

AXMEDIS: Automating Production of Cross Media Content for Multi-channel Distribution



<http://www.axmedis.org/>

The AXMEDIS project aims to meet the challenges of the market demand by: (i) reducing costs for content production and management for content composition, representation (format), protection and workflow; (ii) reducing distribution and aggregation costs in order to increase accessibility with a P2P at B2B level, which can integrate content management systems and workflows; (iii) providing new methods and tools for innovative and flexible Digital Rights Management (DRM), including the exploitation of MPEG-21 and overcoming its limitations, and supporting different business and transactions models and multi-channel distribution.

Impact

AXMEDIS is employing basic enabling technology research to solve the above mentioned problems and limitations. AXMEDIS framework offers digital content producers, aggregators and distributors access to a wide range of innovative technologies, creating new markets and distribution openings. AXMEDIS technologies allow interoperable multi-channel distribution and protection, reducing the costs of digital content production, distribution and protection.

AXMEDIS's main innovation

The AXMEDIS digital content and content components (in the following, AXMEDIS content in general) have a specific format capable of integration inside any kind of cross-media formats (e.g. video, image, animation, text, audio, etc.), adding metadata, identification, classification, categorisation, indexing, descriptors, annotation, relationships and play activities and protection aspects. The AXMEDIS format permits the combination of content components, their secure distribution and others, in the respect of the copyright laws, 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 low level formats). Within the AXMEDIS content, any type of cross media content can be included; from simple multimedia files to games, software components, for leisure and entertainment, infotainment, and so on.

Highlights of the AXMEDIS general architecture :

- production of AXMEDIS objects and content components with:
 - AXMEDIS authoring tools, license producers, metadata editors and mappers, visual and behaviour definition, protection tools for DRM, etc.;
 - AXMEDIS content processing GRID supporting DRM, for massive and adaptive composition, formatting, protection, processing,

- adaptation, fingerprinting, reduction, transcoding, packaging, metadata processing, license production and processing, etc.
- protection of AXMEDIS objects with:
 - Protection tools for enforcing DRM;
 - Authentication and certification tools;
 - AXMEDIS Certifier and Supervisor to control and track the activities related to rights. That can be connected to the Collection Societies as well as to each Content Providers and Distributors providing reporting and statistics;
- distribution of AXMEDIS objects with:
 - AXMEDIS P2P tool (AXEPTool) for B2B distribution supporting DRM
 - Distributors connected to the AXEPTool may access to a large collection of AXMEDIS objects from content providers, integrators, publishers, etc.;
 - AXMEDIS P2P for C2C;
 - AXMEDIS players and viewers for different platforms.

The distribution channel may present single or multiple distribution paths for each type of content, and often, multiple proprietary systems of representation for the same content. The definition of distribution channel editorial formats would provide one way, unified and robust content format for multipurpose applications. Alternative solutions support the multi-channel distribution by using an XML model of content into the Content Management Systems of the content provider that also include multiple transcoding engines for transforming the XML model of content into the format suitable for the channel.

AXMEDIS's results so far

The project had an effective start in September 2004. After that the consortium has produced and published a set of documents that have been used in many forums:

- Brochures and press cutting http://www.axmedis.org/area_4/doc.php
- Report:
 - http://www.axmedis.org/area_4/doc.php?l_s=struttura&gruppo=8&order_by=data&asc_desc=asc
 - Requirements:
 - Use Cases and Test Cases
- AXMEDIS Framework Specification
 - http://www.axmedis.org/area_4/doc.php?l_s=struttura&gruppo=14&order_by=data&asc_desc=asc
- AXMEDIS reports on basic enabling technologies
 - http://www.axmedis.org/area_4/doc.php?l_s=struttura&gruppo=17&order_by=data&asc_desc=asc
 - Content Model and Managing, MPEG-21, authoring, etc.
 - Content indexing and querying
 - Content processing, Composition and formatting, workflow
 - Content Protection and Supervision
 - Content Sharing and Distribution via P2P
 - Content Distribution via Internet
 - Content Distribution via Mobile
 - Content Distribution via Satellite data broadcast

- Usability issues

AXMEDIS will offer assistance and technical support to companies interested in using the AXMEDIS platform and adopting the AXMEDIS solutions. This support action will be provided through activities such as training, tutorial, consultancy, workshop, meetings, assessment and evaluation, dissemination and demonstration at conferences and fairs. Furthermore, the AXMEDIS consortium will grant the sum of 1 million Euro to companies and research institutions interested in developing real solutions by exploiting AXMEDIS technologies. This is referred to as take up actions.

