

AXMEDIS Annual Report

(October 2007, V1.3)



www.axmedis.org

***Automating Production of Cross Media
Content for Multi-channel Distribution***

AXMEDIS aims to meet the challenges of the market demand by: (i) reducing costs for content production and management, for content composition, formatting, adaptation, processing, protection and workflow; (ii) reducing costs of distribution with P2P at B2B and consumers levels, and by integrating content management systems and workflows; (iii) providing new methods and tools for innovative and interoperable Digital Rights Management (DRM), including the exploitation of MPEG-21, OMA and overcoming limitations supporting different business and transactions models and multichannel distribution. The AXMEDIS consortium consists of leading European digital content producers, integrators, aggregators, distributors, information technology companies and research groups. The AXMEDIS framework solves the above issues, and realises a set of demonstrators for content production, protection and sharing, and content distribution to end-users via different channels, including interactive TV (i-TV), personal computer (PC), STB/PVR, kiosk, mobile phones, PDAs, etc. By the end of the third project year AXMEDIS has produced a set of demonstrators, tools for cross media content production protection and distribution, P2P tools, and the AXMEDIS Framework and related documentation, which are accessible on the AXMEDIS portal. Demonstrations and tutorials are provided at AXMEDIS conferences, and a large set of demonstrators and training material can be accessed at the portal.

Objectives

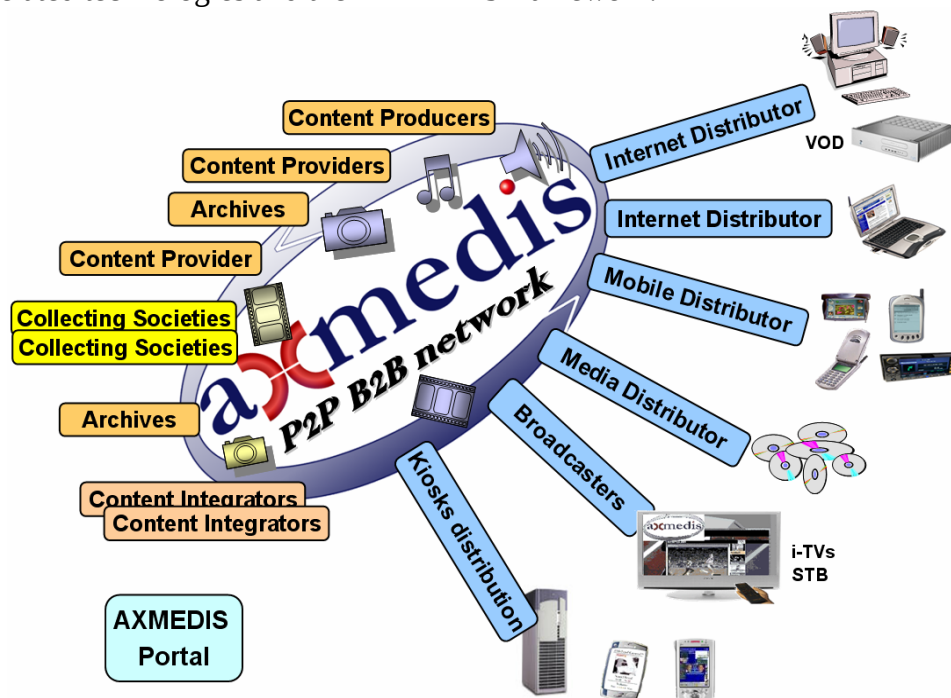
The main AXMEDIS objectives are:

- Automating cross-media production and distribution by supporting interoperability of content protection, DRM and distribution, etc. and deployment of solutions for content production on demand;
- Creation of a common model for interchanging: content, cross media content and components among content providers and distributors, supporting copyright law, interoperability for content formats and DRM models. Safeguarding owners' rights during content production process considering the whole value chain;
- Establishing modalities and tools for managing, distributing and sharing cross media content and components among producers, publishers, distributors to reach final users via a multi-channel architecture (including but not limited to i-TV, PC, PDA, mobile phones, Kiosk, STB/PVR, etc.);
- Creation of the AXMEDIS framework to enable e-commerce of cross media digital content overcoming the state of the art limitations in content model and DRM. Offering the framework to all; and providing access to the framework to affiliated

- partners and subprojects;
- Deployment of a set of demonstrators with and without DRM and the automated tools for content production and distribution: (i) integration of Content Management Systems with AXMEDIS solutions including P2P framework, (ii) accelerating content production, composition / formatting, and P2P sharing at B2B level, (iii) content production and distribution on-demand for i-TV-PC, (iv) content production and distribution for PC, (v) content production and distribution on-demand for mobile phones, (vi) content production and distribution to kiosks and local PDAs, (vii) content production and distribution via IP for STB and/or PC, Video on Demand, (viii) automated content management and protection with MPEG-21 and OMA, related distribution toward mobiles and PC, (ix) automated content production on the final user site recording free on air channel and compounding it with additional contributions (extra content, cover, information, etc.) coming from IP (server or from P2P), (x) managing DRM domains for home content distribution and management;
 - Validation of the AXMEDIS framework with a set of demonstrators spread in Europe for purposes from back office content production and processing to content distribution to final users.

