



**Knowledge**Database  
MHP-KDB



Information Society  
Technologies

**507442**  
**MHP-KDB**

## **The MHP Knowledge Project**

**Instrument: STREP**  
**Thematic Priority: IST**

### **Publishable** **Final Activity Report** (D20)

**Period covered:** December 2003 to March 2006  
**Start date of project:** 01 December 2003  
**Duration:** 28 Months

**Project coordinator name:** Klaus Merkel

**Project coordinator organisation name:** Institut für Rundfunktechnik GmbH (IRT)

**Date of preparation:** 31.03.2006

**Revision:** Version 1.0





## Contact

Email: [info@mhpkdb.org](mailto:info@mhpkdb.org)

Website: <http://www.mhpkdb.org>

## Project objectives

DVB-MHP (Digital Video Broadcasting - Multimedia Home Platform) is the standard to bring about full interoperability and a truly open market in the interactive digital television arena. In order to actively support and accelerate MHP take-up throughout Europe and beyond, THE MHP KNOWLEDGE PROJECT was launched in December 2003. Initiated by core members of the MHP Alliance, the EC co-funded research project has combined the competence of some of the Alliance's key players with that of notable partners from technology research.

By establishing the MHP Knowledge Database (MHP-KDB) the project set out to tackle one of the most pressing issues in the field of digital interactive television today: the interoperability of MHP implementations and applications.

The knowledge database was designed to store all questions and issues that arise during the process of developing MHP decoders and MHP applications in end-to-end system development.

The project has achieved:

- A knowledge database on all relevant MHP issues
- A test centre accessible via Internet
- Freely available reference application modules
- Public guidelines and recommendations on the usage of MHP

MHP-KDB has not only relied on internal expertise but has encouraged the whole MHP community to contribute to the project by sharing practical experience on interoperability issues. The project ensures that useful information is available on all components within the entire value chain. It collects know-how and best practice solutions and provides them to all companies and organisations active in this field. The kind of knowledge generated in the project, which includes application code and proven best-practice recommendations, ensures that MHP-KDB provides sustainable solutions vital to the growth and competitiveness of the European media industry in the digital TV market. The gathered knowledge evolves during further standardisation of MHP.

## Co-ordinator contact details

Institut für Rundfunktechnik GmbH  
 Floriansmühlstraße 60  
 D – 80939 München

Klaus Merkel  
 Phone: + 49 89 323 99 225  
 e-mail: [merkel@irt.de](mailto:merkel@irt.de)

## Contractors involved

Consortium members		Main activity
IRT	Institut für Rundfunktechnik, Munich (Germany)	Co-ordinator, WP5 leader MHP Know-How MHP infrastructure
BMT	Bayerische Medientechnik, Munich (Germany)	MHP Know-How
DR	Danish Broadcasting Corporation, Søborg (Denmark)	MHP Know-How
DW	Deutsche Welle, Bonn (Germany)	MHP Know-How
ITA	Instituto Tecnológico de Aragón, Zaragoza (Spain)	MHP infrastructure
RBB	Rundfunk Berlin-Brandenburg, Potsdam (Germany)	MHP Know-How MHP infrastructure
PEL	Panasonic European Laboratories	MHP Know-How
PAV	Panasonic AVC Networks Germany, (Germany)	MHP Know-How
PCE	Philips CE/STB, Suresnes (France)	WP4 leader MHP Know-How
TN	Telenor, Fornebu (Norway)	WP2 leader MHP infrastructure MHP Know-How
TCL	tComLabs, Ghent (Belgium)	MHP infrastructure
UDE	Universität Duisburg-Essen, ICB, Essen (Germany)	WP3 leader MHP infrastructure

## Work performed / End results achieved

### *Market analysis*

A market analysis has been performed for the European MHP market which shows the actual situation with regards to MHP in each country as published in Deliverable D1 (ref. Table1). This document was compiled at the beginning of the project and, due to the very high interest received for this document, has been provided at the end of the project in an updated version.

### *Requirements specification*

Based on the market analysis and the objectives of this project the requirements have been defined in detail for the technical infrastructure of the project as well as for the content aspects to be delivered.

