Automating Production of Cross Media Content for Multichannel Distribution
Some Integrated DEMOs

www.AXMEDIS.org at IBC 2007

AXMEDIS Installation at IBC 2007
Manual Content Production and tools

- Content posted on the database with Title containing:
  - IBC
  - IBC_PDA
- The same Content has been posted on the P2P and replicated to the main other P2P nodes so that to provide performances needed
- Protection can be performed by using protection tools according to the help added recently on the computers for the IBC ad posted on the SVN
- Certification has been done for all the computers involved
- Registration has been performed for all the user involved
- .......

IDs: AXDID, ......, ... AXUID

// Id of the Creator/Myself (AXCP/Ivan)
AXCID = "URN:AXMEDIS:00002:BUS:D6D45C52-602E-3AC2-995E-EF9097C784A4";

// Id of the Distributor/Myself (AXCP/Ivan)
AXDID = "URN:AXMEDIS:00002:BUS:D6D45C52-602E-3AC2-995E-EF9097C784A4";

// Id of the Final User/Myself (AXCP/Ivan)
AXUID = "URN:AXMEDIS:00002:BUS:D6D45C52-602E-3AC2-995E-EF9097C784A4";

/other users
users[0] = "URN:AXMEDIS:00002:BUS:D6D45C52-602E-3AC2-995E-EF9097C784A4"; //DSI (Ivan) pc-smr
users[2] = "URN:AXMEDIS:00002:USR:9931CAE2-9EB4-3C77-BF75-E7DDC5FE2305"; //Eutelsat(Campo)

PDA:
**AXMEDIS Editor, authoring tool**

- Manual production of AXMEDIS/MPEG-21 objects
- Editing MPEG-21 objects
  - Object composition and production
  - Hierarchical view of MPEG-21 and/or AXMEDIS
  - Visual and Behavioral Editor for SMIL editing of presentation aspects including time line
  - Metadata Editor
    - General metadata
    - AXInfo metadata
- DRM aspects
  - Registering the objects with a Unique ID
  - Define the PAR: Potentially Available Rights
  - Protection Editor: to protect the objects with Protection Tools plugins
  - Create DRM licenses: mother and client licenses
- **Access to the database:**
  - Store and load
  - Make query into database
- **Processing Content**
  - Activate and test Content Processing Plug Ins, the same accessible from the AXCP GRID tool

**Examples of Protection parameters**

- Protection tools params

  ```javascript
  var toolID = "urn:axmedis:ipmp:tool:id:0003"; // Caeser
  params[0]=20; //shift
  
  var blowfishld ="urn:axmedis:ipmp:tool:id:0004"; // Blowfish
  blowfish[0]="0123456789ABCDEF"; encryption key
  blowfish[1]="01234567"; initialization vector key
  blowfish[2]=16; // length of encryption key
  blowfish[3]=8; // length of initialization vector
  ```
Notes on Licenses

- **License type A:**
  - ♠ play forever, each play is counted in the AXCS
  - ♠ The price per play is not given so that it can be a play forever.

- **License type B1:**
  - ♠ pay per play
  - ♠ each play has a price

- **License type B3:**
  - ♠ pay per play limited in a period of time
  - ♠ not before, not after with a limited numbers of times

**Mother License A**

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
  <grantGroup>
    <grant>
      <keyHolder>
        <info>
        </info>
      </keyHolder>
      <issue />
      <grantGroup>
        <grant>
          <mx:play xmlns:mx="urn:mpeg:mpeg21:2003:01-REL-MX-NS" />
            <identifier>URN:AXMEDIS:00002:OBJ:0D5E5DAA-82C2-3579-A7BF-5C8E064D7A9F</identifier>
          </mx:diReference>
        </grant>
      </grantGroup>
    </grant>
  </grantGroup>
  <issuer>
    <keyHolder>
      <info>
      </info>
    </keyHolder>
    <details>
      <timeOfIssue>2007-08-08T16:44:00</timeOfIssue>
    </details>
  </issuer>
</license>
```
Licence A

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
<r:grantGroup>
<r:grant>
<r:keyHolder>
<r:info>
</r:info>
</r:keyHolder>
<mx:play xmlns:mx="urn:mpeg:mpeg21:2003:01-REL-MX-NS" />
</mx:diReference>
</r:grant>
</r:grantGroup>
<r:issuer>
<r:keyHolder>
<r:info>
</r:info>
</r:keyHolder>
<r:details>
<r:timeOfIssue>2007-08-08T16:44:07</r:timeOfIssue>
</r:details>
</r:issuer>
</r:license>
```

