



# AXMEDIS Tutorial on Distribution

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  - ▶ Accounting and Reporting





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## Credits (I)

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## Tutorial presentation (I)

### ■ Rationale

- ▶ Open to all and based on AXMEDIS 2005 Content distribution tutorial
- ▶ Adopts examples selected to explain both the process modifications and related benefits
- ▶ Limits & constraints are pointed out to keep a fair and concrete perspective.





## Tutorial presentation (II)

### ■ Intended audience

- ▶ Business Managers
- ▶ Technical Managers
- ▶ Research Managers

### ■ Prerequisites

- ▶ Basic knowledge of Distribution cycle, channels & tools
- ▶ Basic knowledge of marketing, legal & protection aspects



## Objectives & Outcomes (I)

### ■ Objectives

- ▶ Recall overall content production process
- ▶ New tools location in the process
- ▶ Hints & suggestions on environment set-up
- ▶ AXMEDIS distribution framework presentation
- ▶ Practical examples provision





## Objectives & Outcomes (II)

### ■ Outcomes

- ▶ AXMEDIS database know-how
- ▶ AXMEDIS Certifier & Supervisor know-how
- ▶ AXMEDIS Accounting & Reporting know-how
- ▶ AXEPTTool know-how
- ▶ B2B/C distribution integration within AXMEDIS Factory know-how
- ▶ AXMEDIS Programme & Publication know-how
- ▶ AXMEDIS On-Demand services know-how
- ▶ AXMEDIS distribution framework usage know-how



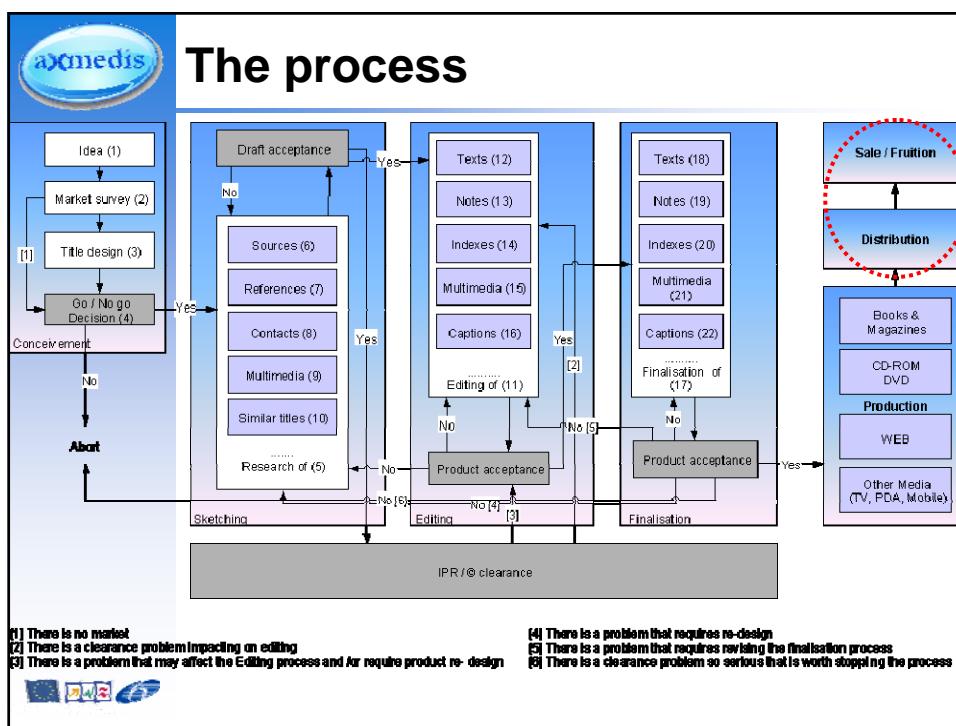
## The context

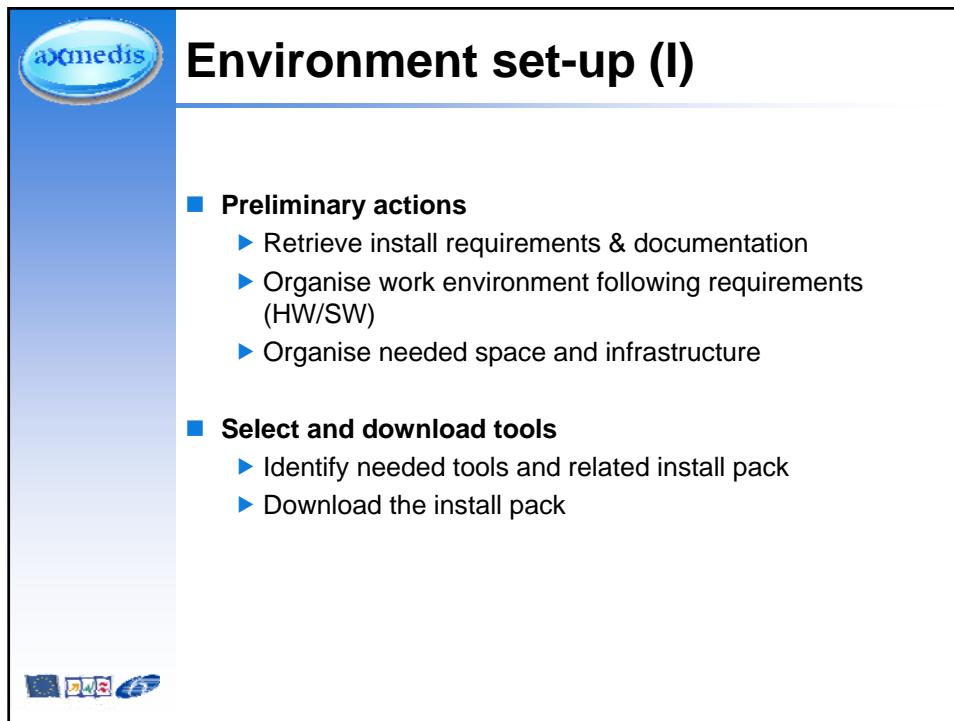
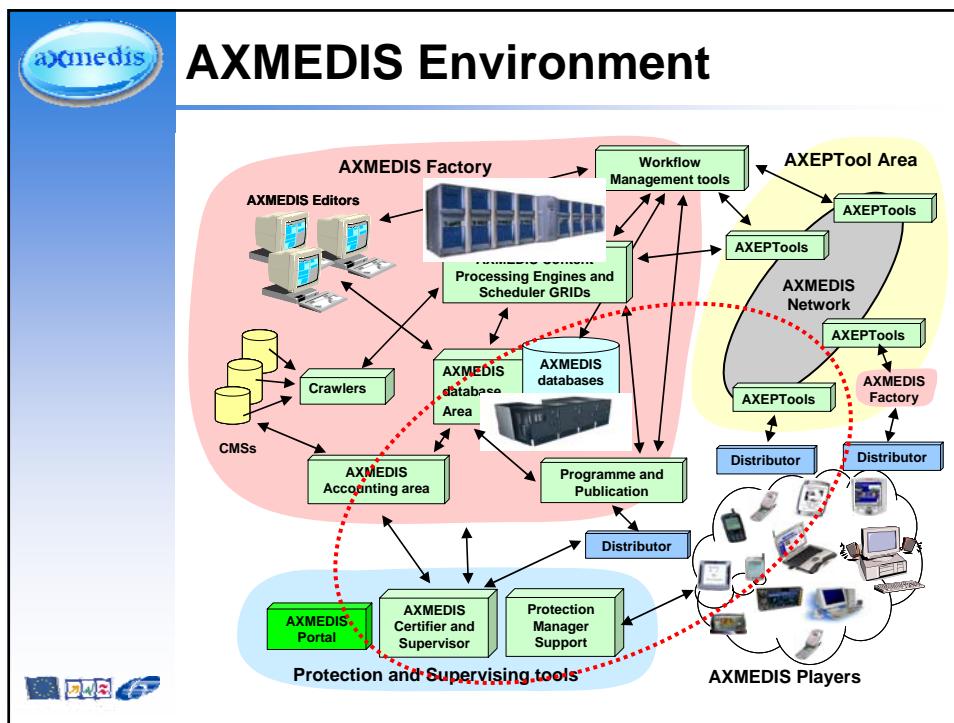
Content Distribution & AXMEDIS



**The context**

- **Objectives**
  - ▶ Recall overall process and distribution location in it
  - ▶ New tools location in the process
  - ▶ Hints & suggestions on environment set-up
  
- **Outcomes**
  - ▶ AXMEDIS relation to standard content distribution context know-how





## Environment set-up (II)

- **Install tools**
  - ▶ Follow install pack instructions (automatic configuration recommended)
- **Configure tools**
  - ▶ Insert required data for custom configurations or wherever needed
- **Get acquainted with user interface & commands**
  - ▶ Read available documentation, suggestions, tips and FAQs
  - ▶ Look at provided examples