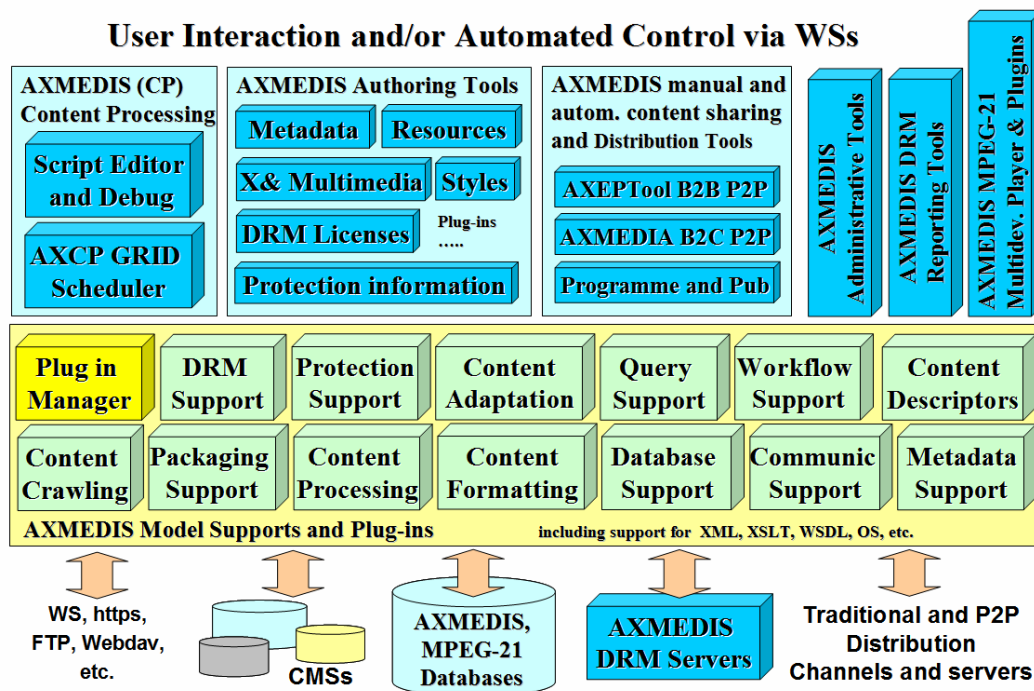
Summary of Activities

The AXMEDIS consortium has created the AXMEDIS framework to provide innovative methods and tools to speed up and optimise content production and distribution, up to the *production-on-demand* capability, for leisure, entertainment and digital content valorisation and exploitation in general. AXMEDIS format may include any other digital formats and it can exploit and expand: SMIL, HTML, PDF, PS, FLASH, DOC, images, video, MPEG-4, MPEG-7, MPEG-21, as well as many *de facto* standards. Every year AXMEDIS organizes a conference, including demonstrations, workshops and tutorials about related technologies and the AXMEDIS framework.



AXMEDIS has deployed a set of tools in the AXMEDIS framework and is now using them for a set of demonstrators operating as real components in activities such as production, protection and distribution organized by the leading distributor partners. This is to achieve and realize a real-life distribution chain validated by the activities of end-users. The demonstrators focus on tools for: (i) content production, protection and

B2B/C2C distribution / sharing; (ii) content production and distribution to end-users via different channels including interactive TV (i-TV), personal computer (PC), kiosk, mobile, PDA, STB/PVR, and others, (iii) digital rights management (MPEG-21 and OMA) and control of all the activities regarding the production and the accounting for the DRM.



AXMEDIS realises the AXMEDIS Framework (see the above figure) for all, and especially for small and large industries sharing a common interest in the exploitation of new technologies and solutions. The AXMEDIS Framework can be used to setup and built a set of complete applications and services in the area of content production, protection and distribution. Applications and processes according can be customized with the flexibility of AXMEDIS dynamic Plug-In technology..

AXMEDIS is offering assistance and technical support to companies interested in using the developed platform and adopting AXMEDIS solutions, accessing to the so-called AXMEDIS Framework. Presently the AXMEDIS affiliated partners are: SIAE (I), FOCUSEEK (I), GESFOR (Spain), PENTEX (I), FIA Albeniz Foundation (Spain), HEXAGLOBE (Fr), RIGEL (I), MAAT-G (Spain), etc. To these companies and institutions, AXMEDIS has provided training and demonstration and support maintaining and improving the framework. Affiliated partners also had the opportunity to meet each other and AXMEDIS partners at AXMEDIS conferences and workshops.

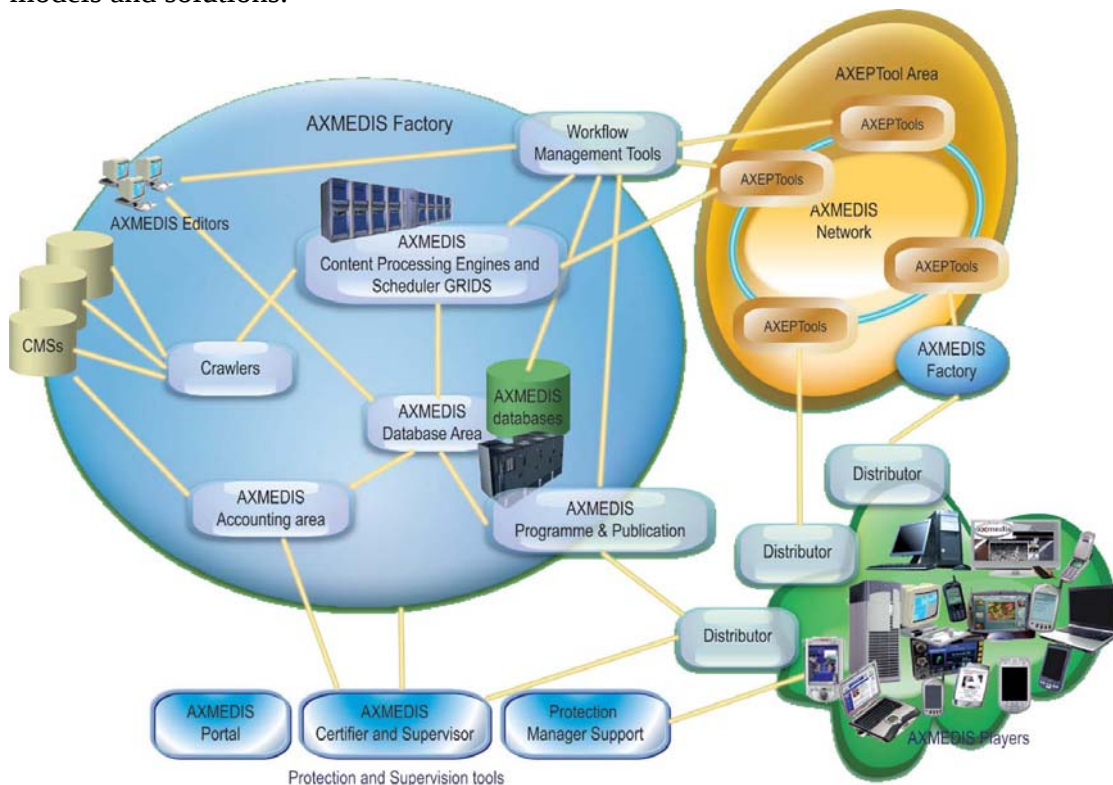
A precise description of AXMEDIS Framework can be obtained from the AXMEDIS portal. Demonstrations of AXMEDIS tools and of the whole AXMEDIS Framework are provided at AXMEDIS conferences and workshops, and in other occasions listed on AXMEDIS Portal. The AXMEDIS Framework can be accessed by following the Affiliation programme.