**Automated Content Production**

- **Script 1: ObjectCollection**
  - Create an Collection
- **Script 2: PublishOnP2P**
  - DRM, production, publication on P2P, licensing
- **Script 3: ObjectProductionOnMultichannel**
  - DRM, production on demand, adaptation, licensing
- **Script 4: CreateLicenseOnDemand**
  - DRM, production on demand of LICENSE
- **Script 5: NodeProfile**
  - P2P, monitoring of the single AXEPTool P2P node
- **Script 6: P2PNetwork**
  - P2P, monitoring of the whole AXEPTool P2P Network
- **Script 7: DownloadFromP2P**
  - automated P2P downloading from the P2P Network
- **Script 8: SUTTON da vedere**
  - Crawling, production, adaptation, delivering

Many other Scripts to program your AXCP GRID are accessible from the AXMEDIS portal and WIKI pages.

You can use them as sources of examples and solutions.
Script 1: Create an Collection

Purpose
- Usage of an automated customizable process to create an object from a collection of other content elements, glued with HTML.
  - advantages:
    - Actualisation of queries
    - Fully automation of the content production
    - Fully customization in terms of metadata and composition
    - Make one use MANY MANY times for many many objects
    - Expandable for automatically protecting and distributing the produced objects

What is shown (can be shown)
- AXMEDIS model (MPEG-21)
- Automated Content Production
- Usage of the AXCP Quick Start for GRID simple usage
- Query on database, selection of objects
- AXCP Rule activation
  - Eventual usage of the AXMEDIS Scheduler
  - Eventual usage of the AXMEDIS Rule Editor
- Usage of the AXMEDIS Editor
- Usage of one or more AXMEDIS Players
Script 1: Create an Collection

Steps of Script 1: Create an Collection

- Explain the purpose: to make query to select a set of objects, select them and automatically produce a collection of them with HTML presentation level.

- Usage of the AXCP Quick Start
  - Make a selection, for example “IBC” (not simple “a”), get the result
  - See the list of objects as results
  - Select some of them, ask to the person
  - Activate rule “objectcollection” for the production of composed objects
    - Creation of the objects on the AXCP
  - The object containing the collection is posted into the database and thus a query can get them putting “collection” into the description
    - See the object COMPOSED on the file systems
    - Double click and thus PLAY of the object
    - See the hierarchy of the objects and digital resources inside
Script 2: DRM, production, publication on P2P, licensing

**Purpose**
- Usage of a customizable process to automatically create content objects, protect, DRMed, distribute them via P2P, post on databases, etc., play them.
- Advantages:
  - Fully automation of the content production, protection and publication
  - Fully customization in terms of metadata and composition
  - Make one use MANY MANY times for many many objects

**What is shown**
- AXMEDIS model (MPEG-21)
- Automated Content Production, protection and publication
- Usage of the AXCP Quick Start for GRID simple usage
- Query on database, selection and actualisation
- AXCP Rule activation
  - Eventual usage of the AXMEDIS Scheduler
  - Eventual usage of the AXMEDIS Rule Editor
- Show the AXMEDIS p2p: AXEPTool client tool
- Usage of one or more AXMEDIS Players
- Usage of the DRM
  - Eventual usage of the CAMART for the evidence of the consumption
Script 2: DRM, production, publication on P2P, licensing