The prime part of the technical infrastructure can be seen in the database, holding all the collected knowledge. Data model and intended workflow had been defined during the first months of the project.

With regard to the actual MHP know-how a list of numerous technical aspects of MHP had been defined in detail, which had, as a minimum, to be covered by the project.

### *Web portal implementation*

A web portal was designed and implemented which gives access to all documents and information as well as to the database itself. In every phase of the project the web portal has been upgraded to make the ongoing project results available. This includes all public deliverables.

### *Database implementation*

The database system was implemented on the basis of a document management system. It has been available for testing and demonstration purposes since IBC 2004. By mid of 2005 the database was running fully functional and opened to general public use. Subsequently the search options were extended and minor improvements were made. The database holds, at the end of the project, hundreds of documents and administers more than 250 users.

The web portal and database is fully and performantly workable and covers all planned functionalities of the project. All user interfaces seem to be convenient and self-explaining.

### *Knowledge Building*

The whole spectrum of potential MHP "issues" as determined in the analysis phase of the project is actually covered by "solutions" which can be found in written guidelines or obtained via database queries.

Furthermore, answers to questions which were raised by third parties have been included to the extent possible. All know-how finally available was not only provided by consortium members but also by other market players interested in MHP. The open database structure allows not only for questions from external parties but also for externally proposed solutions.

### *Tools*

A variety of software tools which are useful in the context of MHP authoring and testing have been developed. They are available for free via the Knowledge Database. Besides software tools which can be downloaded and used locally, some test centres have been developed and set up at partners' sites. They are accessible via web interfaces for registered users beyond the official end of the project. Applications which have been created by database users can be subjected to various tests using these facilities.

### *Dissemination*

Besides the implementation of the web portal, major dissemination activities have been the presentation of the project at trade fairs - the most important of them being the IBC 2004 and 2005. Additionally, three ITV workshops have been organised in October 2004, February 2006 and March 2006.

All main project results are available via the website for free: documents analysing the MHP market situation as well as "The MHP Guide" which is a detailed tutorial on all MHP aspects, the database containing a big bulk of MHP know-how and finally the access to the test centres.

This website has attracted more than 10.000 visits up to now; the MHP market analysis ([Deliverable D1](#)) has even been downloaded 20.000 times. The database has about 300 registered external users. These figures clearly show the importance of the web as the main tool for dissemination.

### **Dissemination and use**

The final targeted impact of this project is on societal questions as raised by the European Community in its European Framework directive 2002/21/EC and the EP Resolution of Sept. 26<sup>th</sup> 2002:

"The audiovisual sector is regarded to be of fundamental importance for democracy, freedom of expression and cultural pluralism, and digital broadcasting and its proper function is an

essential tool to guarantee access of all European citizens to the services of the information society. To achieve full functionality in this sector, full interoperability of digital interactive television services and enhanced digital television equipment is required at the level of the consumer equipment.”

These goals had been the driving factor for the definition of an open API standard and have lead to the development of the MHP technology. At the moment, only DVB-MHP, as standardised by ETSI, provides for an open solution as a prerequisite for an open / horizontal market.

The basic aim of THE MHP KNOWLEGDE PROJECT was to contribute to these goals by enabling optimum interoperability in the usage of the MHP technology. Thanks to the findings of this project, all market players shall be able to make best use of MHP for their broadcast services and products.

Thus the project has impact

- on the market for digital television at its crucial stage of switch-over from analogue to digital services, which, besides its political and cultural aspects, is also a major economic challenge. Applications programmers and decoder manufacturers are able to take most advantage of the technical information provided by the project, but also broadcasters and equipment manufacturers profit from the relevant information.
- on the EU policy as it shows to what extent the MHP technology is able to satisfy the basic requirements depicted above. These findings help the EC to determine their future policy with regard to the implementation of in interoperable market for interactive television, granting a free flow of information, media pluralism and cultural diversity.
- on migrating markets (i.e. markets moving from a proprietary API system to the open, standardised MHP system) as they need in some cases specialised MHP know-how to solve their specific problems. One of the basic technical problems, which can be foreseen in such cases is, that data has to be shared by proprietary applications and MHP applications.