AXMEDIS Content Model

The AXMEDIS content model supports all types of cross-media content; from simple multimedia files to software components such as games, for all kinds of applications, from personal to global scale usages including leisure, education, entertainment,

infotainment as well as the management of protected content for government, healthcare, business, etc.

AXMEDIS is an open format which is capable of integrating any kind of cross-media format (e.g. video, images, animations, games, learning objects, multimedia, audiovisual, document, audio, etc.) in digital format with any kind of metadata including identification, classification, categorisation, indexing, descriptors, annotations, relationships and play activities, and protection aspects. The AXMEDIS format permits the combination of content components and their secure distribution in respect of their intellectual property rights, supporting a large variety of DRM rules and models according to concepts of interoperability among DRM models (mainly, but not only, based on MPEG-21, with both binary and XML formats). AXMEDIS is open to all DRM models and solutions.

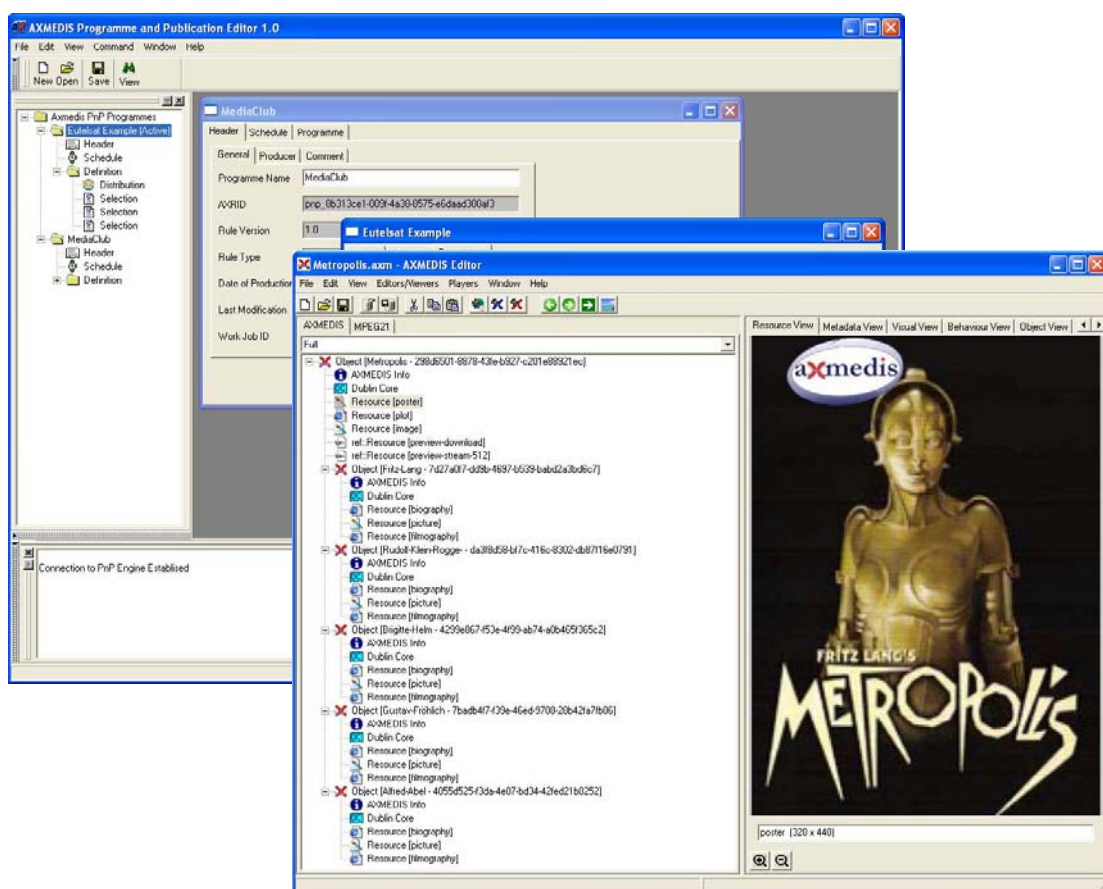


Key AXMEDIS areas and major tools

Most of the following tools are available for download from the AXMEDIS portal:

- **AXMEDIS Factory:** for automatically collecting content from legacy CMSs, producing the content, programming and scheduling the production process, processing metadata, composing and formatting content, collecting content information from content usage, producing licenses to harmonise the production with workflow applications in the factory and among geographically distributed factories, etc. The AXMEDIS Factory is scalable in the sense that it can satisfy the needs of small and large content producers, integrators, and distributors. The factory is supported by tools for automating the production process and to perform manual editing;
- **AXMEDIS Editor** is the authoring tool for manually producing AXMEDIS objects when needed and for supporting the designer to create rules that can be considered macros of the AXMEDIS Editor. It is based on the AXMEDIS Object Model, AXOM, and based on MPEG-21, and all the modules and tools to manipulate and create AXMEDIS objects and related information and digital resources such as:
 - resource hierarchy viewer and editor;