- Explain the purpose and show the P2P Client in which the content will be published
- Usage of the AXCP Quick Start
  - Make a query with “IBC”, get the result
  - Select some of them (at least 3 of them), ask to the person
  - Activate rule “PublishOnP2P”. The rule create the objects and the mother licenses for them according to Play Forever (each play is tracked into the AXCP event reporting database)
    - Production of mother licenses and final user licenses for AXUIDs of computer A, B and C ONLY
    - For example: one of our players has not been licensed
    - Script4 can be used to create a license for that user for the produced objects
  - show the progress of the rule if needed
- show the publication of the objects on the P2P Tracker catalogue
- show the list of objects into the local AXEPTool
- Double click and thus PLAY of the object
- Show the object hierarchy with its inside digital resources
SCRIPT 3

ObjectProductionMultichannel

**Purpose**
- Usage of a customizable process to create automatically produce content objects for different terminals/devices (multichannel) (different size for Audio, Video and Images, different format for Text), protect them, DRMize them, distribute them, and usage them.
- Advantages:
  - Fully automation of the content production, protection and publication, for multichannel distribution
  - Fully customization in terms of metadata and composition, production and protection
  - Make one use MANY MANY times for many many objects

**What is shown**
- AXMEDIS model (MPEG-21)
- Automated Content Production, protection and publication
- Usage of the AXCP Quick Start for GRID simple usage
- Query on database, make selection
- AXCP Rule activation
  - Eventual usage of the AXMEDIS Scheduler, AXMEDIS Rule Editor
- Usage of one or more AXMEDIS Players
- Players for different channels
- Usage of the DRM
  - Eventual usage of the CAMART for the evidence of the consumption
Script 3: DRM, production, publication on P2P, licensing

Axmedis project slides
http://www.axmedis.org

Script 3: DRM, production on demand, adaptation, licensing

1. Explain the purpose of the script and show the DIRECTORY (may be empty or with few objects) in which the content will be published and the CONTENT that will be USED

1. Usage of the AXCP Quick Start
1. Select the content to be used for the production, the content is selected from a directory, it could be taken from a CMS, or other channel
1. Activate the RULE for the production of the object(s) in their adapted versions (IMG, VIDEO, AUDIO, TXT)
1. The Rule perform object production and also
   - Production of mother licenses
   - Production of final user licenses for AXIUDs of computer A, B ONLY, for the production of other licenses use SCRIPT 4
1. Show the progress of the rule if needed
1. Show the list of objects created into the Directory
1. Double click and thus PLAY of the object
1. Show the object hierarchy with its inside digital resources
Script 4: DRM, production on demand of LICENSE

<table>
<thead>
<tr>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usage of a customizable process to automatically create Additional and/or on demand DRM LICENSES for already produced objects</td>
</tr>
<tr>
<td>Advantages:</td>
</tr>
<tr>
<td>✓ Fully automation of LICENSES production for single and/or multichannel distribution</td>
</tr>
<tr>
<td>✓ Fully open in terms of business models and DRMs</td>
</tr>
<tr>
<td>✓ Make one use MANY MANY times for many many objects</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What is shown (can be shown)</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ AXMEDIS model (MPEG-21), License model also</td>
</tr>
<tr>
<td>✓ Automated Production and publication of licenses</td>
</tr>
<tr>
<td>✓ Usage of the AXCP Quick Start for GRID simple usage</td>
</tr>
<tr>
<td>✓ AXCP Rule activation</td>
</tr>
<tr>
<td>✓ Eventual usage of the AXMEDIS Scheduler, AXMEDIS Rule Editor</td>
</tr>
<tr>
<td>✓ Usage of one or more AXMEDIS Players</td>
</tr>
<tr>
<td>✓ Evidence that before licensing is not working and after licensed the user can play the object.</td>
</tr>
<tr>
<td>✓ Usage of the DRM</td>
</tr>
<tr>
<td>✓ Eventual usage of the CAMART for the evidence of the consumption</td>
</tr>
</tbody>
</table>
Script 4: DRM, production on demand of LICENSE

- Explain the purpose of the script
  - Before the activation the play is not possible on that object

- Usage of the AXCP Quick Start
- Activation of a script for the creation of licenses of different kind for a list of objects for a specific AXUID
  - Take the AXIUD from the file or list
- The script is posting the license on the AXMEDIS PMS in Florence, Italy
- After the licensing the play is possible
- Double click and thus PLAY of the object
- Show the object hierarchy with its inside digital resources
Script 5: P2P, monitoring of the single AXEPTool P2P node