## AXMEDIS Distribution - Part (I)

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Core Components





## Distribution core components

### ■ Objectives

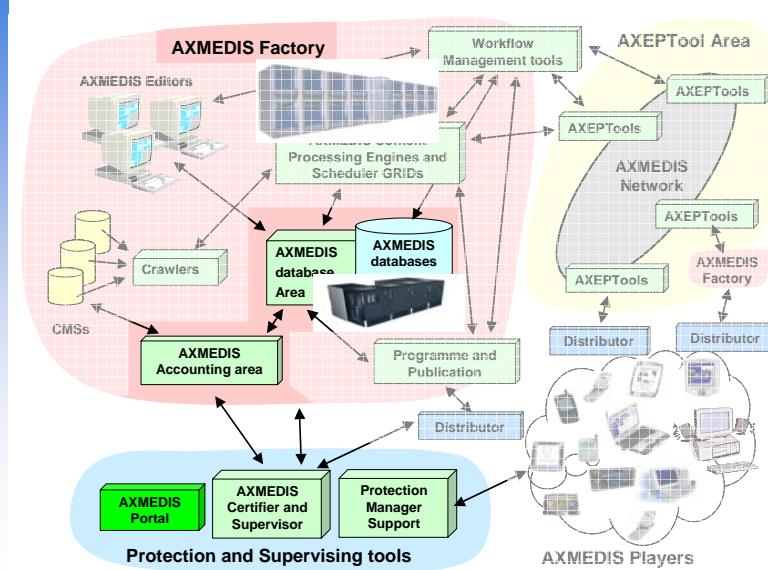
- ▶ Recall basic AXMEDIS database (AXDB) concepts
- ▶ Recall basic query support concepts
- ▶ Recall basic protection & certification concepts
- ▶ Expose basic accounting & reporting concepts

### ■ Outcomes

- ▶ AXMEDIS database management know-how
- ▶ AXMEDIS protection & certification usage know-how
- ▶ AXMEDIS accounting & reporting usage know-how



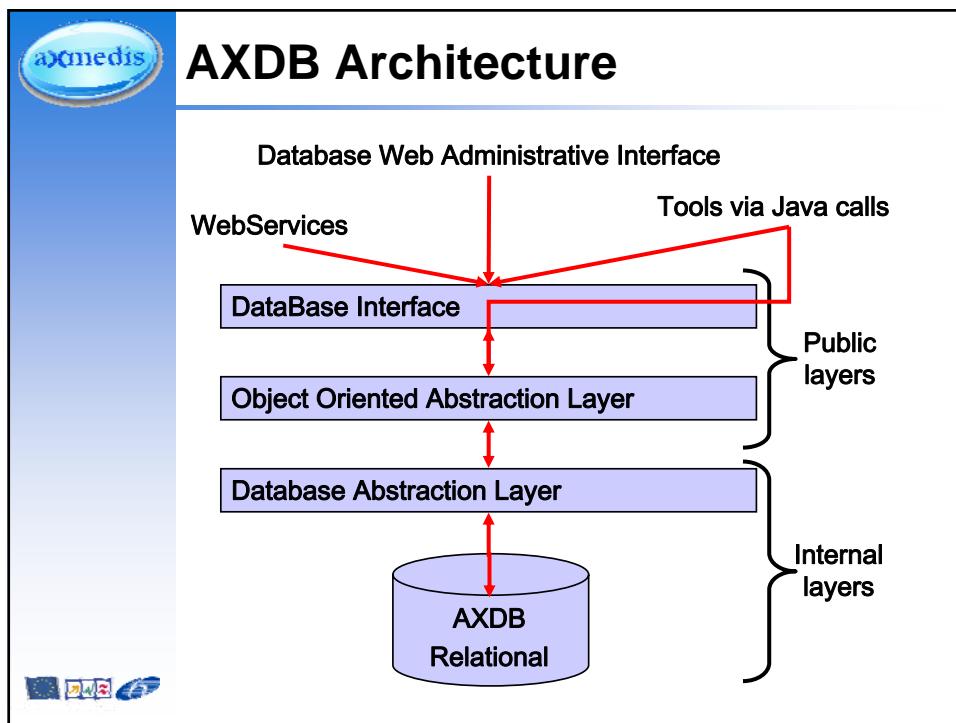
## Core components



**AXMEDIS Database (AXDB)**

- Support for both generic & standardized metadata sets (Dublin Core...)
- User selectable metadata set depending on what is relevant for user's business
- Automatic indexing based on user-selected metadata for each object that is stored
- Multilingual metadata management to improve effectiveness & efficiency of search & retrieve processes







## Query Support Facts

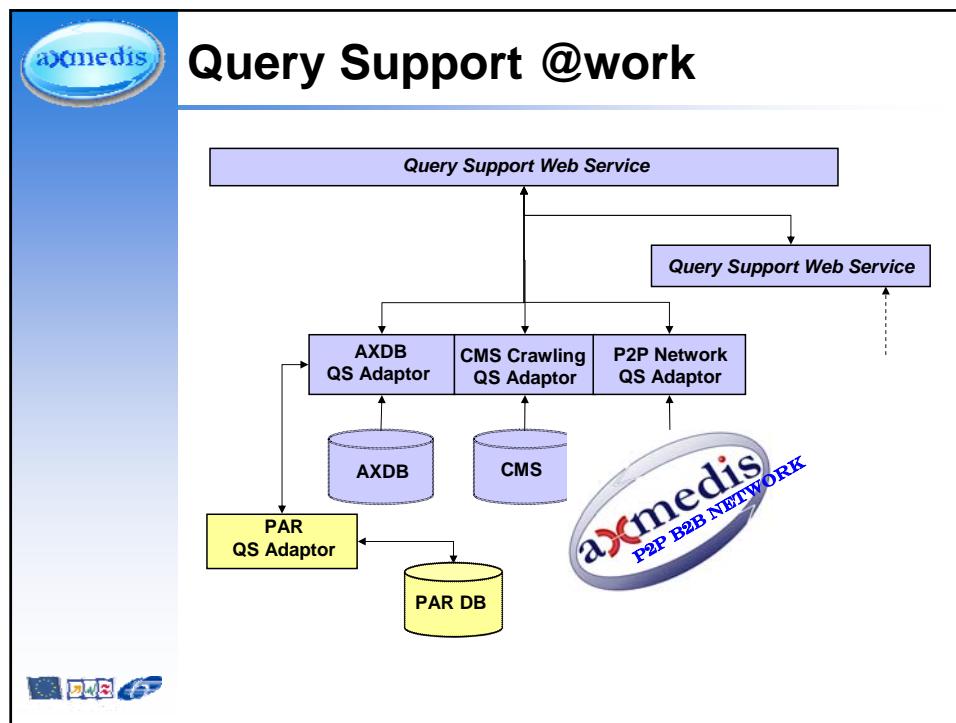
- **Unified language for querying (platform independent)**
- **Unified language for results**
- **Management of complex queries on**
  - ▶ Metadata (author, creators, titles, bit-rate...)
  - ▶ Rights (Can I use it in Italy?, Can I burn a DVD? ...)
- **Support for different data sources**
  - ▶ Query on AXMEDIS Factory Database
  - ▶ Query on own Content Management System
  - ▶ Query on P2P network (B2B level)
  - ▶ Query on another Query Support (i.e. for Kiosk)



## AXMEDIS Query User Interface

- **Heading – contains**
  - ▶ checkbox to address query locations
- **Form – contains**
  - ▶ Dublin core Metadata
  - ▶ other general metadata and
  - ▶ Available Rights with a sub
  - ▶ set of the MPEG 21 Metadata.
- **Actions – contains controls to**
  - ▶ reset all values provided, or to
  - ▶ submit queries





**GUI look and usage**

The screenshot shows the AXMEDIS Query User Interface running in Mozilla Firefox. The interface includes a sidebar for querying metadata like Title, Rights, and Completeness, and a main panel displaying search results for items like "La piccola bottega degli orrori" and "Thomas in Love".

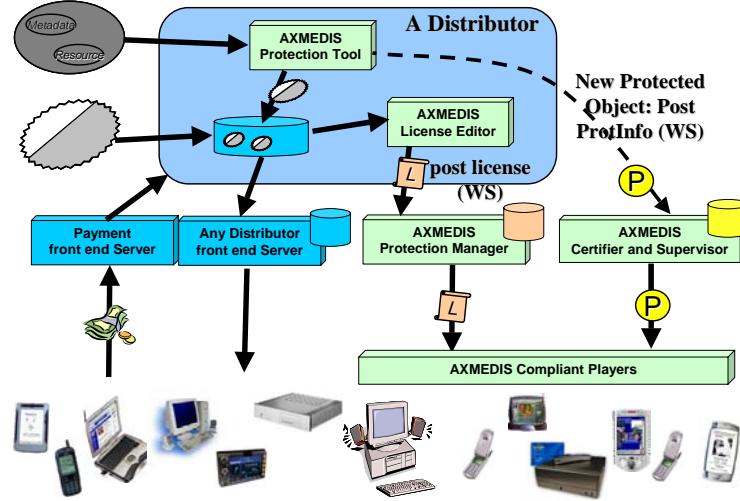


## Query Support Results

- **Objects**
  - ▶ Object IDs
  - ▶ How to recover objects (from P2P network...)
- **Rights related information like**
  - ▶ What Can I do with the object
  - ▶ Where can I use the object
  - ▶ Who can distribute the object
- **Objects related metadata like**
  - ▶ Length
  - ▶ Creators
  - ▶ Bit rate



## Protection & Control Process





## Protection Manager Support

### ■ Objectives

- ▶ Provide the licensing functionality to the system
  - Verification, storage, management, authorisation of user actions
- ▶ Connect clients to AXMEDIS Certifier and Supervisor through secure channels
  - Keep track of user actions, even off-line