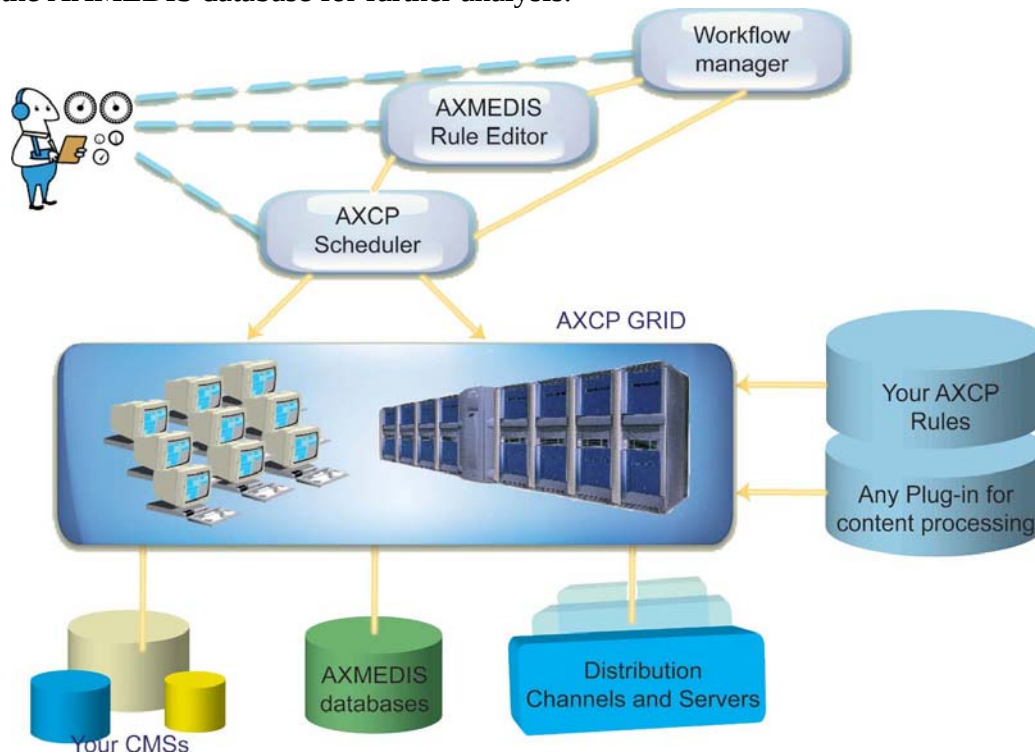
- visual viewer and editor to show/manipulate visual and temporal aspects of related digital resources according to SMIL;
- behavioural editor and engine to define object intelligence and semantics, while the related engine may execute these scripts on the final players;
- metadata editor and viewer, to manipulate and view general XML metadata and specific AXInfo metadata;
- DRM viewer and editor to create and verify the licenses;
- Protection Information viewer and editor to specify, apply and browse protection aspects on the basis of the MPEG-21 IPMP format with extension of AXMEDIS;
- set of plug-ins to use algorithms for content processing;
- workflow interface (OpenFlow and BizTalk);
- set of internal viewers and players for digital resources such as document, images, video, MPEG-4, HTML, SMIL, and audio resources, etc., for more than 250 different file formats.



- **AXMEDIS Protection and Supervising tools:** for registering users, certification of tools, authenticating devices and tools, monitoring all the activities performed on the AXMEDIS content on AXMEDIS players and tools, processing licenses, managing black lists, and collecting and reporting the information about content usage and rights exploitation, etc.
- **AXMEDIS Players:** for content playback and execution on several different platforms (PC, PDA, mobiles, AXMEDIS Mozilla Plug in, AXMEDIS Active X), to build specific and customised content players, for distributing and sharing content among final users by means of secure P2P tools such as AXMEDIA P2P tool;
- **AXMEDIS Distribution tools:** for automating the content publication and acquisition in the business area allowing the interconnection of AXMEDIS Factories by means of AXEPTool, a secure and legal P2P tool. It is also possible to make

distributed queries among connected AXMEDIS Factories to search for content and to automatically publish and acquire/update content from/to the business partners, etc. The tools in this area also allow scheduling of content distribution and publication towards external web services for example those of front end distribution servers;

- **Workflow Management tools** include a set of micro tools and interfaces which are pervasively connected to all the AXMEDIS tools and plug-ins to allow interfacing the whole content factory to Workflow tools such as Open Flow and BizTalk. The control is performed to define AXMEDIS factory workflow policies and to manage inter-factory workflows policies.
- **Accounting Area** includes a set of tools which allow content producers, distributors or collecting societies to collect administrative information and reports about their content to extract the list of rights that have been exploited on their AXMEDIS objects by the final users and by the business users. This information is collected in the AXMEDIS database for further analysis.