**Purpose**
- Usage of a customizable process to automatically control and monitor a single P2P node, in this case monitoring the status
- Advantages:
  - Usage of a P2P network as publication channel, reduction of publication costs
  - Monitoring and controlling the P2P network via Super Nodes (AXEPTools)
  - BitTorrent Technology, very effective for large files sharing

**What is shown (can be shown)**
- Read the AXEPTool flyer to see the issues to claim
- Show of the AXEPTool, P2P tool
  - AXMEDIA tool is a simplified version without control capabilities
- Control/monitor of the P2P network
- Usage of the AXCP Quick Start or of the AXMEDIS Editor
- AXCP Rule activation
  - Eventual show of the AXMEDIS Scheduler
- Monitoring of one or more AXEPTools Nodes, by changing the IP,
  - it could be a parameter of the RULE
Script 5: P2P, monitoring of the single AXEPTool P2P node

AXMEDIS Content Processing Engines and Scheduler GRIDs

Control of P2P Distribution

AXMEDIS at IBC 2007

Accelerated Seeding

Controlled P2P network

Last status of the P2P Network

AXMEDIS P2P Node Status

Node Profile (lizar.dbi.unifi.it)

AXMEDIS at IBC 2007

AXMEDIS at IBC 2007
Script 5: P2P, monitoring of the single AXEPTool P2P node

- Explain the purpose of the script:
  - the monitoring of a single SUPER NODE of the P2P NETWORK for Publication and Download. The status has to report the profile of the node, the number of objects, the list of them, their status, etc….

- Using the AXCP Quick Start of AXCP Rule Editor
- Loading of the RULE
- Activation of the Rule
- Execution of the RULE
  - The rule produces automatically an HTML page with a selection of the collected information

- Show the results on the screen
- Eventual Shown of the AXEPTool for P2P sharing
- Eventual Shown of the P2P Query Support
- Eventual Shown of the P2P AXEPTool in Florence
- Eventual Shown of the P2P AXTRACKER:
  - http://axtrak.axmedis.org:8080/AXTrackv2/

SCRIPT 6

P2P Network
Script 6: P2P, monitoring of the whole AXEPTool P2P Network

Purpose
- Usage of an automated customizable process to control and monitor the WHOLE P2P Network of AXMEDIS via Supernodes
- advantages:
  - Usage of a P2P network as publication channel
  - reduction of publication costs, reduction of seeding time
  - Monitoring and controlling the P2P network via Super Nodes (AXEPTools)
  - BitTorrent Technology

What is shown (can be shown)
- Show of the AXEPTool, P2P tool
  - Eventual Shown of the AXMEDIA tool
- Control of the P2P network
- Usage of the AXCP Editor for the rules
- AXCP Rule activation
  - Eventual show of the AXMEDIS Scheduler
- Monitoring the whole nodes AXEPTools Nodes

AXMEDIS at IBC 2007
Last status of the P2P Network

- Iotar.dsi.unifi.it (150.217.15.248), Italy
- University of Leeds 1 (129.11.117.223, 129.11.117.179), UK
- Telecom Italia (82.90.96.218), Italy
- BBC (132.185.133.21), UK
- ILABS (85.18.48.130), Italy
- XIM (87.194.208.57), UK
- AFI (62.94.61.241), Italy
- VRS (217.117.19.226), Lithuania
- Tiscali (213.205.45.50), Italy
- ANSC (82.191.52.6), Italy
- Sejer (212.94.191.72), Paris, France
- Fraunhofer (192.44.35.27), Darmstadt, Germany
- sDae (195.55.243.2), Spain
- etc.

