at present watch only analogue terrestrial television. That is fewer than seven percent (approximately 150,000 households) of those who live in the DVB-T broadcasting area (nearly 80% cable, the rest satellite), and most of these, moreover, are not technology freaks or well-to-do. Far from it. Under the law



The members of the German TV Platform MHP marketing team have decided to expand their marketing and communication activities. The European MarCom group will co-ordinate the different national approaches.

For the group, the aims are clear. Firstly, they want to concentrate on the trade and the press. A second step will include the targeting of information to the consumers. To begin with, the MarCom group's website has been redesigned and improved. The development of a unified form of presentation and dealer training via the Internet are next on the schedule. Furthermore, public relations activities are on the to do list. In addition, a newsletter will be offered on the website, so that people interested in regular information can subscribe via e-mail. These activities are sponsored by: ARD Digital, Astra, Gist Communications, Grundig, Fraunhofer Institut Medienkommunikation, Fujitsu Siemens Computers, Institut für Rundfunktechnik (IRT), Nionex GmbH, Nokia, Panasonic, Philips, Premiere, RTL NewMedia, Scip, Sony and ZDFvision. The German TV Platform MHP MarCom Group's website can be found at [www.mhp-forum.de](http://www.mhp-forum.de).



on social assistance, households with especially low incomes can claim a set-top box to enable them to receive television in the future. So, in agreement with the television broadcasters, the Berlin-Brandenburg Media Institute is even willing to provide the social assistance institutions with financial and organisational support in purchasing the necessary equipment on the best

contracts with residential communities and tenants that are not so easy to terminate.

Does this mean DVB-T will be a flop? In spite of everything, I think not, and I wish it success because I believe in it. However, the public's acceptance will not be quick in coming. It will need a lot of staying power, education and skilful marketing is necessary before the consumer becomes aware of the

- DVB-T will slowly catch on. And when there are taxi drivers who equip their cabs in this way not just for their own waiting times but for the customers in the back as well, people with little interest in technology may think there's something good in DVB-T after all, and that it might even be worth equipping their cars with it.

And so forth. One could ramble on at

## “...the resolute introduction of DVB-T is a real starting-point...”

possible terms. So, we can see what the operators are in for. No doubt a splendid thing if instead of receiving 12 digital terrestrial channels you can watch 20 or 24 that you could not receive terrestrially before. But will that particular clientele, who watch only terrestrial television at present, be interested? Unlikely. So there's trouble ahead.

Is quality a sales argument? The answer is again no. Digital does not necessarily mean qualitatively better, and may sometimes mean worse, depending on the compression factor and other parameters. So this is not an argument to get Uncle Fred or Aunt Em to buy a set-top box. They might even be annoyed if, in order to watch television at all, they are more or less forced to do so.

An attraction of a sort for the around 80% of cable users is that they could save the fees they are paying a cable provider. But, on the one hand, the cable operators still have an advantage with their interactive channels, in which the terrestrial broadcasters cannot participate, and, secondly, there are long-term

freedom DVB-T offers him. In contrast to analogue television, DVB-T will bring mobile reception, and people will have to be told about this. This is where we have to start. We have to educate people, especially the daily press and the newsmen in the broadcasting organisations themselves: they must proclaim this from the rooftops. Unfortunately, however, technology in general suffers from ever poorer ratings.

Returning to the subject of DVB-T, Berlin has been a city of allotment gardeners from time immemorial. And when one of them notices that his neighbour can get the next football international with the usual top-quality picture but only a small antenna, he'll start to wonder whether this might be something for him too. When people realise there is nothing to stop them moving the television set to the bedroom when they're confined to bed for a few days and don't want to miss their favourite programmes, and if the television set far away in the kids' room offers a good picture with a connection to the set-top box and an ordinary rod antenna, then - yes, then

much greater length. What will come, sooner or later, is the tie-up of television, Internet and telephone, tailored to mobile and portable reception. That is where the future lies. And to this extent, the resolute introduction of DVB-T is a real starting-point for the citizen's wellbeing, even if at the moment it doesn't really interest him very much. The path that is being followed in Berlin, that is, deliberate switching off of analogue terrestrial, seems to be the only way of giving DVB-T a real chance. If the project fails, then we can forget terrestrial broadcasting - and that would be the actual mistake, far worse than people want to believe at present.