Automated AXMEDIS Content Processing

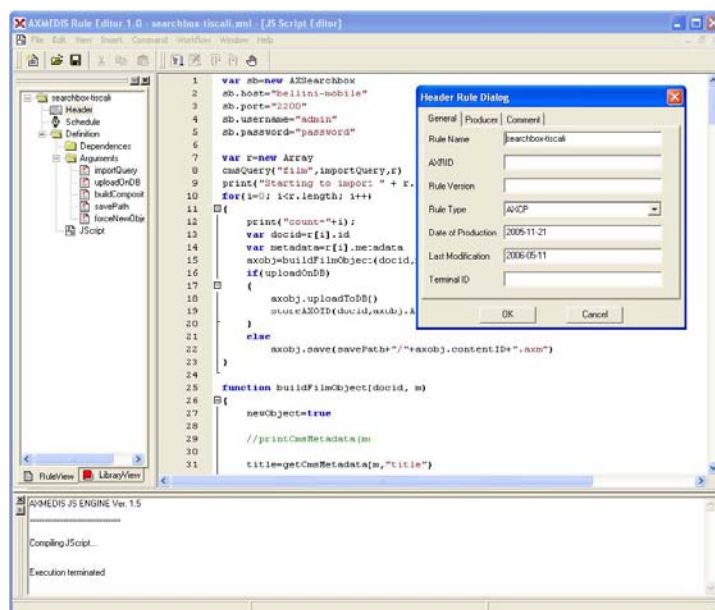
The AXMEDIS framework and AXMEDIS Content Processing (AXCP) based on GRID technology offers automated features and functionalities.

AXCP is a reliable and scalable GRID solution. AXCP nodes can run multiple copies of the same rules on the same content, making possible the set up of fault tolerant solutions and recovery in case of server or disk failure. The AXCP solution is scalable in terms of a number of AXCP Nodes and Schedulers. It may work on a single computer with all inside as well as on hundreds/thousands of industrial or desktop computers (putting at disposal a part of their CPU power and file systems). Each node may share file systems and access independently on the network and thus on databases.

AXMEDIS allows you to reduce costs and increase efficiency of your content management. AXMEDIS supports the whole value chain and makes real and simple the convergence of media, the media transcoding, and the interoperability of content enabling multi-channel distribution (e.g., mobile, satellite, kiosk, iTV, web, P2P, interactivity, etc), and provides a flexible and interoperable DRM, for both B2B and B2C across traditional and P2P distribution platforms.

AXCP tools can be integrated and controlled by your applications and/or workflow management systems. AXCP tools include an integrated development environment (with testing and debug capabilities) for the production and validation of jobs to be allocated on the GRID. The AXCP GRID solution allows automated:

- Content and metadata access, ingestion and gathering
- Content and metadata management and retrieval
- Content processing, adaptation, transcoding and fingerprinting for audio videos, document, images, and any files
- Digital File Fingerprint and recognition
- Content composition Presentation and Interactive models
- Multimedia and cross media adaptation/processing
- General Information Processing
- Distribution and control of P2P network
- Communication Capabilities
- Workflow management Production Process
- Content Packages, Media Containers and DRM
- Content Formatting and Adaptation Process
- Profiling and their management
- Content Adaptation Process
- Content Protection, Licensing and DRM
- Content Publication and Distribution



AXMEDIS P2P Content sharing

The AXMEDIS P2P is an open and scalable solution for setting up P2P networks for content distribution and sharing which can be used among business actors or consumers, or for creating thematic or mixed P2P networks for B2C content distribution and sharing. Content can be any kind, from video to audio, games, documents, etc.

The AXMEDIS P2P solution allows content owners and distributors to exploit the capabilities of P2P protocols to create efficient, controllable, legal and secure P2P networks for content distribution and sharing. By using the AXMEDIS P2P solution a distributor may publish content in the P2P network; and the content may freely navigate among peers with the supervision and control of the AXMEDIS protection and monitoring tools. Content distributors may use the AXMEDIS P2P solution to set up legal P2P services for content distribution towards and among their customers, thus reducing their direct costs for distribution and infrastructure. Final users can be profiled and may be stimulated by advertising, and/or promoting content to acquire licenses to play the content (e.g., pay per play). Other business models such as the monthly rate or the renting for a period are also possible. The AXMEDIS P2P solution allows to:

- share any kind of content (digital files)

- publish/distribute content with DRM or not
- create a community among different actors to publish, download and share content and tools
- monitor the activity of the P2P network including via the AXCP
- filter content that is not authorized or conformant to some standard or format via the AXCP
- control the activity of the P2P network via the AXCP
- easily and immediately integrate with any WEB portal and/or services for content distribution and sale.

AXMEDIS P2P is based on the BitTorrent technology for P2P distribution and sharing. The AXMEDIS P2P technology enhances the classical BitTorrent solution with several innovations to realize the possibilities of: monitoring and controlling the network, managing DRM content, making queries, deriving statistics, managing protected and non protected content, distributing MPEG-21 objects, automating publication and download, creating P2P networks for e-commerce at business and consumer levels, accelerating the publication up the immediate distributed seeding of content in the network, filtering content on the P2P network, and more.