### ■ Outcomes

- ▶ Several levels of control and governance: PMS Client, PMS Domain and PMS Server
- ▶ Allow on-line and off-line operation to the users



## Certifier & Supervisor

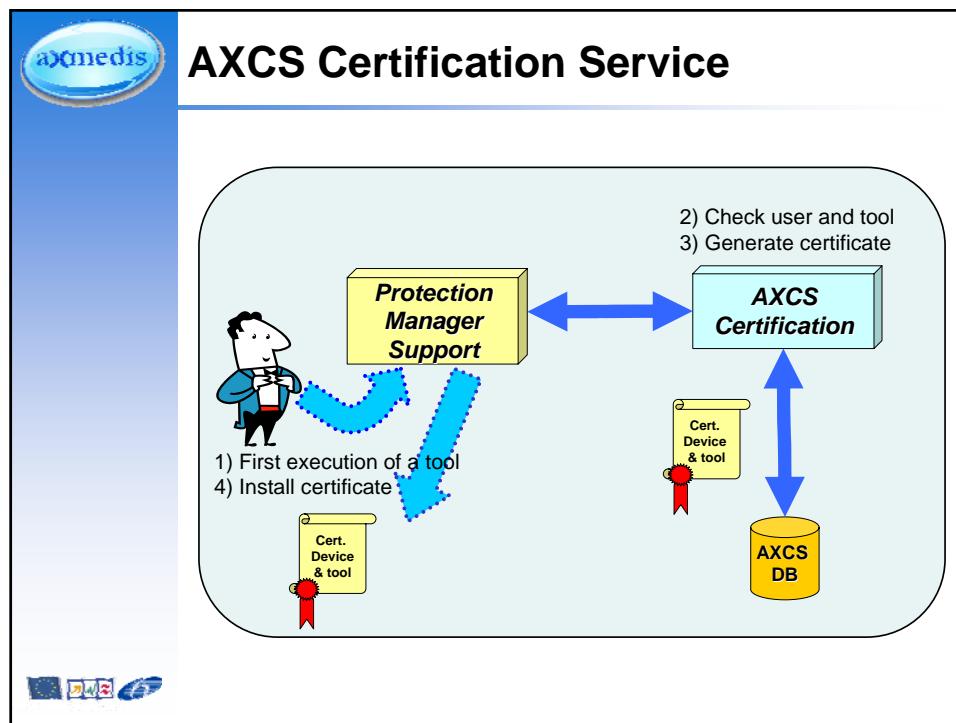
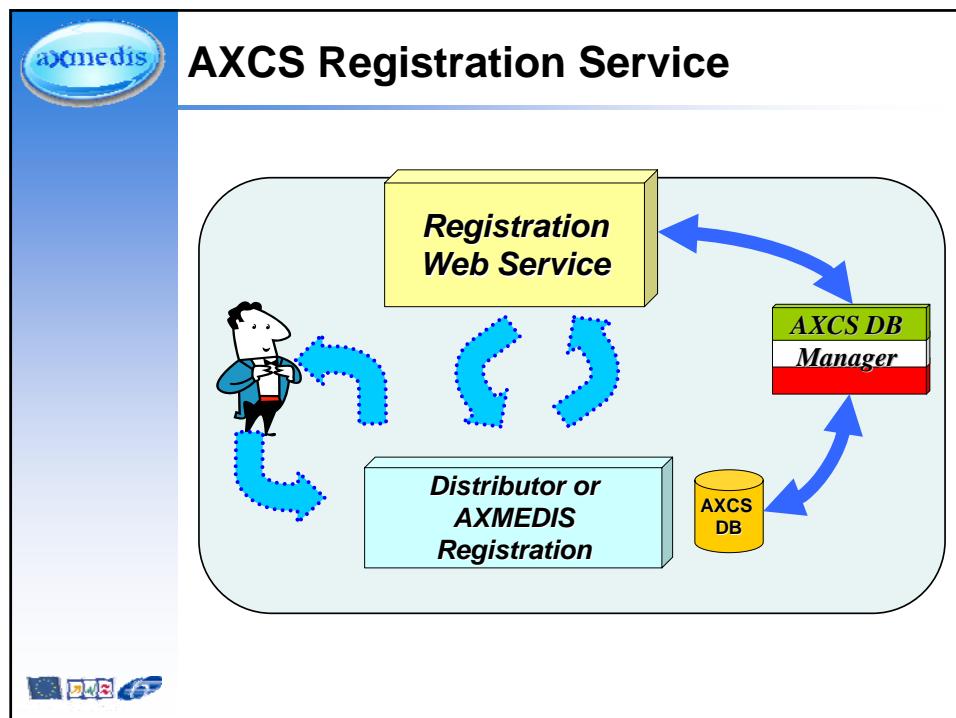
### ■ AXMEDIS certifier and supervisor provides

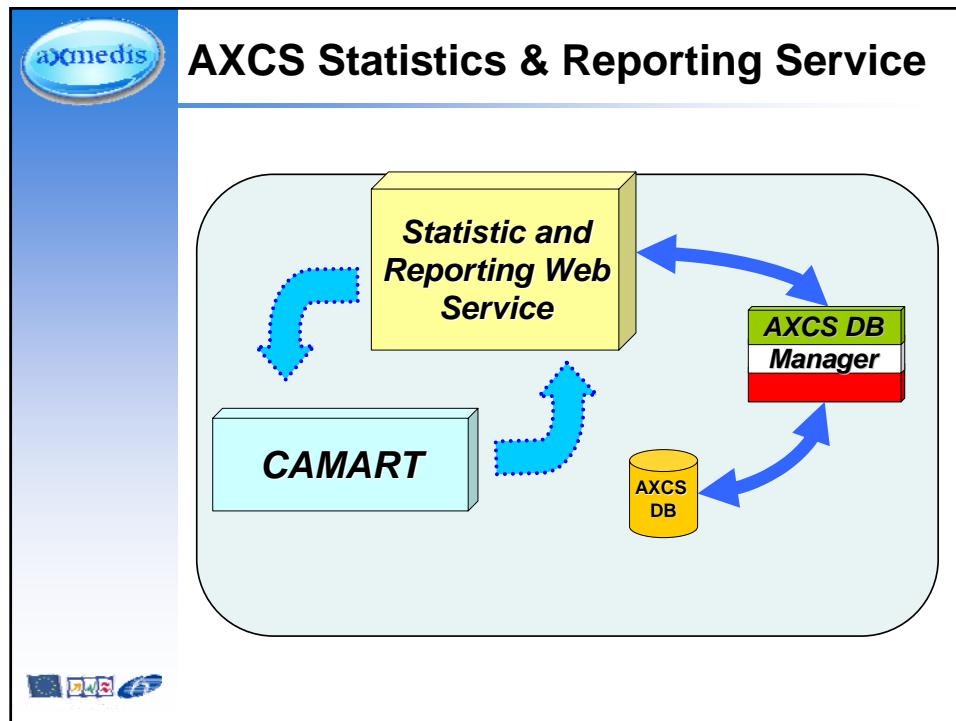
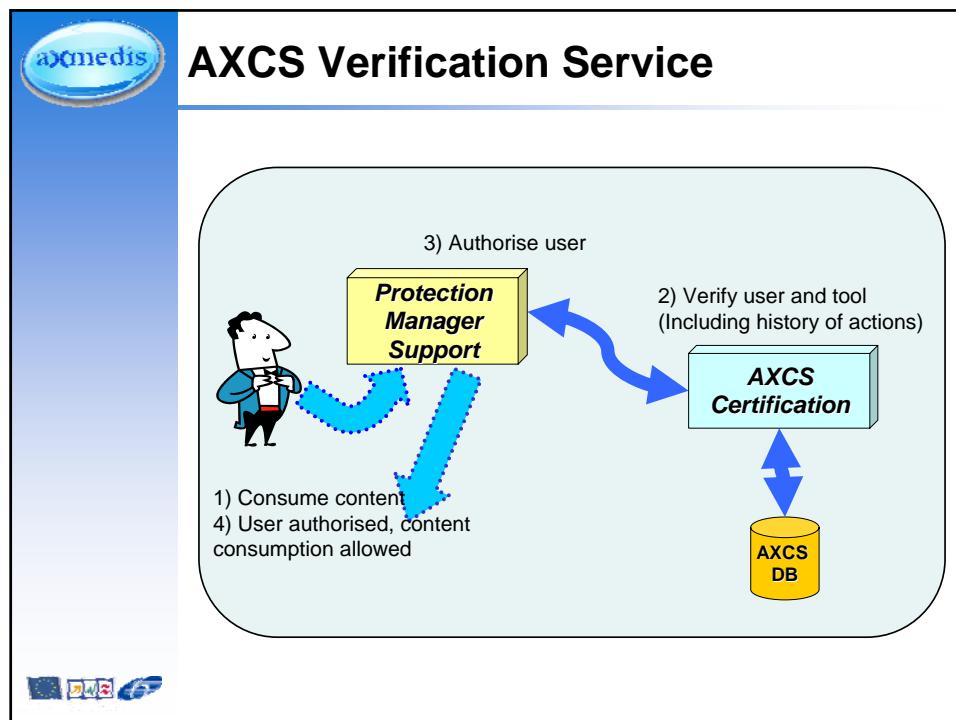
- ▶ A single point for user registration and certification both at Consumer and Business level
- ▶ A single certified point for collecting event reporting logs both for accounting and marketing purposes

