First outing for MHP at IFA 99

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The IRT – together with a group of representatives from DVB, the EBU, public and private broadcasters, research institutes as well as the software, computer and consumer electronics industries – staged the first public demonstrations of the Multimedia Home Platform (MHP) at IFA 99 in Berlin, during late August/early September 1999. The demonstrations were considered a great success as outlined in this report.

Introduction

Service providers and manufacturers have recently begun to demonstrate practical applications and prototypes which feature key elements of the future DVB Multimedia Home Platform (MHP) [1]. These presentations have addressed a wide, technically-oriented, public at various international trade fairs, commencing with the 1999 Internationale Funkausstellung (IFA) in Berlin during the late summer of last year.

Examples of DVB set-top boxes from Sony and Philips.

At the time of writing, these demonstrations, have not yet shown the MHP in its final form. However, they have highlighted the advanced status of the MHP specification. This is an important step towards the availability of MHP products which are expected to appear on the market, in various European countries, by the end of the year 2000.

The Multimedia Home Platform

Digital receivers support more than just classical TV and radio programmes, i.e. those broadcast from one sender to many receivers. In addition, they can offer access to new multimedia and interactive services, and can support high-speed internet access via cable, satellite or terrestrial networks, using the TV as a display medium.

However, all functions that are additional to the simple reception of TV and radio programmes require receivers that are able to execute software commands, similar to a computer.

Until now, the software interface (API) has not been standardized. Some broadcasters have chosen different non-interoperable proprietary systems, resulting in obstacles to an open horizontal market for digital receivers. The MHP is seen as the common European alternative.

The DVB Forum – the umbrella organization of all companies taking part in the development of digital TV – is in the process of agreeing a common standard for an API that can be used universally by all digital receivers (e.g. set-top-boxes). Called the DVB-MHP API, this interface will be available to all content providers and set-top box manufacturers, allowing set-top boxes to log on transparently to all services in a horizontal market.

The DVB-MHP API is a software package, based on Java™ technology. Internet access will be possible, relying on tools recommended by W3C and the IETF. Furthermore, the DVB Common Interface (CI) will enable the use of different Conditional Access systems, and therefore the use of all services on one set-top box.

The DVB-MHP API will be implemented not only in set-top-boxes and integrated digital TV receivers, but also in multimedia PCs. Through these hardware devices and their

General view of the MHP stand at IFA 99.

associated peripherals, the MHP API will connect together the worlds of broadcasting, the Internet, computers and telecommunications.

The MHP API will create new marketing opportunities, based on a wide range of possible consumer options. New MHP devices will become available from retailers of the consumer's choice and will be able to make use of multimedia and other data services, in addition to conventional TV and radio programmes. This should ensure the development of an open horizontal market.

First public demonstrations

Ahead of their actual introduction in the year 2000, prototypes of MHP devices were demonstrated for the first time in public during IFA 99. Those prototypes relied on the implementation of several key elements of the future DVB-MHP specification. In order to make demonstrations possible while still working in parallel on the specification, the so-called "IFA profile" was frozen at a point which covered approximately 80 per cent of the final DVB-MHP Specification, expected during January 2000.

a) MHP prototypes

Based on this "IFA profile", three manufacturers – Panasonic, Philips and Sony – were able to finish MHP prototype set-top boxes in time for the IFA demonstrations. Grundig presented a PC-based MHP solution. Demonstrations of these MHPs were given in six different areas of the IFA, both public and in private dealer areas, with a main DVB-MHP booth situated in the Science and Technology Forum.

Table 1
List of applications shown at IFA 99.

Application	Application Provider
Electronic Programme Guide (ARD)	IRT
Digital Text	BBC
Electronic Programme Guide (RAI)	RAI
Electronic Programme Guide (RTL World)	RTL
Golf Demo	Philips
News Ticker	BBC
News Ticker	IRT
Space Invaders	Bertelsmann
Tele Voting	IRT
Top of the Pops	Sun/BBC
World Clock	Canal+

b) MHP example applications

Almost a dozen different MHP broadcast multimedia applications were shown in Berlin, including Electronic Programme Guides, News Tickers, Tele Voting, games and interac-

tive applications for both music and sports programmes. The applications which were prepared are shown in *Table 1*.

c) Interoperability

While some of the applications shown in *Table 1* were demonstrated as a "canned demo" (i.e. the transport streams were stored on a local server), the RTL World EPG was successfully launched as a live demonstration via the Astra satellite. In that way, it was possible to prove the complete route that an application takes from the playout centre, via the data carrousel and satellite transmission, to the point of reception by the set-top-box.