**Norbert Bolewski is Executive Director of the broadcast engineering organisation, FK TG (Fernseh- und Kinotechnische Gesellschaft). He also serves as editor-in-chief of the FK TG publication, FKT (Fernseh- und Kino-Technik). He is an author of several books and a filmmaker.**



**Press conference of the German MHP MarCom Group at the Medientage München. From left to right: Dr. Georg Lütteke (MHP MarCom Group), Björn Fehrm (Fujitsu Siemens Computers), Jochen Weymer (Sony), Michael Albrecht (ARD), Lothar Kerestedjian (Panasonic), Wolfgang Sponner (Philips), Dr. Simone Emmelius (ZDF), Dr. Helmut Stein (Premiere), Roland Stelhe (MHP MarCom Group).**

# A NEW HEAD ON THE BLOCK



**Hermen Rehorst**

On September 13, DVB and ETSI announced that the MHP conformance process was underway as ETSI started distributing the MHP Test Suite. For Hermen Rehorst, who took over as Head of Marketing and Communications from Anthony Smith-Chaigneau in August, it meant that he

hit the ground running. Hermen will be deeply involved in the promotion of the DVB Standards as initiated by DVB's Promotion & Communication Module (PCM) and his first major job will be to give the DVB and MHP websites a complete overhaul.

With the MHP Test Suite available, MHP Implementers are now able to certify the conformance of their equipment to ETSI Standard TS 102 812, the official reference for the MHP standard. ETSI informs us that judging by the number of requests for test suites the industry is eager to get their MHP boxes out into the marketplace.

To use the MHP logo on its equipment, an Implementer must send two signed copies of the MHP Mark License Agreement to the DVB Project Office. The Project Office then checks with ETSI that the Implementer has provided a Certificate of Completion of Conformance Testing. On receipt of the royalty payment the Implementer is then granted the right to use the MHP Mark.

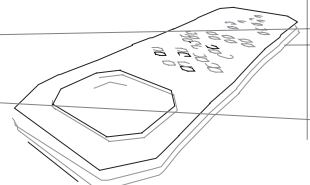
The MHP trademark is protected by international trademark laws and its use will be strictly monitored by the Project Office to ensure it is in accordance with the applicable regulations. How one is allowed to use the MHP trademark is determined by the type of use (equipment, collateral, publications), but in all cases there are rules that apply, so please consult the DVB Project Office or [www.mhp.org](http://www.mhp.org).

The first MHP Mark License Agreements were received in early November and are currently being processed. Provided all conditions are met, this procedure will result in the authorisation to use the MHP Mark. The appropriate graphic files and guidelines will then be provided to the Implementer.

For any questions concerning the DVB and MHP trademarks you are invited to consult the DVB and MHP websites ([www.dvb.org](http://www.dvb.org) and [www.mhp.org](http://www.mhp.org)) or contact Mrs. Eva Melamed at the DVB Project Office: [melamed@dvb.org](mailto:melamed@dvb.org).

DVB-SCENE : 10

## PROCEDURE FOR OBTAINING THE MHP MARK



1. Download the MHP specification and references from either the ETSI (<http://www.etsi.org/getastandard/home.htm>) or the MHP ([http://www.mhp.org/technical\\_essen/](http://www.mhp.org/technical_essen/)) website.
2. Request the MHP Test Suite from ETSI. Contact: Ms. Gina Ebenezersson ([Gina.Ebenezersson@etsi.fr](mailto:Gina.Ebenezersson@etsi.fr)).
3. Complete the appropriate licensing documentation associated with the Test Suite and pay an administrative fee to ETSI.
4. Possibly obtain some elements of source code and test harnesses at this point also under license but with no extra charge.
5. Run the tests contained on the MHP Test Suite CD-ROM on the candidate MHP implementation.