Achieving a broad dissemination and usage of the knowledge aggregated within this project is one of its fundamental aims. By the communication of the results and a broad sharing of guidelines and reusable software modules, the basic goal of working as a "catalyst" for the whole market of digital interactive television is targeted. Only the wide application of an interoperable MHP standard does fulfil the economic and political objectives of THE MHP KNOWLEDGE PROJECT.

Consequently a wide range of dissemination paths and addressees has been covered consisting of both "push" and "pull" components.

On the "push" side, seminars, guidelines and demos have been given in order to provide direct contact to other market partners interested in the MHP technology.

As complementary "pull" component, the MHP knowledge data base has been made available via Internet for intended and continued use by all companies interested in the MHP market. Thus a high and detailed level of MHP knowledge can be shared by this mixed approach.

## The Project Deliverables

The following table contains a list of all Deliverables created by the MHP-KDB project. It is indicated, if they are publicly available via the MHP-KDB website. For those public Deliverables the relevant link for direct access is given behind the title.

No.	Title of Deliverable	Nature	Public
D1	<a href="#">Analysis of the current MHP situation</a>	Report	•
D2	<a href="#">Requirements for WP3, WP4, WP5</a>	Report	•
D3	<a href="#">Portal and access protocol</a>	Report	•
D4	<a href="#">Seminars for broadcasters and EC</a>	Seminar, Report	•
D5	<a href="#">Definition of the overall architecture</a>	Report	•
D6	<a href="#">KDB definition and Implementation</a>	Prototype, Report	•
D7	<a href="#">IBC Presentations 2004</a>	Demo, Report	•
D8	Definition of the overall KDB scope	Report	
D9	<a href="#">Assessment of actions and recommendation to focus areas</a>	Report	•
D10	<a href="#">Validation Tools – Suite of tools for validating the architecture, usability and conformance of MHP-based applications and components of the value-chain</a>	Prototype, Report	•
D11	<a href="#">Proposal for EU action plan</a>	Report	•
D12	<a href="#">Code fragments and benchmark applications</a>	Prototype, Report	•
D13	Test procedures, signals and facilities	Prototype, Report	
D14	<a href="#">Analysis of the E-2-E value chain architecture</a>	Report	•
D15	<a href="#">IBC Presentations 2005</a>	Demo, Report	•
D16	<a href="#">The MHP Guide</a>	Electronic book	•
D17	Final Plan for using and disseminating knowledge	Report	
D18	<a href="#">Guidelines on Migration</a>	Report	•
D19	Benefits and exploitation opportunities	Report	
D20	<a href="#">Final Activity Report</a>	Report	•

**Publishable results of the *Final plan for using and disseminating the knowledge***

The MHP-KDB project has made useful information available on all components within the entire MHP value chain. It has collected know-how and best practice solutions and provided them to all companies and organisations active in this field. The kind of knowledge generated in the project, which includes application code and proven best-practice recommendations, ensures that MHP-KDB can provide sustainable solutions vital to the growth and competitiveness of the European media industry in the market of interactive digital TV.

In detail, the project has achieved:

- An open knowledge database on all relevant MHP issues.
- A comprehensive "MHP Guide" as an e-book downloadable for free.
- Web-accessible virtual test centres.
- Freely available reference application modules in form of MHP source code.
- Public guidelines and recommendations on the usage of MHP.

All these resources can be found at [www.mhpkdb.org](http://www.mhpkdb.org)

The project endeavoured to ensure that the whole spectrum of potential MHP "issues" as determined during the analysis phase of the project is actually covered by "solutions" which can be found in written guidelines or be accessed via database queries.

Furthermore, answers to questions which were raised by third parties have been included to the extent possible. The open database structure allows not only for questions from external parties but also for externally proposed solutions.

By the communication of the results and a broad sharing of guidelines and reusable software modules, the basic goal of working as a "catalyst" for the whole market of interactive digital television was pursued. All pieces of MHP software code are available via the LGPL open source license.