In the demonstration set-up, it was possible to download and launch the RTL World EPG off-air on all three MHP prototype set-top boxes. This live broadcast was of considerable importance in highlighting one major commercial requirement of the MHP – *interoperability.*

d) Migration

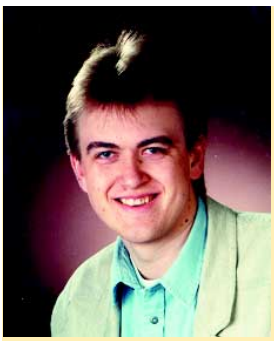
The IFA demonstrations also stressed another key feature of the MHP – *migration*. Two of the MHP applications shown in Berlin – the EPGs of ARD and RTL World – were identical to their proprietary OpenTV-based "sister" applications which were (and still are) on the air for F.U.N. set-top boxes. Thus it was possible to draw attention to the fact that the step from today's deployed proprietary platforms to the open-standard MHP of tomorrow is workable.

The MHP Specification will also support migration from existing operational proprietary solutions by other means. Special software layers (plug-ins) will emulate applications written in non-MHP languages (bound to a specific set-top-box), offering interoperability with MHP-compliant set-top boxes.

Even if some of the MHP functionality shown at IFA 99 was capable of improvement, one should not forget the fact that all the prototype set-top boxes, and all the example

Abbreviations

API	Application programming interface	**DVB**	Digital Video Broad-casting
EACEM	European Association of Consumer Electronics Manufacturers	**IRT**	*Institut für Rundfunktechnik GmbH* (German broadcast engineering research centre)
IETF	Internet Engineering Task Force		
IFA	*Internationale Funkausstellung* (Berlin consumer electronics exhibition)	**MHP**	(DVB) Multimedia Home Platform
		W3C	World Wide Web Consortium



Stephan Heimbecher received his diploma in Electrical Engineering (main focus: Communications Engineering) from the Technical University in Krefeld, Germany, in 1992. Since that time, he has worked as scientific research assistant at Institut für Rundfunktechnik GmbH (IRT), the research and development institute of the public broadcasters in Germany, Austria, and Switzerland. At the IRT, Mr Heimbecher worked on DAB technology within the Audio Coding department until 1996, before joining the Information and Data Services department and has worked in the field of Digital Television ever since. He was involved in the Electronic Programme Guide (EPG) project for ARD and ZDF, including demonstrations at IFA 1997 and Cebit Home 1998.

In late 1997, Mr Heimbecher became a member of the DVB TAM group which deals with the technical aspects of the Multimedia Home Platform (MHP), and in 1999 he was project leader of the first public demonstrations of the MHP at IFA 1999 in Berlin. His current work focuses on TV Anytime, the exploitation of local persistent storage in consumer electronics platforms.

applications, were based on the "IFA profile" – a subset of the DVB-MHP Specification that will be released in early 2000. Despite that, this first public demonstration of the MHP was able to give out one clear message to the world – the MHP is ready!

e) MHP is ready

The MHP booth in the Science and Technology Forum, sponsored by the EBU and EACEM, was besieged by both technically-oriented visitors and interested consumers, during all nine of the exhibition days. An accompanying press conference, organized by the German TV Platform, and other informative events about the MHP and its underlying technology, helped to produce intensive press coverage of the MHP demonstrations in Germany and abroad.

But it wasn't just the public triumph that made the MHP demonstrations a big success. It was also an important step forward for the DVB Project itself, as both the manufacturers and the application providers were able to gain a lot of experience for the future of the MHP. As a side issue, the "IFA profile" underwent a technical validation which is an important step forward towards the availability of full MHP products in the year 2000.

Bibliography

[1] J.-P. Evain: **The Multimedia Home Platform – an overview**
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