6. Once completed, deliver a Certificate of Completion of conformance testing to ETSI.
7. In parallel, and as an option, deliver to the DVB Project Office two signed copies of the MHP Mark License Agreement. Contact: Ms. Eva Melamed ([melamed@dvb.org](mailto:melamed@dvb.org)).
8. Pay a maintenance fee to the DVB Project for MHP Mark. This entitles the implementer to use the MHP Mark.
9. At this point, there are various options for use of IPRs associated with Java™ technology essential to the implementation of the MHP specification:
  - a. deliver to ETSI a "short-form patent license";
  - b. enter into broader licensing arrangements with MHP technology providers;

- c. sign no license, on the basis that the implementer takes the view that it has implemented the MHP specification "on a clean room basis".
- This is only a short summary of the MHP conformance testing and licensing regime. They are more fully explained in DVB BlueBook A066, which can be obtained from the MHP website (<http://www.mhp.org/>).

**Eva Melamed**





## WORKING WITH UMTS

**Professor David Crawford, Chairman, DVB ad hoc Group UMTS**

DVB is undertaking new work directions that are taking its mission outside its original heartland technology of broadcasting. The focus of this new work will be to ensure that content is able to move from source providers, across various national, local and in-home networks, to reach a variety of consumer devices - and this will necessarily include aspects of local storage and re-formatting of content for different platforms and receivers. To deliver this mission, DVB has identified a framework of strategic work areas, with new commercial requirements flowing from the Commercial Module providing the input for this framework.

One strategic work area is concerned with the inter-working of broadcast systems and services with 3rd generation ('3G') and future mobile cellular networks. In Europe, the 3G mobile standard is known as the Universal Mobile Telephone System, and the Technical Module ad hoc Group 'UMTS' has been tasked with

developing technical standards and guidelines for business opportunities and services in this new arena.

Value for money is a key requirement for new services from consumers who are conditioned by "free" Internet services, cheap voice telephony and free-to-air radio and TV broadcasting. Cellular 3G systems will be capable of delivering many of the interactive and personalised services that consumers will want; but the cellular approach does not provide a low cost delivery mechanism for large quantities of data to large numbers of customers. Conversely, broadcast systems can deliver large quantities of data at relatively low cost, but with limited interactivity or personalisation of content.

Co-operative services which jointly utilise DVB broadcast and UMTS mobile systems, matching data and application requirements to the best platform, could meet consumer demands for more powerful interactive and personalised services at low cost.

DVB ad hoc Group UMTS is identifying the development path for co-operative services utilising UMTS and DVB platforms.

The first specifications that are being written refer to the use of UMTS as a return and interaction channel, with no real inter-working between the networks. These have many commonalities with terrestrial broadcasting return channel specifications previously developed within the DVB Project (e.g. RCT-GSM), and cover the needs of applications such as voting, interactive camera shot selection and electronic ordering of video and audio content for downloading offline.

The second series of specifications will cater for the scenario of fixed/portable (nomadic) terminals running both MHP (for DVB-T) and Java - based execution environments (for UMTS), and working as the processing centre for co-operative applications between the two platforms. This work will support applications such as carouselled Web pages transmitted via the broadcast platform but complemented by always-on Internet access via UMTS, enabling interaction and hyperlink jumps to new Web content, plus multi-user game scenarios etc.

Finally, the specifications required for fully converged applications for integrated mobile handsets and for terminals in vehicles will be derived in concert with the work of other Groups, such as 'DVB-Mobile' and 'MHP-Automotive'.

The final specifications will include sections on metadata 'handshaking' for the setting up of the co-operation protocols, the identification of billing and charge sharing mechanisms, and some measurable parameters for Quality of Service requirements. The specifications will also define the interfaces and processes for a network 'Mediation Platform' which will allow the sharing and redirecting of data.

The author thanks all members of the UMTS Group for their commitment and contributions which have been absorbed into this work.



# FLAT PANEL WAKE UP CALL FOR BROADCASTERS

David Wood, Head of New Technology, EBU

Flat panel plasma displays (AC PDPs) are beginning to make inroads into the domestic TV market. CRTs still take virtually 99%, but AC PDP sales look like beginning to take off, as costs fall. Coupled with this, manufacturing capacity for AC PDPs is being dramatically increased in the east. Apart from falling prices, there are arguably two other market drivers for improved TV displays. One is digital television. The other is the uptake of DVD, which can now deliver the highest quality available into the home. Given that copy control mechanisms are sorted out, the DVD is capable of bringing HD into the home also. The take up rate of DVD, even conventional quality, is now three times that of VHS. This is a force to be reckoned with. It may define what the public expects and wants in picture quality in future.