### ■ AXMEDIS certifier and supervisor added value

- ▶ Security by certifying users
- ▶ Control on content usage by registering transaction
- ▶ Accessing statistical information useful for marketing and planning of activities









## Accounting & Reporting (I)

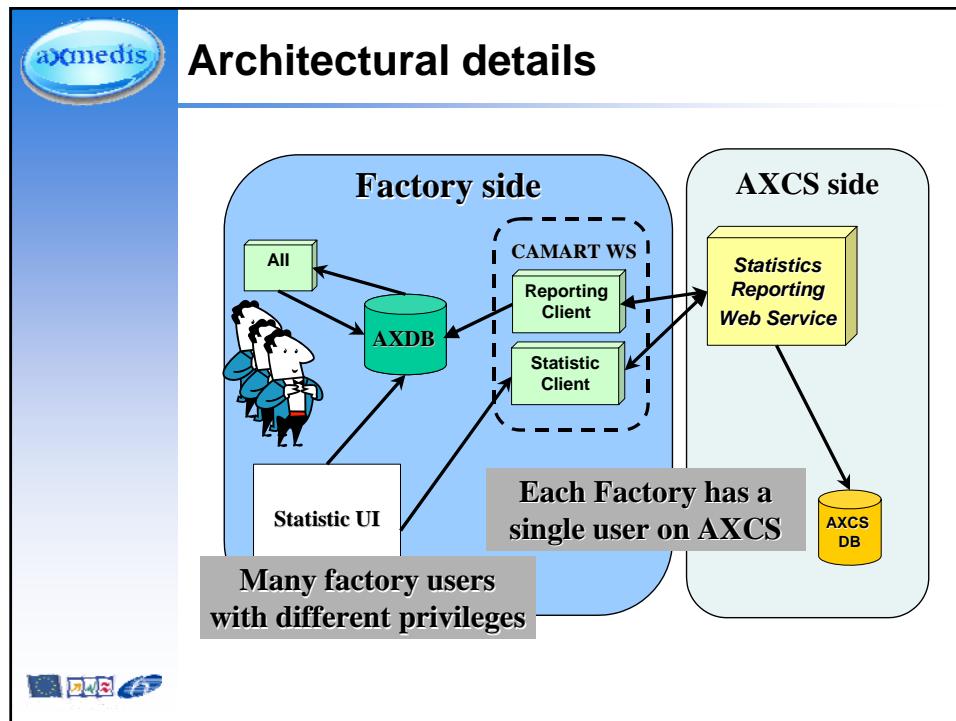
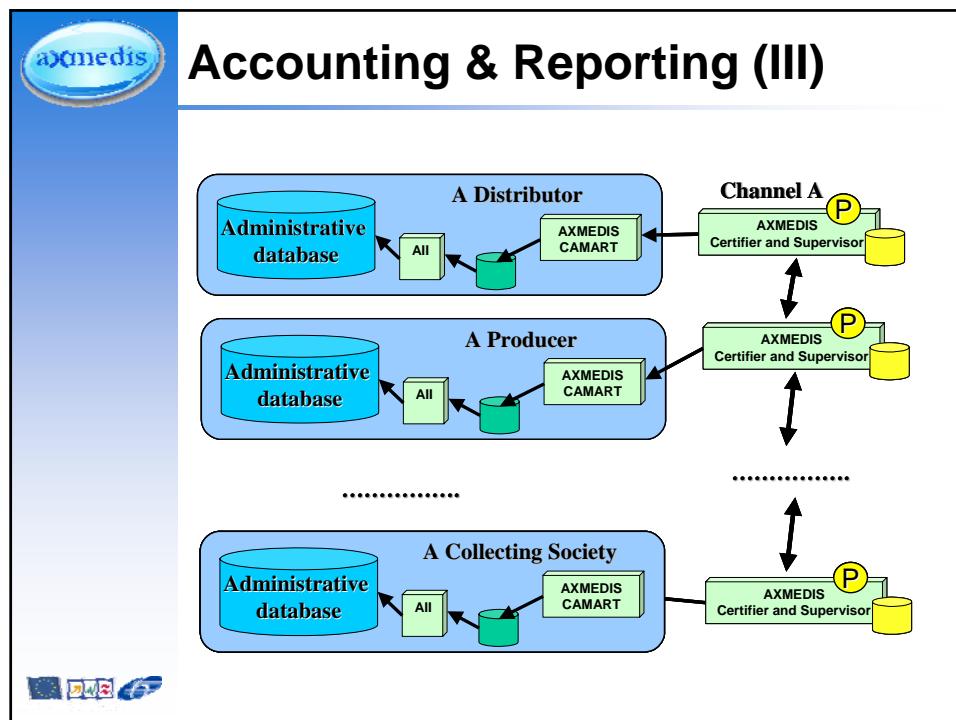
- **ANONYMOUS LOGS** – Extract logs for statistical or marketing purposes for creating:
  - ▶ usage statistics per metadata field (country, content kind, dimension...)
  - ▶ publication programs based on certain statistics
  - ▶ publication catalogues based on certain statistics
- **Note that:** all logs are in anonymous format, that is no ID are present



## Accounting & Reporting (II)

- **NAMED LOGS** - Extract log for administrative purposes like:
  - ▶ Billing customers (how many time user XYZ has played this song)
  - ▶ Distributing/collecting rights revenues (how many times this song has been played in Italy and who has to pay)
- **Note that:** only the log that are related to objects for which some right is owned)





**An example**

The screenshot shows a desktop environment with several windows open. In the foreground, there's a main window titled 'AXMEDIS' which appears to be a web-based application. It has a sidebar with navigation links like 'Hello admin', 'Number of CollectedLogs', and 'Completed'. The main area displays a table with columns: AXID, AXOID, AXIC, Execution Timestamp, Owner Name, Location, Operation ID, Protection Stamp, and Registration Timestamp. Below this table, there are two smaller charts: '10 AXOID chart' and '5 AXCID chart', both showing data with columns 'AXID' and 'Count'. In the background, there are other browser windows titled 'Cansat - Mozilla Firefox' and 'Cansat Statistic Service - Mozilla Firefox', both showing similar log statistics. The overall interface is designed for monitoring and managing distributed content logs.

**Practice section**

- **Query Support**
  - ▶ Make a query
  - ▶ Select items within results
  
- **Protection manager, Certifier & Supervisor**
  - ▶ Registering AXMEDIS Users
  - ▶ Using protected content
  
- **Accounting & reporting statistics**
  - ▶ Select logs
  - ▶ Read logs



## AXMEDIS Distribution - Part (II)

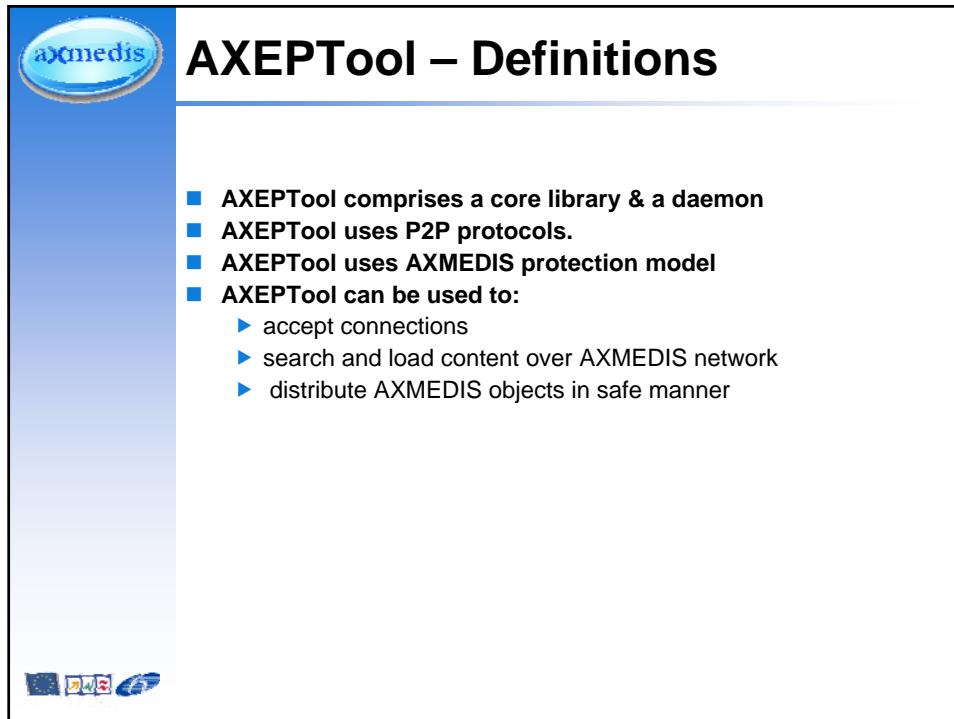
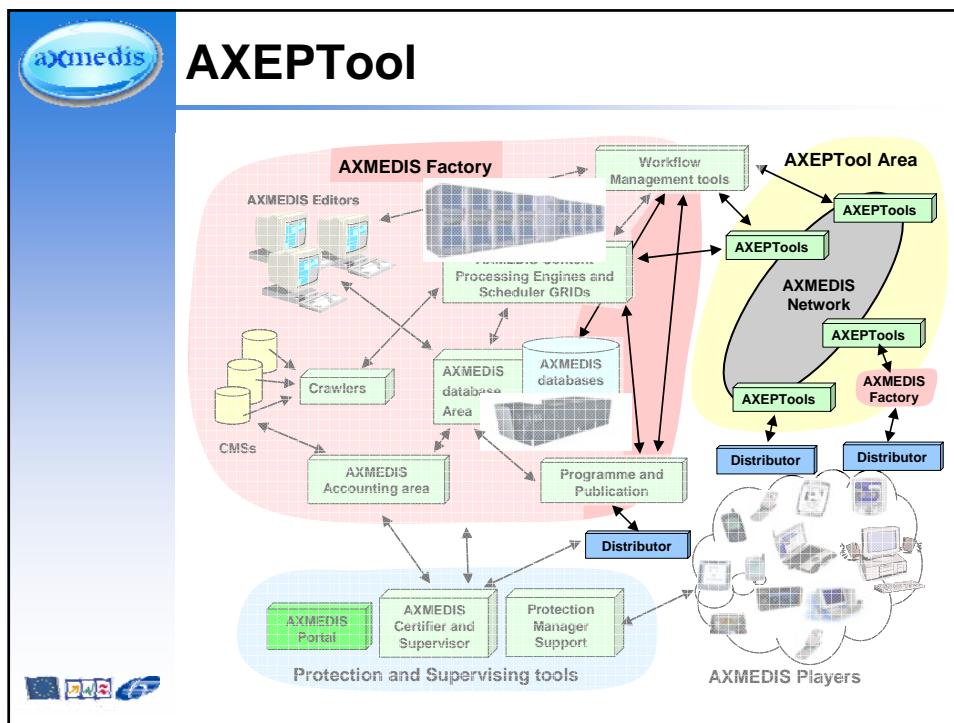
Distribution specific & Supporting Tools