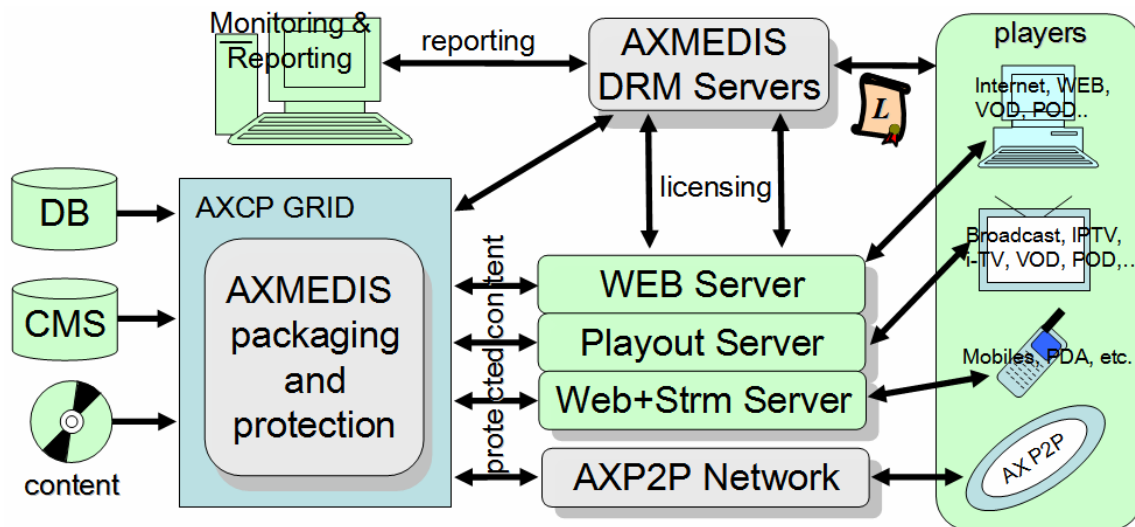
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7	FC-4386 DVD.iso	33.84 KB/s [3]	0 bytes/s [0]	2.83 Mb	3.28 Gb	0.88 %	1 d 4 h 13 m 4...	6 m 42 s	Tue Apr 10 12:...		unaxmedis00...	Downloading
22	batman-ras.asm	3.06 KB/s [1]	0 bytes/s [0]	70.81 kb	338.02 kb	21.30 %	1 m 24 s	38 s	Tue Apr 10 12:...		unaxmedis00...	Downloading
13	little vampire trailer.mpeg4.asm	25.33 KB/s [2]	0 bytes/s [0]	893.55 kb	7.10 Mb	12.14 %	4 m 15 s	5 m 23 s	Tue Apr 10 12:...		unaxmedis00...	Downloading
4	axmedis-2006 general tutorial part1.mpg	243.50 KB/s [3]	0 bytes/s [0]	159.58 Mb	454.09 Mb	35.14 %	20 m 38 s	8 m 2 s	Tue Apr 10 12:...		unaxmedis00...	Downloading
10	whatwonderwant-trailer-mpeg4.asm	23.29 KB/s [2]	0 bytes/s [0]	1.28 Mb	7.22 Mb	17.71 %	4 m 21 s	6 m 2 s	Tue Apr 10 12:...		unaxmedis00...	Downloading
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9	xlm.ansc.html flash example.html files.v2.asm	12.73 KB/s [1]	0 bytes/s [0]	575.95 kb	13.04 Mb	4.30 %	16 m 43 s	6 m 2 s	Tue Apr 10 12:...		unaxmedis00...	Downloading
18	Flash-example-2-AXMEDIS-WEDL.asm	12.66 KB/s [1]	0 bytes/s [0]	574.52 kb	1.87 Mb	29.80 %	1 m 46 s	4 m 39 s	Tue Apr 10 12:...		unaxmedis00...	Downloading
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15	earth photo req.asm	0 bytes/s [0]	0 bytes/s [0]	0 bytes	161.16 kb	0.00 %		5 m 23 s	Tue Apr 10 12:...		unaxmedis00...	Downloading

AXMEDIS DRM

AXMEDIS supports the whole value chain and makes real and simple the convergence of media, the media transcoding, and the interoperability of content enabling multi-channel distribution and provides a flexible and interoperable DRM, for both B2B and B2C across traditional and P2P distribution platforms. AXMEDIS Multichannel DRM is an open interoperable solution for protecting and managing rights of a large range of content from single files to complex cross media and multimedia distributed on different channels towards different type of players and devices. AXMEDIS can be used to setup and manage DRM solutions for:

- o Internet, client server and P2P distribution;
- o broadcasting, satellite and terrestrial distribution;
- o production and video on demand distribution;
- o mobile and PDA distribution;
- o interactive TV and educational content distribution;
- o PC, STB/PVR, HDR, PDA, Mobiles, etc.;
- o physical supports: CD, DVD, USB, etc.;
- o business to business distribution with chains of licenses;

- o integrated business to business to consumers distribution models.



AXMEDIS DRM exploits and extends the MPEG-21 standard allowing to:

- o protect many different content formats and types:
 - o video, audio, images, documents, games, etc.;
 - o cross media and multimedia content: HTML, SMIL, MPEG-4, etc.;
 - o collections and combinations of the above mentioned content formats;
- o control the exploitation of rights of the above content formats:
 - o formalization of rights and conditions with formal licenses. The license for a content is a digital version of the contract that contains the list of rights (with related conditions) that can be exploited for that content by a given user. In AXMEDIS, licenses are formalized in MPEG-21 REL Standard;
- o collect and report detailed information about the consumption of rights for accounting, billing and/or statistical analysis;

Access to the AXMEDIS Framework

AXMEDIS has been adopted and is under trial by many industrial partners, who have expressed their appreciations (see <http://www.axmedis.org/ibc2007/>). AXMEDIS is open and allows you to access source code, reports, technical support, training days, etc., by means of the affiliation program. The AXMEDIS Framework is accessible to all who share the interest to exploit new technologies and solutions for automated content production and multi-channel distribution. The AXMEDIS Framework can be used to setup and build a set of complete applications and services in the area of content production, protection and distribution.

AXMEDIS Framework is Open:

- AXMEDIS focuses on interoperability and openness of content model and interoperability of DRM models, including multi-channel distribution;
- AXMEDIS specification is public. Its specific use is royalty free;
- source code of the AXMEDIS Framework is accessible by the AXMEDIS Affiliation programme. The affiliation fee is affordable for all. Alternatively affiliation can also be offered in return for contributions to improve and/or extend the AXMEDIS Framework;
- AXMEDIS plug-in technology is public. The source code for creating a new plug-in is public without the need to be affiliated. Any tool can be integrated into the AXMEDIS Content Processing GRID with this technology.

AXMEDIS Affiliation

Apply for the AXMEDIS Affiliation to take advantage of the AXMEDIS framework and technologies. With the AXMEDIS Affiliation, industrial participants can:

- access the AXMEDIS Framework which can be used to set up and enhance production, protection and distribution facilities/platforms in a simple and cheap manner;
- adopt standard models (e.g. MPEG-21) for content and licenses modelling and hence adding DRM in your content business;
- establish contacts with other business partners interested in exploiting similar technology;
- obtain greater control on the content usage;
- create customised AXMEDIS players for PC, PDA, etc.;
- exploit and trial innovative business models that can be enforced on a distribution channel with management of rights and obtain reports on exploited rights of the multimedia content distributed.