In recent months, broadcasters have been examining how our broadcasts will fare in a flat panel environment. There are two main types of flat panel display: the Wide VGA and the WideXGA. These are essentially widescreen versions - with proportionately more horizontal pixels - of the common computer display

formats. Whether broadcasters like it or not, these are probably the home display formats of the future, and whatever we broadcast will have to be standards converted to them.

The first series of tests done were to examine how the lower quality AC PDP format, the WideVGA, looks when driven with 625-line signals. There were surprises.

The first was that if the 625-line pictures are really clean (studio 601 quality), the WideVGA can do justice to them, in spite of having only 480 vertical pixels. This is because the display is progressively scanned, and the resolution beyond 480 lines is not available anyway with interlace pictures.

The second finding was that pictures in PAL on a WideVGA are poor.

Furthermore, the kind of digital bit rates used systematically throughout Europe today for digital television are way too low to give good quality pictures. The flat panel acts as an impairment magnifier, and what might pass unnoticed on a CRT looks worse on an AC-PDP. To get pictures which are clean appears to mean moving as high as 8-10Mbit/s - double the bit

rates used today. The consequences for doing so on channel capacity would be obvious.

The second series of tests were done with HDTV. The conclusions may surprise some, but are in line with what the academic world has been telling the broadcast industry for many years. We need to switch to progressive scanning rather than interlace scanning for HDTV delivery to get the lowest bit rates for a given picture quality. If you want the numbers, broadcasting the 720p HDTV format needs about 3/4Mbit/s less than 1080i to get the same quality. It needs about 18-19Mbit/s, so HDTV does not come free, but it is quite good value when you think the picture is three or four times as good as the conventional 625i one for only double the bit rate. The 64,000 dollar question is whether and when AC-PDP display will be a sizeable portion of the market - and thus when broadcasters will have to start feeding them with picture qualities that makes the owners feel they didn't waste their money. Time will tell.

For a copy of the Information Document about the tests, e-mail [vanbergheml@ebu.ch](mailto:vanbergheml@ebu.ch).

# DIGITAL LIGHT PROCESSING

Actual close-up photographs of both (A) an LCD-projected image and (B) a DLP-projected image. A three-panel poly-silicon VGA resolution LCD projector (A) and a one-chip VGA resolution DLP projector (B) both project the photograph of the parrot shown in Figure above. Both the LCD and DLP photos were taken under the same conditions, with each projector being optimised for focus, brightness, and colour. Note the high level of pixelation in the LCD image in contrast to the seamless DLP image. DLP offers superior picture quality because the DMD(tm) (Digital Micromirror Device) mirror pixels are separated by only 1  $\mu$  thus eliminating pixelation.



# ON THE ROAD AGAIN

TANDBERG Television, Microsoft and NTL teamed up recently to present the first demonstration of high-quality video, encoded into the Windows Media Video 9 format, delivered in real time over a DVB-T mobile network to moving vehicles in Amsterdam. To do this, the companies created an end-to-end DVB broadcast system that combined file transfer and live streaming of real-time broadcast-quality Windows Media Video 9 utilising satellite and terrestrial networks.





Photo: Tom Rijgersberg

## GET ON

# TOP OF THE WORLD

In this age of rapid developments, periodic updates are an essential commodity in the life of the busy executive. This is especially true in the case of digital technology. The world that we live in changes daily as new and more sophisticated technologies are introduced on a routine basis.

DVB World has now established itself as the most important annual event dealing with digital television in the European calendar. The Conference provides the unique opportunity for all involved in Digital Media to meet, listen to authoritative speakers and discuss the topical questions facing the industry today.

DVB World 2001 and 2002 were highly successful events with attendances of approximately 150 delegates in each year. Although the attendees were predominately European there were also representatives from North America, Australia and Asia reflecting the ever increasing interest being shown in DVB systems throughout the world. In past years the conferences dealt with a wide range of related topics and, in particular, brought

forward the results of studies and deliberations on the advanced specifications and standards which govern DVB systems and services.