## AXMEDIS Publishing Tools

- **Objectives**
  - ▶ Introduce AXMEDIS distribution tools
  - ▶ Explain their relation with the content distribution chain
- **Outcomes**
  - ▶ Understanding of AXEPTTool
  - ▶ Understanding of Programme & Publication (P&P)
  - ▶ Understanding of AXMEDIS Query on demand
  - ▶ Understanding of AXMEDIS distribution mechanism



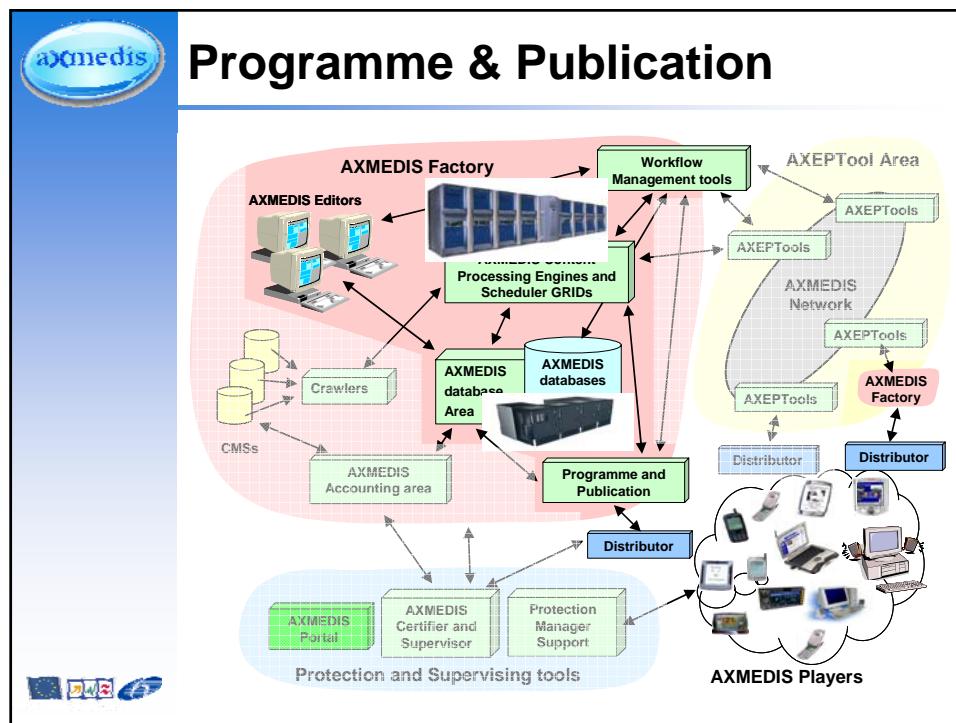


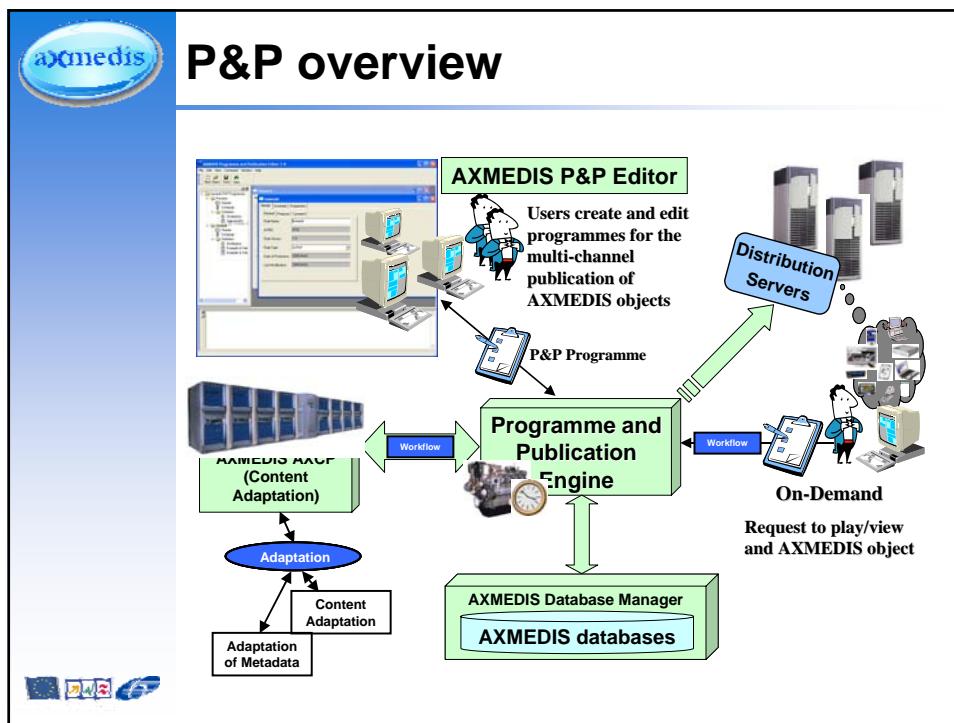
**axmedis**

## AXEPTool – Services

- AXEPTool offers
  - ▶ P2P solution based on BitTorrent client and tracker
  - ▶ Making queries with the same Query support interface
  - ▶ Download objects with resume/suspend mechanism
  - ▶ Publishing of objects
  - ▶ Connection with the AXMEDIS content processing GRID for automating publishing and downloads of objects
  - ▶
- AXMEDIA P2P tool:
  - ▶ Derived from AXEPTool as simplified P2P tool for final users
  - ▶ P2P content sharing as above
  - ▶ No direct download/publishing