Last status of the P2P Network

Connected Peers in the AXMEDIS Network:

- Iotar.dsi.unifi.it (150.217.15.248) connected since Tue Aug 28 08:54:21 BST with 1344 objects
- University of Leeds 1 (129.11.117.223) connected since Tue Aug 28 08:54:21 BST with 1708 objects
- Telecom Italia (82.90.96.218) connected since Tue Aug 28 08:54:21 BST with 1344 objects
- BBC (132.185.133.21) connected since Tue Aug 28 08:54:21 BST with 1344 objects
- ILABS (85.18.48.130) connected since Tue Aug 28 08:54:21 BST with 1344 objects
- XIM (87.194.208.57) connected since Tue Aug 28 08:54:21 BST with 1344 objects
- AFI (62.94.61.241) connected since Tue Aug 28 08:54:21 BST with 1344 objects
- VRS (217.117.19.226) connected since Tue Aug 28 08:54:21 BST with 1344 objects
- ANSC (82.191.52.6) connected since Tue Aug 28 08:54:21 BST with 1344 objects
- Sejer (212.94.191.72) connected since Tue Aug 28 08:54:21 BST with 1344 objects
- sDae (195.55.243.2) connected since Tue Aug 28 08:54:21 BST with 1344 objects
- Fraunhofer (192.44.35.27) connected since Tue Aug 28 08:54:21 BST with 1344 objects
- Tiscali (213.205.45.50) connected since Tue Aug 28 08:54:21 BST with 1344 objects
- etc.
P2P Network, Some Numbers

- Number of Supernodes controlled by the AXCP GRID:
  - about 13
- Number of different objects in the test network since the beginning:
  - 2700
- Number of alive objects in the test network, AXTracker catalogue:
  - 1362
- Size of the present testing catalogue of 1362 objects:
  - 16 Gbyte
- Number of different peers connected to the AXTracker:
  - 262
- Number of active peers for the AXTracker in the last 24 hours:
  - ...
- Number of active peers related to the AXP2P.node objects:
  - about 120

Script 6: P2P, monitoring of the whole AXEPTool P2P Network

- Explain the purpose of the script:
  - Monitoring the status of the WHOLE P2P NETWORK for Publication and Download, how many nodes are active, how many objects they have, etc., which is the status of each of them if needed as in the SCRIPT 5.
- Usage of the AXCP Rule Editor
  - Select the Rule, activate the rule
    - Monitoring the activities on the node on which it is executed
  - Show the results on the screen, read them
    - Show how many objects they have, who they are.
  - Eventual Shown of the AXEPTool for P2P sharing
  - Eventual Shown of the P2P Query Support
  - Eventual Shown of the P2P AXEPTool in Florence
  - Eventual Shown of the P2P AXTRACKER:
    - http://axtrk.axmedis.org:8080/AXTrackv2/
Script 7: automated P2P downloading from the P2P Network

**Purpose**
- Usage of a customizable process to automatically download content from the P2P Network, make a query on the P2P network and start the download, take and objects and put them into the database, etc.
- Advantages:
  - Usage of a P2P network as distributed database and for content downloading B2B P2P channel
  - Reduction of content acquisition costs
  - BitTorrent Technology

**What is shown (can be shown)**
- Make a query/selection, with the AXCP Quick Start
- Show of the AXEPTool, P2P tool
  - Eventual Shown of the AXMEDIA tool
- Usage of the AXCP Editor for the rules
- AXCP Rule activation
  - Eventual show of the AXMEDIS Scheduler
Script 7: automated P2P downloading from the P2P Network

Explain the purpose of the script:

- Make a query on the P2P network on the basis of complete metadata, may be including also PAR, automating the downloading from the WHOLE P2P NETWORK
- Working with the AXCP Quick Start or with the AXCP Editor
- Make a QUERY identify more Objects into the P2P
  - The query has to get content posted on P2P and present in several supernodes of the P2P network: thus content including into the title "IBC" and/or "IBC_PDA"
  - they have to well seeded into the P2P network
- Loading of the RULE
- Activation of the Rule
- Execution of the RULE
- The chosen objects are listed into the downloading list on the reference AXEPTool,
  - the download starts from the P2P network
- Show the results on the screen
- Eventual Shown of the AXEPTool for P2P sharing
- Eventual Shown of the P2P Query Support
- Eventual Shown of the P2P AXEPTool in Florence
- Eventual Shown of the P2P AXTRACKER
Script 8: Crawling, production, adaptation, delivering