Research institutions and AXMEDIS Affiliation:

- access the AXMEDIS Framework to build different solutions and applications to cover the needs of the value chain actors and tested with low effort;
- improve visibility, promote and produce algorithms and tools that can be used for content processing and modelling, and can be integrated into the framework;
- add new content models and new DRM models, make them interoperable with MPEG-21 and others already in place on the AXMEDIS Framework;
- test algorithms and tools with respect to the state of the art solutions, with ease;
- collaborate with other relevant research institutions and companies within the sector.

For additional information on AXMEDIS Affiliation please see:

- <http://www.axmedis.org/affiliation.php>
- Affiliation document:
http://www.axmedis.org/documenti/view_documenti.php?doc_id=1751

AXMEDIS technology is going to be exploited in VARIAZIONI e-contentplus project.

User Involvement, Promotion and Awareness

Final users are involved in AXMEDIS in different ways.

- AXMEDIS has created a User Group to (i) provide expert consultation, information and verification, (ii) maintain continuous update and monitoring on the pathway of the project development and progress, (iii) promote the activities to decision makers and managers of small and large companies that have potential interests to become AXMEDIS compliant and to join AXMEDIS in the future;
- Users are invited to join the AXMEDIS P2P network by simply installing AXMEDIS P2P client: http://www.axmedis.org/documenti/view_documenti.php?doc_id=3611
- Any user may install AXMEDIS tools and test them:
http://www.axmedis.org/documenti/view_documenti.php?doc_id=3269
- Users may test the tools at the demonstration distribution portal:
http://www.axmedis.org/tiki/index.php?page_ref_id=351
- Users have access to the AXMEDIS specification and documentation including tools, demos, video, training material, tutorials, etc.;
- Users are invited to leave their comments on the AXMEDIS BLOG;
- Users may register on the AXMEDIS newsletter;

- Users may attend training and tutorial days at AXMEDIS conferences and workshops, etc.

Other tools for promotion to increase awareness of the project include the dissemination and demonstration activities such as participation at conferences, workshop and fairs; organisation of conference, training and tutorial courses; publication of relevant materials, dissemination of materials, advertising and promotion of WWW pages, etc.

The user group and the activities planned for dissemination will cover all aspects addressed by AXMEDIS in terms of value chain and content models and types.

The project provides a portal for all (public access) to register their interests via the project website. This allows anyone who is interested in AXMEDIS to receive a newsletter with all the latest news and information about the project.

Presently AXMEDIS is the only value chain comprehensive activity on the MPEG-21, also including interoperability for content models and DRM. The AXMEDIS consortium is going to enlarge with the insertion of a set of new partners involved in the development of a set of demonstrator.

The AXMEDIS portal counted more than 4,7 million hits (total number of "clicks") to the public part of the web site. Interested users downloaded 704164 (documents, training video, slides, etc.) from the public part of the AXMEDIS portal. Most of them have been downloaded in this third AXMEDIS project year. The P2P network has now close to 3000 objects and 705254 hits from its start in April 2007.

The next AXMEDIS conference will take place in Barcelona, Spain in November 2007: <http://www.axmedis.org/axmedis2007/>

Future Work

The results of the research activities have been capitalised into the AXMEDIS framework to develop demonstrators and to make them available to SMEs and institutions that intend to become AXMEDIS compliant. AXMEDIS has the intention to become a reference infrastructure and technology for content production, integration and distribution in Europe.

The future work for AXMEDIS is to complete the development and set up of demonstrators on the basis of the AXMEDIS Framework. Then, the demonstrators will be accessible for the validation and demonstration:

- Content Distribution via Internet toward PC
 - [Distribution on Internet the TISCALI demonstrator](#)
- Content Distribution toward PDAs and mobiles
 - [Distribution on PDAs and mobiles the ILABS demonstrator](#)
- Content Distribution via satellite data broadcast (DVB-S) toward PC and STB
 - [Distribution via Satellite data broadcast the EUTELSAT Demonstrator](#)
 - http://www.axmedis.org/tiki/tiki-index.php?page_ref_id=422
- Content sharing with P2P AXEPTool already active:
 - http://www.axmedis.org/documenti/view_documenti.php?doc_id=3611
- Content distribution to licensing domains via DVB-T and P2P integration of metadata and additional information
 - [Content distribution for TV recording, the BBC case:](#)
- Content Distribution toward mobiles based on OMA
 - [Content distribution with OMA, AXMEDIS back office, the Telecom Italia case](#)
- Video on Demand, VOD, distribution to STB

- o [Content distribution for Video on STB, the TEO \(Telecom Lithuania\)](#)
- Video on Demand, VOD, distribution to PC
 - o [Content distribution for Video on demand, the ELION \(Telecom Estonia\)](#)
- Multichannel and multi/interoperable DRM distribution
 - o [AXMEDIS Multichannel Support and DRM interoperability](#)