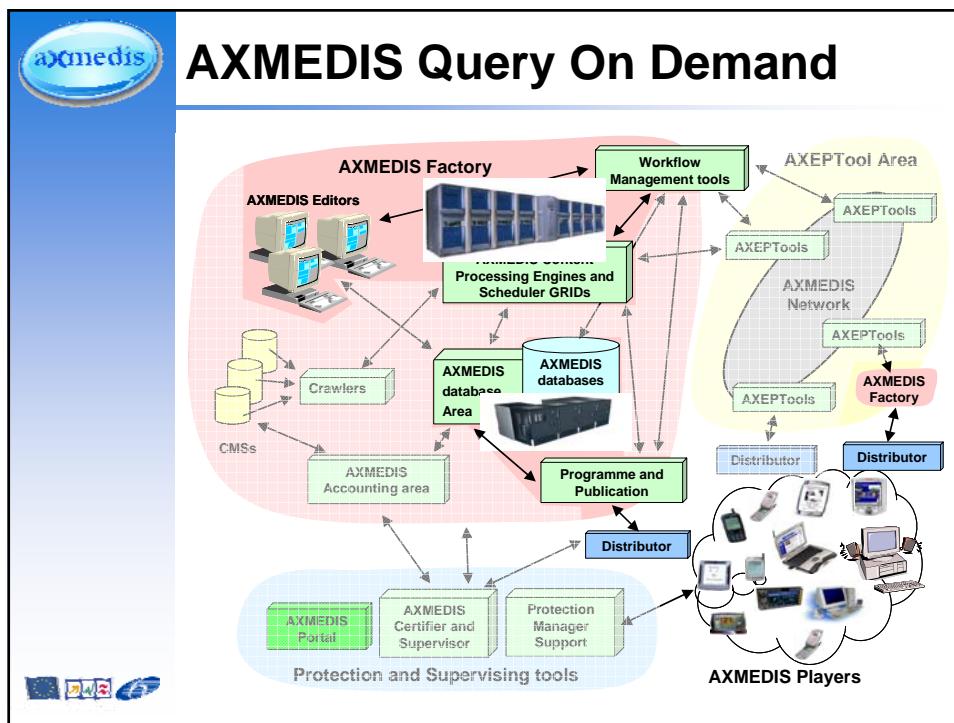
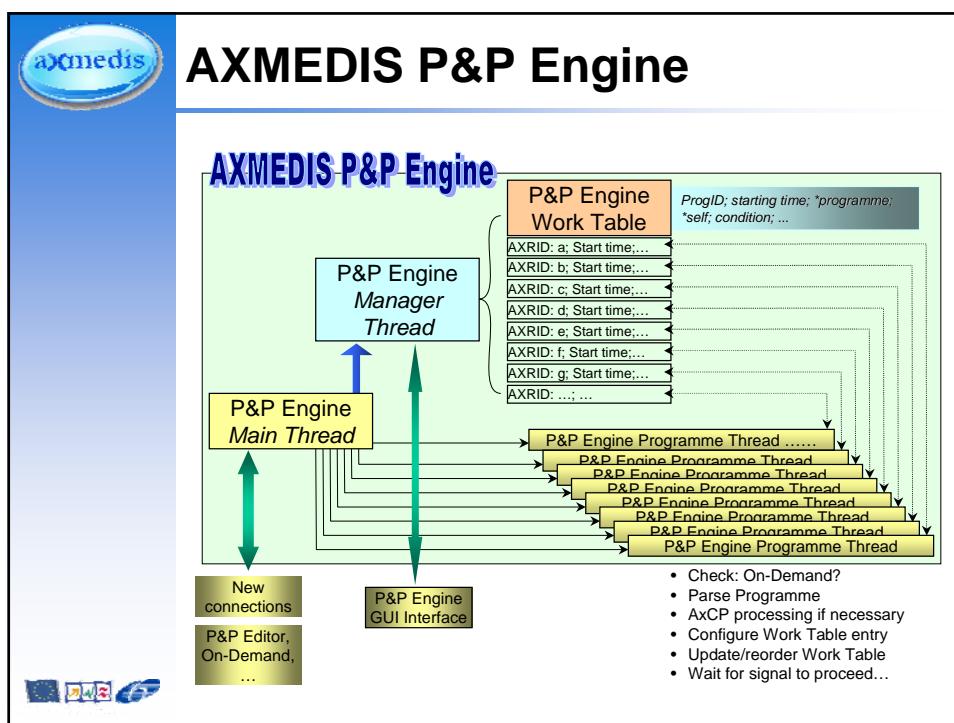


**P&P Area Tools**

- **Programme & Publication**
  - ▶ **Editor (GUI)** to
    - Edit programmes
    - Search
    - Test & Activate
  - ▶ **Engine to**
    - Link to Content Processing area
    - Link to Distribution Servers
    - GUI monitor
- **On-Demand**

The slide displays four screenshots of the AXMEDIS P&P tools:

- Programme & Publication Editor:** Shows the graphical user interface for creating and managing programmes.
- Engine monitor:** A window showing logs and status information for the Programme and Publication Engine.
- On-Demand monitor:** A window showing logs and status information for the On-Demand component.
- Content Processing area:** A window showing the Content Processing area interface.





## Query On Demand – Rationale

- The user wants to select & download specific content according to some wish
- AXMEDIS provides a simple search mechanism
  - ▶ Simple queries are enriched using information on client device and distribution channel
  - ▶ User can select a specific content or refine the query
- The P&P Engine adapts On-Demand content to fit with the user's device (client profile)
  - ▶ Content production on-demand based on client & distribution profile



## Query On Demand – Procedure

- Queering
  - ▶ User can enter a query using a simple web interface
  - ▶ Simple queries are enriched using information about “**client device**” and “**distribution channel**”
  - ▶ A list of matching contents is presented to the user
  - ▶ User can either select a specific content or refine the query
- Content retrieving/using
  - ▶ Content is produced on demand based on client & distribution profile (if not yet available)
  - ▶ Content is downloaded and played on the client device





## Practice section

- **Programme and Publication (P&P)**
  - ▶ P&P Editor
    - Create and edit a P&P programme
    - Querying for Content
    - Activating a programme
  - ▶ P&P Engine
    - Distribute an activated P&P Programme
    - GUI Monitor



## AXMEDIS Distribution - Part (III)

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Distribution examples





## AXMEDIS Distribution Examples

### ■ Objectives

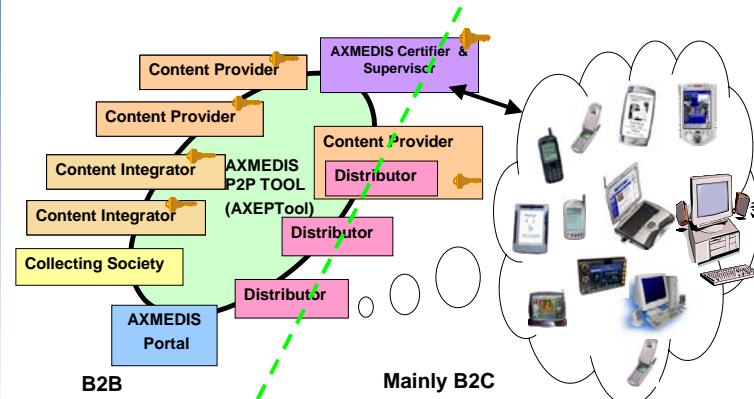
- ▶ Introduce AXMEDIS distribution scenarios
- ▶ Explain their aim and scope
- ▶ Analyze how AXMEDIS tools have been integrated
- ▶ Analyze how AXMEDIS tools have been used

### ■ Outcomes

- ▶ Understanding AXMEDIS distribution mechanism
- ▶ Understanding AXMEDIS distribution channels
- ▶ Understanding benefits coming from adoption of AXMEDIS distribution mechanism



## AXMEDIS Distribution Scenarios



AXMEDIS for B2B Cooperative Content Production





## Distribution via Web

■ Aim:

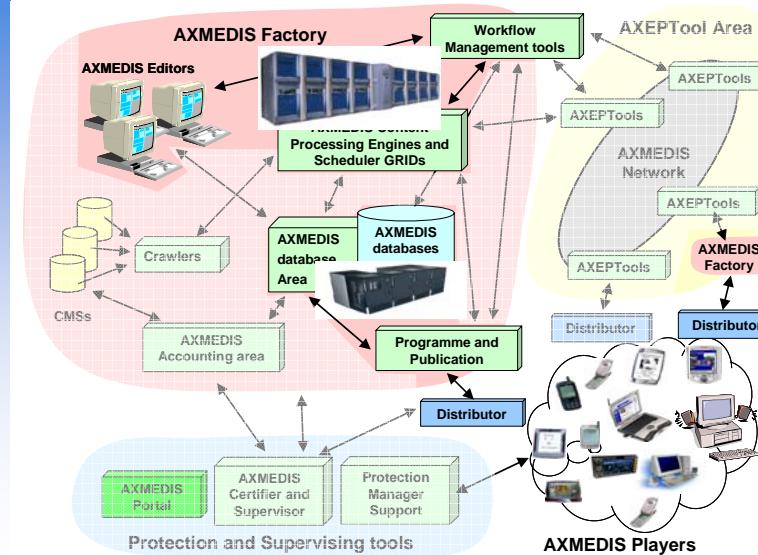
- ▶ demonstrate some real scenarios where the AXMEDIS framework could be applied for content distribution via web
  - Search content in the AXMEDIS P2P Network (business network)
  - Import acquired contents in the distributor catalogue
  - Distribute content via web