It is easy and beneficial for all to gain access to the AXMEDIS technologies. Some tutorial/demonstrative events will be organised to provide better understanding of the AXMEDIS technologies with further information on the functionalities and potentialities of AXMEDIS. Business delegates may attend these events, to understand the project and to bring AXMEDIS technologies to their companies. Special training sessions and courses will be held for managers, content managers, content producers and integrators, and digital content distributors. Workshops and courses will be organised in several venues in Europe. See for instance the AXMEDIS Tutorial sessions at the AXMEDIS 2005 conference: <http://www.axmedis.org/axmedis2005>.

AXMEDIS's upcoming work

AXMEDIS is to organise and realise a set of demonstrators to be used as components to set up and renovate processes and factories on content production, protection and distribution organised by the leading distributor partners. This is to create a real-life distribution chain to be validated by the activities of end-users. The demonstrators are to focus on tools for: (i) content production and B2B distribution; (ii) content production and distribution to end-users via different channels including satellite data broadcast, interactive TV (i-TV), personal computer (PC), kiosks, mobile, PDA and others.

Administrative Details

AXMEDIS (IST-2-511299) is an Integrated Project of the European Union's 6th Framework Programme Thematic Priority 2 (Information Society Technologies). It was submitted to the second call of the programme under the strategic objective on "Cross-media Content for Leisure and Entertainment".

AXMEDIS started on 1 September 2004 and finishes on 31 August 2008. The overall funding is 8.4 Million Euro. For an effective total budget of about 14 Million Euro.

20 partners from 7 European countries are involved in the project in different roles.

List of participants

- Dipartimento di Sistemi e Informatica, Università Degli Studi di Firenze, Disit Lab.; DSI; Italy
- Second Major Department: Dipartimento di Italianistica, Università Degli Studi di Firenze; DIPITA; Italy
- Associazione dei Fonografici Italiani; AFI; Italy

- Fondazione Accademia Nazionale di Santa Cecilia; ANSC ; Italy
- Comverse Ltd; COMVERSE; Israel
- Ecole Polytechnique Federale de Lausanne; EPFL; Switzerland
- Eutelsat S.A.; EUTELSAT; France
- Fraunhofer Gesellschaft zur Foerderung der Angewandten Forschung E.V.; FHGIGD; Germany
- Giunti Interactive Labs S.R.L.; ILABS; Italy
- Hewlett Packard Italiana S.R.L.; HP; Italy
- On Demand Distribution Ltd; OD2; Uk
- Tiscali S.P.A.; TISCALI; Italy
- Fundacio Universitat Pompeu Fabra; FUPF; Spain
- xim Ltd; XIM; Uk
- Societa Consortile a Responsabilita Limitata Centro di Ricerca, Sviluppo e Studi Superiori in Sardegna; CRS4; Italy
- ACIT - Advance Concepts for Interactive Technology GmbH; ACIT; Germany
- Sejer Representing Boards and Nathan; SEJER; France
- University of Leeds; UNIVLEEDS; Uk
- The University of Reading; IRC; Uk
- Consorzio Pisa Ricerche; CPR; Italy
- Exitech Srl; EXITECH; Italy

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Events in connection with AXMEDIS

- AXMEDIS conference “1st International Conference on Automated Production of Cross Media Content for Multi-channel Distribution” on 30 November - 2 December 2005 in Florence, Italy, <http://www.axmedis.org/axmedis2005/>
- Conference programme: <http://www.axmedis.org/axmedis2005/detailed-program.html>

Last updated: 14/11/2005