Acknowledgments

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Further Information

- **AXMEDIS General overview and Tools**
 - o Flyer on: [General Overview](#)
 - o Slides: [100 and more reasons to adopt AXMEDIS](#)
 - o Video: [Flash executable, 100 and more reasons to adopt AXMEDIS](#)
 - o Report: [AXMEDIS Framework for all, an overview of AXMEDIS](#)
 - o Slides on: [AXMEDIS overview at the last USER GROUP meeting, July 2007](#)
 - o Slides on: [AXMEDIS INTEGRATED DEMOS shown at the last USER GROUP meeting, July 2007](#)
 - o Video of: [TEO VOD distribution on Kreatel STB with AXMEDIS MPEG-21](#)
 - o Video of: [BBC trial of AXMEDIS, content recording and production](#)
 - o Video of: [AXMEDIS MPEG-21 STB/PVR of MBI, July 2007](#)
 - o DVD ISO: [AXMEDIS DVD ISO format with: GRID tools, documents, cross media content, examples, tutorials, videos, authoring tool, players, etc., IBC 2007 distribution, July 2007](#)
- **AXMEDIS Content Processing Tools**
 - o Technical Notes on: [AXMEDIS Content Processing GRID all features listed](#)
 - o Flyer on: [AXMEDIS Content Processing GRID](#)
 - o Examples: [A collection of AXMEDIS content processing scripts for the automated content production and backoffice management](#)
 - o Manual: [AXMEDIS Content Processing GRID Script language user manual](#)
 - o Development Tool Kit: [AXMEDIS Plug in Development tool Kit with examples \(for creating your content processing and protection tools\)](#)
 - o Tutorial on: [Content Processing, HOW TO Automatically produce AXMEDIS objects](#)
- **AXMEDIS P2P Network Tools**
 - o Technical Notes on: [AXMEDIS P2P Controlled network all features listed with cases](#)
 - o Flyer on: [AXMEDIS P2P Controlled Network](#)
 - o Manual: [AXMEDIS P2P tools user manual](#)
 - o P2P Tool: [AXEPTool a P2P B2B tool for B2B, install and join the P2P network of AXMEDIS to get cross media content and TOOLS, tutorials, slides, etc. you can start downloading a file from the P2P with simple click on AXMEDIS portal web pages, look for bittorrent supported files](#)
 - o P2P Tool: [AXMEDIA a P2P tool for Consumers, install and join the P2P network of AXMEDIS to get cross media content and TOOLS, tutorials,](#)

[slides, etc. you can start downloading a file from the P2P with simple click on AXMEDIS portal web pages, look for bittorrent supported files, if you like to see the short manual:](#)

- **AXMEDIS MPEG-21 Tools for cross media content and DRM**
 - o Technical Notes on: [AXMEDIS DRM, MPEG-21 DRM](#)
 - o Flyer on: [MPEG-21 Editor, MPEG-21 Authoring, MPGE-21 players \(PC, PDA, STB, Mobile, etc.\) and model](#)
 - o Flyer on: [AXMEDIS MPEG-21 DRM](#)
 - o Tools and demos: [AXMEDIS Major MPEG-21 Tools and manuals \(authoring tools, players, GRID tools, processing tools, \):](#)
 - o Report: [An overview of AXMEDIS MPEG-21 TOOLS](#)
 - o Examples: [A collection of AXMEDIS MPEG-21 OBJECTS that can be authored and played by AXMEDIS tools](#)
 - o Video and demos: [Major AXMEDIS tools at work](#)
 - o Report: [AXMEDIS Major Tools User Manuals](#)
 - o Tutorial on: [Content Production Tutorial, HOW TO produce AXMEDIS objects](#)
- **PDA Tools:** [AXMEDIS PDA player for AXMEDIS MPEG-21 content please unzip, copy the CAB in your PDA and click to install, the other zip into the zip contains a lot of AXMEDIS objects adapted for PDA including resources with presentations layer based on MPEG-4, HTML and SMIL](#)
 - o [Additional AXMEDIS MPEG-21 objects for PDA: HTML, SMIL and MPEG-4](#)
- **General Tutorial, video and slides**
 - o [SLIDES of the General Tutorial to understand and start with AXMEDIS:](#)
 - o [Part 1 Video General Tutorial](#)
 - o [Part 2 Video General Tutorial](#)
 - o [Part 3 Video General Tutorial](#)
 - o [Part 4 Video General Tutorial](#)
 - o [Part 5 Video General Tutorial](#)
 - o [Part 6 Video General Tutorial](#)
- **Other Tutorials**
 - o [Content Distribution Tutorial, multichannel distribution](#)
 - o [Workflow Tutorial, factory management with workflow](#)
- **General Documents**
 - o [User Requirements, Updated version of the DE2.1.1a, first part](#)
 - o [Use Cases and Scenarios, Updated version of the DE2.1.1a, second part](#)
 - o [Test cases and content description, Updated version](#)

Events:

- AXMEDIS 2005 Conference: <http://www.axmedis.org/axmedis2005/>
 - o AXMEDIS 2005 Conference Final Programme, version 1.0: http://www.axmedis.org/documenti/view_documenti.php?doc_id=1356
- AXMEDIS 2006 Conference: <http://www.axmedis.org/axmedis2006/>
 - o AXMEDIS 2006 Conference programme (provisional): <http://www.axmedis.org/axmedis2006/program.html>
- AXMEDIS Cross Media Content production and sharing workshop: <http://www.axmedis.org/cmcp2007/>
- AXMEDIS at IBC 2007: <http://www.axmedis.org/ibc2007/>
- AXMEDIS 2007 Conference: <http://www.AXMEDIS.org/AXMEDIS2007/>
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General Information

- AXMEDIS Framework Wiki: <http://www.axmedis.org/tiki/index.php>
- AXMEDIS Affiliation: <http://www.axmedis.org/affiliation.php>
 - Affiliation document: http://www.axmedis.org/documenti/view_documenti.php?doc_id=1751
- AXMEDIS Demonstrations and videos can be taken and downloaded from the following AXMEDIS Wiki page: <http://www.axmedis.org/tiki/tiki-index.php?page=Early+Demonstrations+and+Videos>
- AXMEDIS Framework documents: specification, use cases, requirements, etc,
 - http://www.axmedis.org/area_4/doc.php
- AXMEDIS Selection of press cuttings: http://www.axmedis.org/documenti/view_documenti.php?doc_id=259
- A short multilingual overview of the AXMEDIS project, extracted from the home page of the project website: www.axmedis.org
- AXMEDIS WEB statistics: <http://www.axmedis.org/statistics.php>

Further information can be obtained directly from the WWW site of the project, or by contacting the coordinator.

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