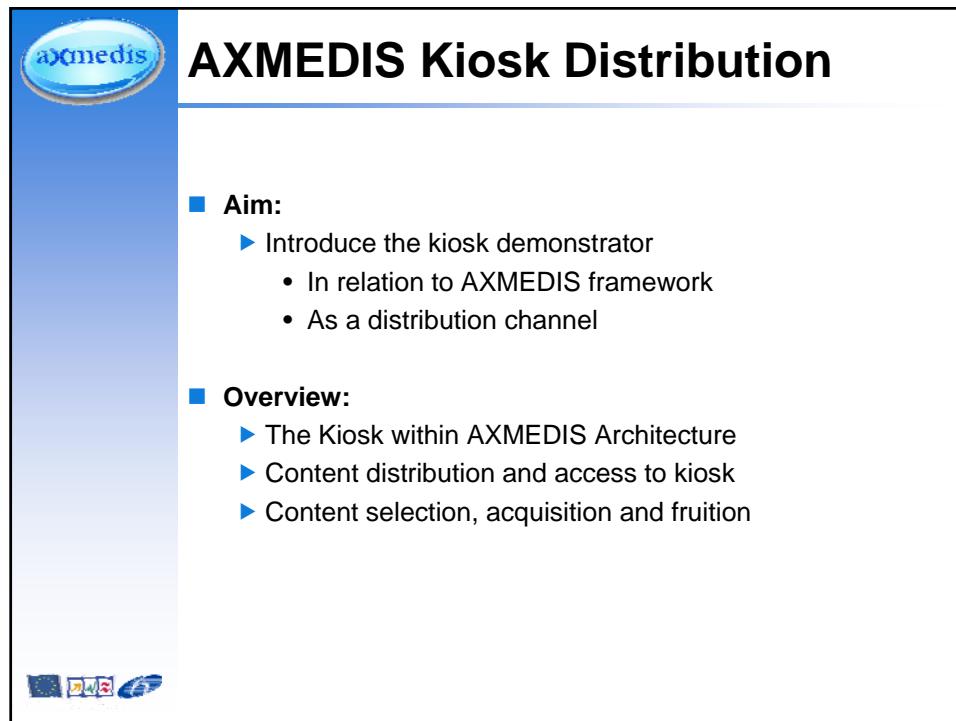
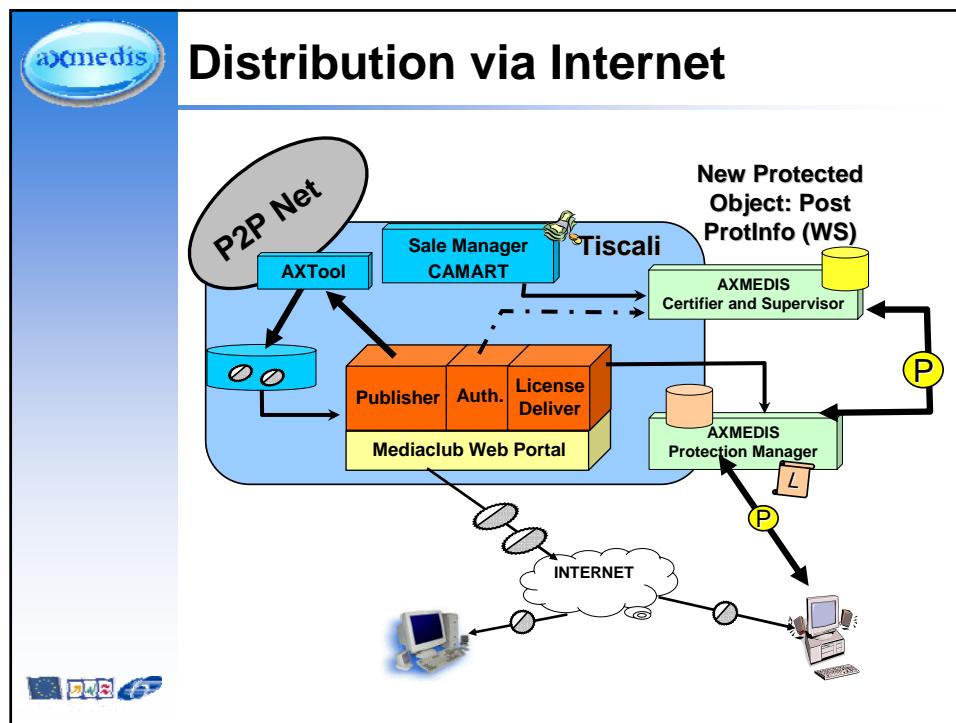
■ Overview:

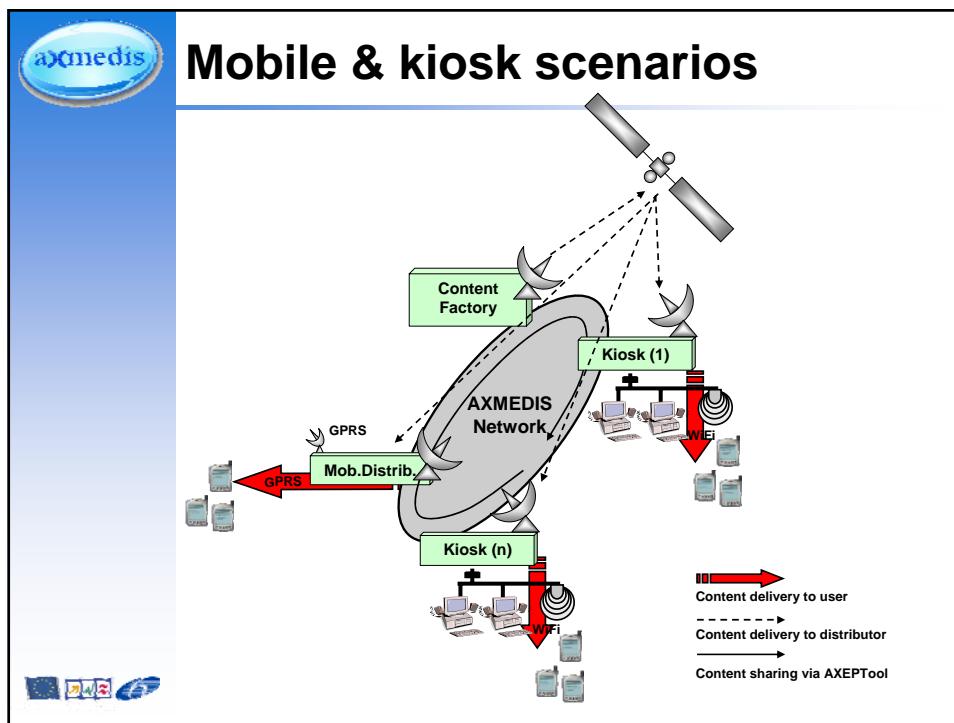
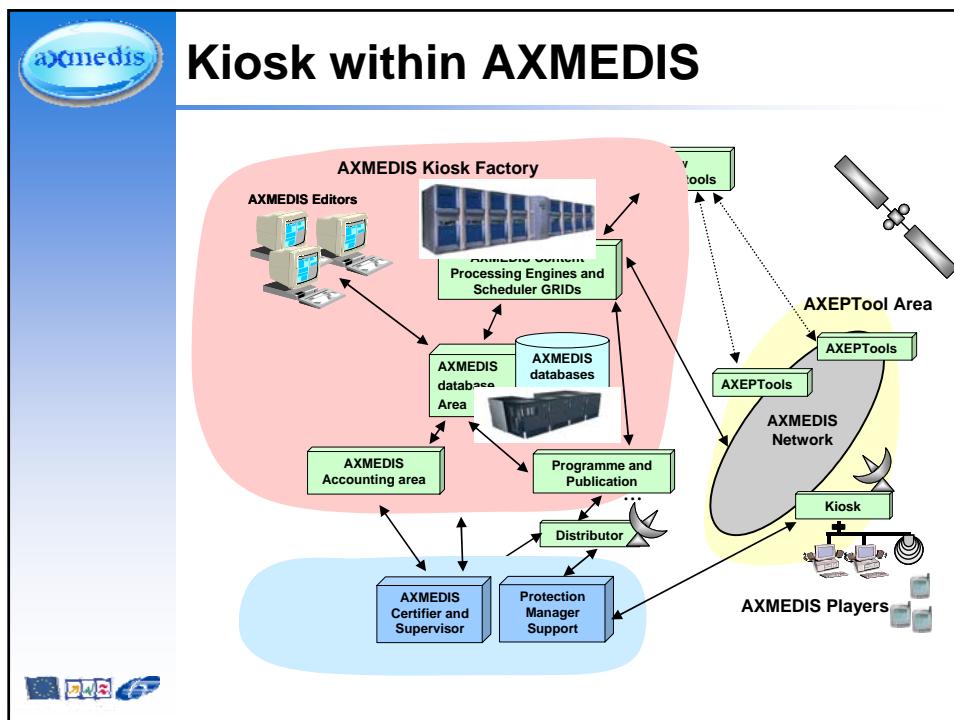
- ▶ Distributor interfaces within the AXMEDIS framework
- ▶ Tools and functionalities
- ▶ Search and retrieve content from the P2P network
- ▶ Publish content in the Distributor catalogue
- ▶ End User content license acquisition process