During the course of a year the DVB Project refines and broadens its applications at a pace that we all find difficult to keep up with. To this end the annual conference has proved to be a great success in the past and following on the demands from this years participants the International Academy of Broadcasting and the DVB Project are pleased to announce DVB World 2003, which will be held in Dublin on the 5, 6, 7 March 2003.

Developments in the diverse fields of digital technology converge to provide solutions which have huge implications for all of us working in the media. It is really impossible to absorb all of the detail but the DVB World conferences give us the opportunity to learn in three days of the significant developments in each preceding year. DVB World 2003 will feature the major participants in the DVB Project; the Chairmen of the various modules, the prominent personalities participating in

the working groups and those responsible for the implementation of the digital systems throughout the world.

Although the programme is now almost complete there are a small number of speaking opportunities open. Those interested in putting forward a presentation should email; [seminar@iab.ch](mailto:seminar@iab.ch) giving a short synopsis of the proposal. This will be considered by the programme committee.

Apart from the reports on the ongoing work within the various modules the programme will include a session on the Multimedia Home Platform and a special session devoted to case studies during which progress on the implementation of DVB systems will be discussed.

The full programme has been published on the DVB website ([www.dvb.org](http://www.dvb.org)) and on the IAB website ([www.iab.ch](http://www.iab.ch)) and further information can be obtained by emailing [seminar@iab.ch](mailto:seminar@iab.ch).

As usual the social programme will provide more opportunities for networking and for relaxation.

# MAKE A DATE AT THE PAVILLION

The DVB Promotions and Communications Module had a very successful year due to the support of its members. The decision to ask members to sponsor demonstrations of the latest DVB technologies and products on the DVB stands at the three big trade shows, NAB in Las Vegas, Broadcast Asia in Singapore and IBC in Amsterdam, this year was very well received and some companies participated twice.

Sponsorship through participation on the DVB stand gives some of our smaller member companies the opportunity for exposure to a wider audience than they might achieve independently for a variety of reasons. Simultaneously, the more specialised divisions of our larger members are able to get more visibility under the neutral DVB umbrella for their specific technologies and/or products than they might as part of a large company stand showing a multiplicity of different aspects of the broadcasting and communications world.

The DVB and MHP registered trademarks are virtually global brands



Photo: Tom Rijgersberg

and exhibition visitors appreciate the possibility of seeing a variety of the technologies, products and applications under one roof.

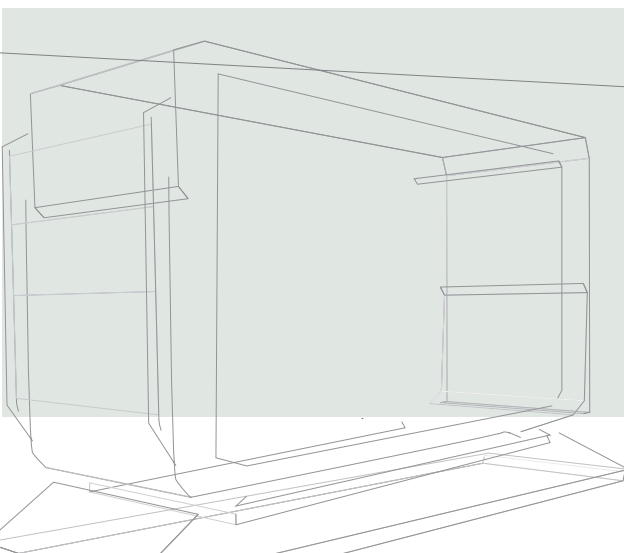
Thank you to all our members for the enormous promotional successes of this year. In 2003, the DVB will be exhibiting at NAB in April, at Broadcast

Asia in June and at IBC in September and we look forward to your continuing support at these events and in the future.

For further information please contact Nahid Khan, DVB Project Office: [khan@dvb.org](mailto:khan@dvb.org).

## NEW MEMBERS

**Anacom**  
**Dream Media**  
**Efficient Channel Coding**  
**Hyundai Digital**  
**The Open Group**  
**SchlumbergerSema**



**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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March 5th, 6th & 7th?**

**At the most important annual international  
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**Forward thinkers  
know they will be at the Alexander Hotel  
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