**Purpose**
- Usage of an automated customizable process to get resources and metadata from legacy CMS, create content objects for different terminals/devices (multichannel), distribute them, and use them.
  - advantages:
    - Fully automation of the content production and publication, for multichannel distribution
    - Fully customization in terms of metadata and composition, production and protection
    - Make one use MANY MANY times for many many objects

**What is shown (can be shown)**
- AXMEDIS model (MPEG-21)
- Automated Content crawling, production, adaptation and publication
- Usage of the AXCP Editor
- Usage of several adaptation algorithms and tools
- AXCP Rule activation
  - Eventual usage of the AXMEDIS Scheduler, AXMEDIS Rule Editor
- Usage of one or more AXMEDIS Players
Script 8: Crawling, production, adaptation, delivering

- Loading resources from the File System
- Adaptation of the digital resources
- Manipulation of metadata
- Save them on disk in the adapted format
- Production of AXMEDIS objects
- Save them into some database and hard disk
- Recover them from the database if possible in alternative from the disk
- Play of those objects on the same machine with some players.
Features of AXCP

AXMEDIS processing capabilities

- Processing on
  - Metadata
  - Text and documents
  - Audio files
  - Video files
  - Image files
  - Multimedia
  - XML

- Communication
  - Access to databases, CMS, crawlers, etc.
  - FTP, HTTP, etc.
  - Send Mails

- Distribution and publication
  - Access to FTP, Web services, P2P, etc.
Processing METADATA on AXCP and AX-EDITOR

- Accessing to legacy CMS in several manners and protocols
  - via a crawler (SearchBox), or
  - directly with ODBC, query, HTML, ft, WEBdav, WEB Services, etc.
  - Database to make and actualise queries
- Accessing and defining AXInfo Metadata
  - Dublin Core, several IDs
  - Any MPEG-7
  - Business Metadata
  - Potentially Available Rights, PAR, Licensing information
  - Any kind of Descriptors
  - Workflow information
  - Protection information
- Metadata Mapper based on XSLT

Processing TEXT on AXCP and AX-EDITOR

- Text/Document adaptation and transcoding
- Text KeyWords
  - Extraction from comparison
  - Extraction from semantic analysis
- Text Transcoding by format
  - PDF-TXT, HTML, PS, RTF, Msword, Plain
- Text Fingerprint
  - Extraction
  - Compare
  - Plagiarism detection
Processing AUDIO and RING on AXCP and AX-EDITOR

Audio adaptation and transcoding
- FFmpeg Library
  - Audio Transcoding
  - WAV, WMA, MPEG, VORBIS, AC3, DV, MACE, ADPCM, AAC, real audio, etc.
- LSAudio Library
  - Audio Transcoding
  - WAV, AIFF, PARIS, NIST, SVX, IRCAM, W64, SD2, ETC.
- RingTones production:
  - Convert to MP3, WAV
  - Resample, clip, etc.
- Audio descriptors:
  - Low level descriptors extractor
- Audio fingerprint:
  - extractors and compare, plagiarism

Processing VIDEO and IMAGES on AXCP and AX-EDITOR

FFmpeg Library
- Video Transcoding
- Mpeg, mpeg2, mp4, raw, h263, wmv, asf, svq, dv, h264, vp3, ffv, flash, etc.
- Video fingerprint
  - Extraction
  - Compare

ImageMagik Library full
- Image Conversion: > 100 formats
  - Jpg, gif, png,
- Image Processing:
  - Contrast, edge, blur, media, mirror, equalize, magnify, resize, rool, scale, shade, negate, noise, replace, shear, spread, etc.
### Processing MULTIMEDIA on AXCP and AX-EDITOR

- Managing complex formats:
  - MPEG-21
  - SMIL, HTML
  - OMA
- Formatting of SMIL, templates, style sheets
  - Templates Descriptors
  - Style Descriptors
  - Resource Descriptors
- Genetic optimisation of parameters
- Processing XML files, E4X into the Java Script
- MPEG-21 DIA: Terminal/device, user, network
- Transcoding and production:
  - MP4->3gp, Mp4 -> ISMA, Add Multimedia, create MP4
  - Delay track, remove track, etc.
  - MP4 -> AVI