## Web Distribution & AXMEDIS

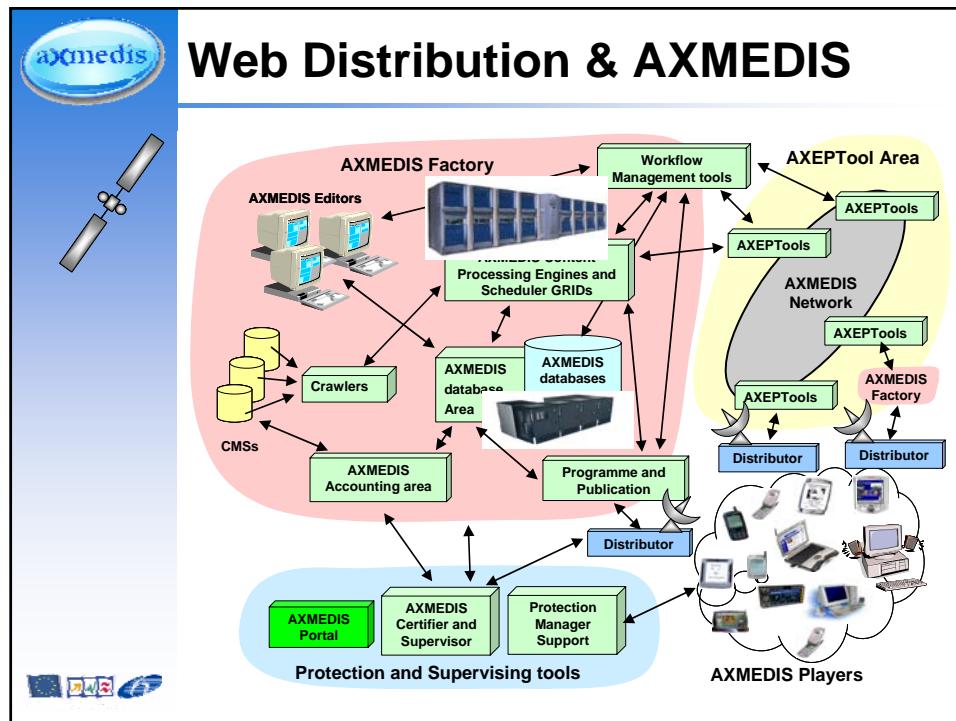


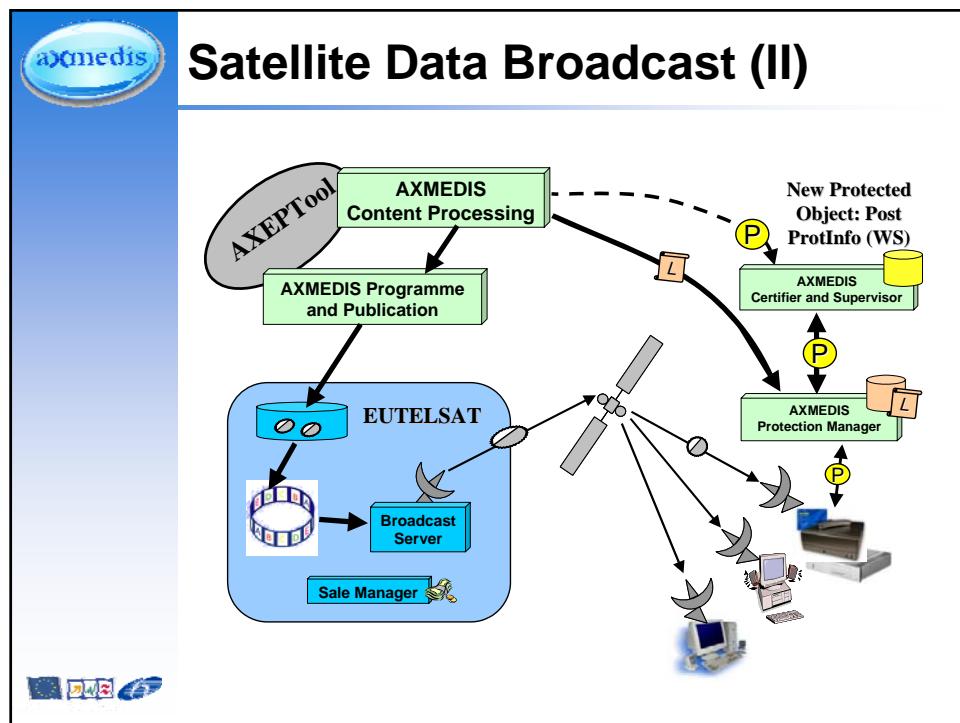
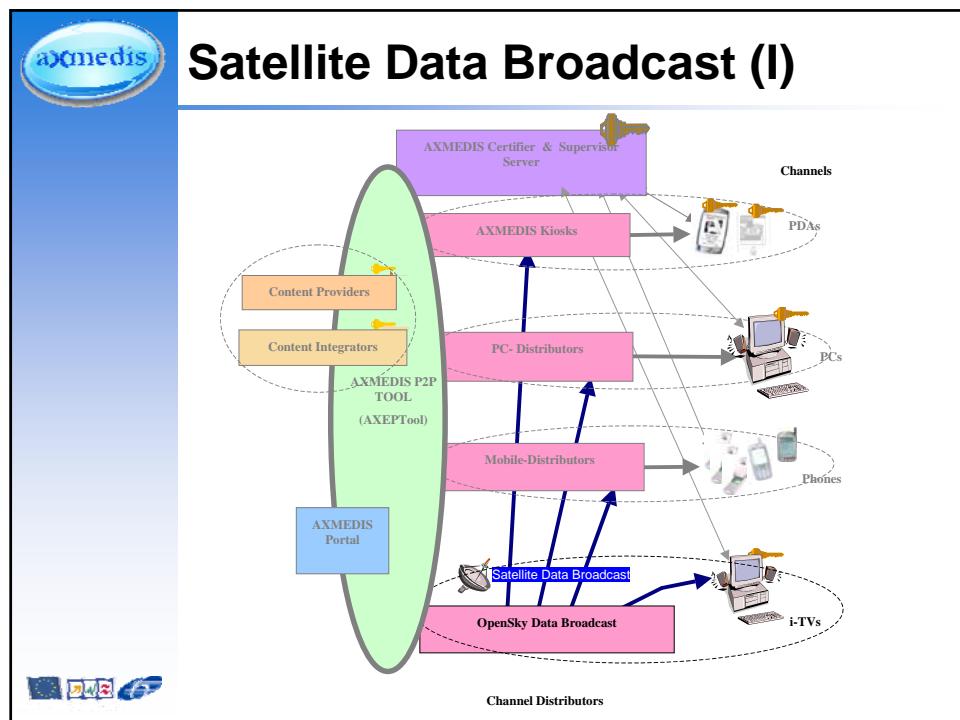




**Satellite Distribution**

- **Aim:**
  - ▶ Introduce the Satellite Data Broadcast (SDB) Demonstrator
    - In relation to AXMEDIS framework
    - As a distribution channel
  
- **Overview:**
  - ▶ The SDB within AXMEDIS Architecture
  - ▶ SDB overall use-case
  - ▶ Content production and distribution in the SDB system
    - Server side
    - Client side





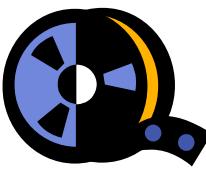
## Demos

- **MediaClub**
  - ▶ MediaClub within AXMEDIS Architecture
  - ▶ Tools and functionalities
  - ▶ Search and retrieve content from the P2P network
  - ▶ Publish content in the catalogue
  - ▶ End User content license acquisition process
- **Kiosk**
  - ▶ The Kiosk within AXMEDIS Architecture
  - ▶ Catalogue production at the kiosk factory
  - ▶ Content distribution and access to kiosk
  - ▶ Content selection, acquisition and fruition
- **Satellite Distribution**
  - ▶ Satellite Distribution within AXMEDIS Architecture
  - ▶ Tools and functionalities
  - ▶ Content distribution interfaced with the P&P
  - ▶ Content selection, acquisition and fruition for User

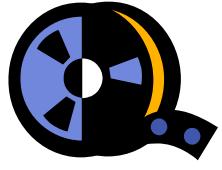




## Distribution via Internet



- **Server side**



- **Client side**





## Kiosk Distribution



- From factory to client





## Mobile Distribution



- Server side

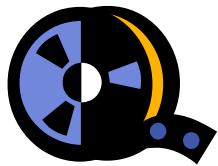


- Client side





## Satellite Distribution



- From factory to client



## References – General

- [axmedis-general-tutorial-v3-6.pdf](#)
- [AXMEDIS-DE1-7-1-Project-Presentation-v1-4.pdf](#)
- [axmedis-de5-1-2-1-axmedis-for-all-v2-7.pdf](#)
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- [axmedis-de4-6-1-2-content-distribution-via-internet-1st-upd-v1-5.pdf](#)
- [axmedis-de4-7-1-2-content-distribution-toward-mobiles-1st-upd-v1-4.pdf](#)
- [axmedis-de4-8-1-2-content-distribution-via-satellite-data-broadcast-1st-upd-v1-1.pdf](#)
- [axmedis-de9-1-3-first-prototype-for-cms-integration-and-feedback-v1-2.pdf](#)
- [axmedis-de9-2-3-first-proto-of-autom-cont-prod-and-form-into-cms-v1-1.pdf](#)
- [axmedis-de9-3-3-first-prot-content-distribution-via-satellite-data-broadcast-v1-2.pdf](#)
- [axmedis-de9-4-3-first-prototype-of-content-production-and-distribution-on-demand-for-pc-v2-1.pdf](#)
- [axmedis-de9-5-3-first-proto-of-cont-prod-and-dist-on-demand-for-mobile-v1-1.pdf](#)
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- [axmedis-de3-1-2-2-11-spec-of-ax-progr-andpub-tool-v1-6.pdf](#)
- [axmedis-de3-1-2-2-12-spec-of-ax-workflow-tools-v1-6.pdf](#)
- [axmedis-de3-1-2-2-13-spec-of-axcs-and-networks-v1-5.pdf](#)
- [axmedis-de3-1-2-2-14-spec-of-protection-support-uph-v1-9.pdf](#)
- [axmedis-de3-1-2-2-15-spec-of-ax-accounting-and-reporting-v1-6.pdf](#)
- [axmedis-de3-1-2-2-2-spec-of-ax-cmd-man-upb-v1-6.pdf](#)
- [axmedis-de3-1-2-2-3-spec-of-axom-and-protproc-upb-v2-0.pdf](#)
- [axmedis-de3-1-2-2-4-spec-of-ax-editors-and-viewers-upb-v2-1.pdf](#)
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- [axmedis-de8-3-1-2-multilingualguidelinesandtechnicalsolutionsv1-1.pdf](#)
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- DMP Digital Media Project, [www.chiariglione.org](http://www.chiariglione.org)
- EITO 2005 European Information Technology Observation: <http://www.eito.com/index-eito.html>
- ODRL <http://odrl.net/>
- OMA [www.openmobilealliance.org](http://www.openmobilealliance.org)
- MI3P, Music Industry Integrated Identifier Project <http://www.mi3p-standard.org/>



## Contact Information

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