### Processing DISTRIB/PUBLIC on AXCP and AX-EDITOR

- Several Communication capabilities:
  - WEB Services, HTTP, FTP, File System, etc.
  - Accesses to the Operating System
  - Accesses to databases
- Controlling/Monitoring P2P single node
- Controlling/Monitoring P2P network
- Publishing/seeding content on P2P
- Downloading content from P2P
- Publication of Content via WEB Services
- Publication of Programme via Programme and Publication tool
Proposed Basic Configurations, SHOW CASE

- **AXMEDIS Authoring tools**
  - Simple tools in CDs (only SW)

- **AXMEDIS DRM**
  - Simple tools in CDs (only SW)
  - AXMEDIS DRM, ready to start (HW and SW installed)

- **AXMEDIS players**
  - Standard and
  - Customized players

- **AXCP, Content Processing GRID platform**
  - Simple tools in CDs (only SW)
  - AXCP, ready to start (HW and SW installed)

- **Controlled P2P Network**
  - Simple tools in CDs (only SW)
  - Controlled P2P Network, ready to start (HW and SW installed)

- **Final Users' Content Posting and distribution**
  - Simple tools in CDs (only SW)
  - Content Posting, ready to start (HW and SW installed)
AXMEDIS DRM (PMS, AXCS, AXCA, etc...)

Installation:
1. Registration for Authentication
2. Tool Certification
3. AXMEDIS Compliant Players
4. Content Access
5. Business Transaction
6. Usage

Control and Supervision:
- AXMEDIS DRM (PMS, AXCS, AXCA, etc...)
- AXMEDIS or Distributor Registration Site
- Any Distributor front end Server
- Transaction front end Server
- AXMEDIS Production Manager
- AXMEDIS Certifier and Supervisor
- AXMEDIS Certification Authority
- AXMEDIS Compliant Players
- AXMEDIS DRM Solution, Ready to use

AXMEDIS DRM Solution, Ready to use

- AXMEDIS DRM Registration Service
- AXMEDIS Certification Authority
- AXMEDIS Protection Manager Sup.
- AXMEDIS Certifier and Supervisor
- AXdb
- Distributor Portal
- AXMEDIS CAMART+All
- Accounting / reporting

www.axmedis.org
Interoperable Players

- PC players with full functionalities
  - Stand Alone Player for Windows
  - Version with Replaceable skins
  - Active X Player for Windows, for:
    - Integrating player in Html pages
    - Microsoft Internet Explorer Browser
    - Macromedia tools Authorware
    - Realising customised AXMEDIS Players based on .NET
  - Plug in for Mozilla Internet Browser
    - Integrating player in Html pages
    - Two different skins

- PDA player:
  - MPEG-4, SMIL, HTML

- STB player:
  - for IPTV
  - for DVB-S
  - MPEG-2, MPEG-4

- Mobile player:
  - A pure Java player will be ready for October 2007
  - SMIL support with Audio Visual, MMAPI of Java

AXMEDIS Content Processing GRID

- AXCP GRID
- Workflow manager
- AXMEDIS Rule Editor
- Your AXCP Rules
- Any Plug-in for content processing and/or protection
- AXMEDIS Database
- Distribution Channels and servers
- AXCP nodes
- Quick Starter
- AXCP Scheduler
- WS, FTP, etc.
- Your CMSs

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AXMEDIS Content Processing GRID, ready

AXCP server
AXMEDIS Rule Editor
Workflow manager
AXMEDIS Database
Your CMSs
Distribution Channels and servers
Any Plug-in for content processing and/or protection

Quick Starter
AXCP Scheduler
Your AXCP Rules

Other your nodes
Any connection
WS, FTP, etc.

AXMEDIS at IBC 2007

Controlled P2P Network

AXMEDIS Query Support
AXMEDIS Tracker
AXCP
AXEPTool
MaxMedia
AXMEDIS
AXCP
AXEPTool
MaxMedia
AXMEDIS
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