

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

www.axmedis.org

IST-2-511299

## AXMEDIS Tutorial on Distribution

version 1.1  
Last updated: 30 November 2005

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

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## Overview of this Tutorial

- **Preface**
  - ◆ Purpose & Schema
- **Part I: Main Integration Scenarios**
  - ➔ AXMEDIS Database (EXITECH)
  - ➔ Query Support (EXITECH)
  - ➔ Certifier and Supervisor (DSI)
  - ➔ Accounting and Reporting (EXITECH)
- **Part II: Content Distribution and Supporting Tools**
  - ➔ AXEPTTool (CRS4)
  - ➔ Integrating B2B with the AXMEDIS Factory (CRS4, EXITECH)
  - ➔ Programme and Publication (UNIVLEEDS)
  - ➔ Query On-Demand (FHIGD)
- **Part III: Distribution examples**
  - ➔ Distribution to PC (TISCALI, SEJER)
  - ➔ Distribution via Kiosks (ILABS)
  - ➔ Distribution via Satellite Data Broadcast (EUTELSAT)
- **References, Further information and contact**

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## Preface: A very brief background of AXMEDIS

- **Currently, the digital-content market is growing very fast and it needs solutions of production, protection and distribution of massive content collections for accessing new markets and defining/trial new business solutions.**
- **Major limitations:**
  - ◆ Convergence of the media, interoperability of content
  - ◆ DRM applications and introduction in several distribution channel
  - ◆ Massive processing of content processing and distribution
  - ◆ Etc.
- **These are a real challenge for many industries that are discovering the complexity of managing large digital content factories and distribution chains.**
- **Content producers, providers, aggregators and distributors constantly need to adopt innovative means.**

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## Purpose of this Tutorial


- **This Tutorial is the last section of the first series**
  - ◆ Distributions
  - ◆ Links between content processing and distribution
- **It provides details on**
  - ◆ What is "AXMEDIS database"?
  - ◆ Which is "Certifier and Supervisor"?
  - ◆ What is "Accounting and Reporting"?
  - ◆ What is "AXEPTTool"?
  - ◆ How to integrate B2B with the AXMEDIS Factory?
  - ◆ What is AXMEDIS "Programme and Publication"?
  - ◆ What and how to use "On-Demand"?
  - ◆ All the main purposes, functionalities and how to use them...
  - ◆ ...
- **Please feel free to be "interactive" and please do not hesitate to raise any questions**

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## Schema of the Tutorial and Purpose

- **Duration: ~3 hours**
- **Who should attend this Tutorial:**
  - ◆ Everyone interested to know more about AXMEDIS solution and tools – particularly on the DISTRIBUTION aspects
  - ◆ **Business Managers** interested in assessing if AXMEDIS may be suitable the specific businesses, to learn the advantages of the AXMEDIS Framework, ...
  - ◆ **Technical Managers** interested to know more about
    - ➔ AXMEDIS technology on Content Distribution, Programme and Publication, etc...
  - ◆ **Research Managers** interested assessing or adapting AXMEDIS framework for
    - ➔ testing and developing new solutions, adding new algorithms, functionalities, etc.,
    - ➔ Promoting and disseminating new solutions using the framework...

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## AXMEDIS Tutorial on Distribution (Part I)

version 1.1  
Last updated: 29 November 2005  
URL: <http://www.axmedis.org>

Fabrizio Fioravanti (EXITECH), Tommaso Martini (DSI), Sauro Chellini (DSI)

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## Overview of this Tutorial

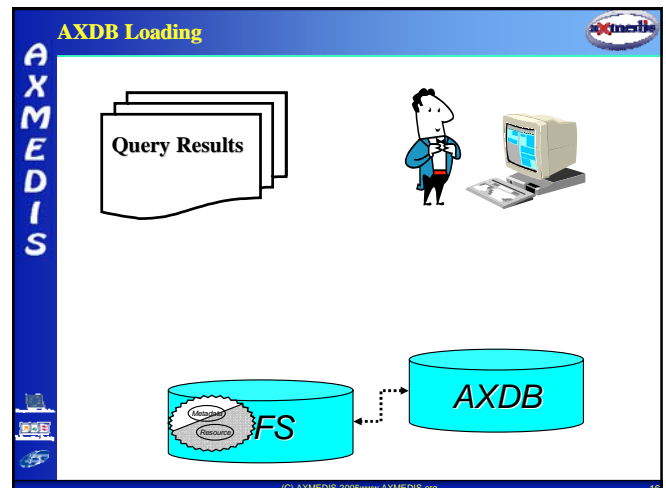
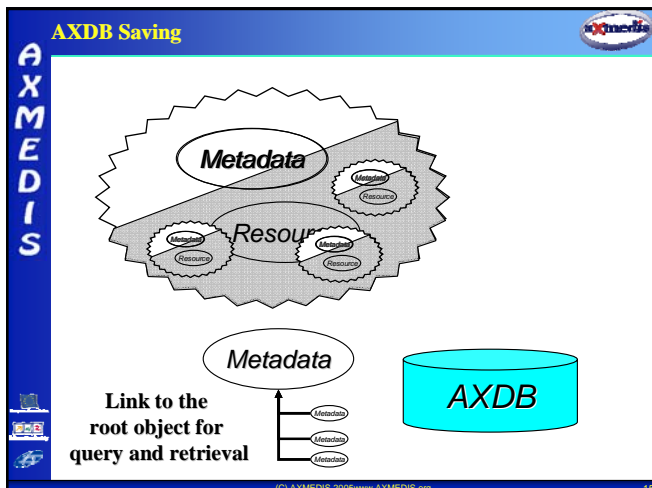
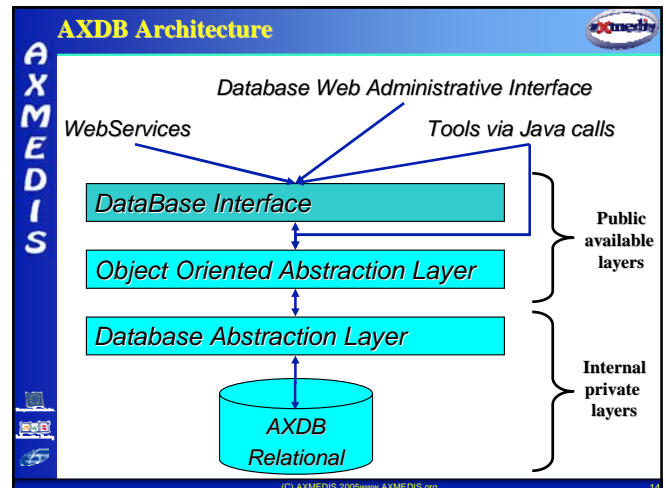
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  - ➔ Accounting and Reporting (Fioravanti - EXITECH)
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  - ➔ Distribution to PC (TISCALI, SEJER)
  - ➔ Distribution via Kiosks (ILABS)
  - ➔ Distribution via Satellite Data Broadcast (EUTELSAT)
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### AXMEDIS AXDB facts

- AXDB manages data that are strategically important for your business
- General and standard metadata set (as Dublin Core) are addressed
- You choose the metadata that are relevant for your business that are automatically indexed for each object you store
- Allows the management of multilingual translation for each metadata you use simplifying and improving object irretrievability

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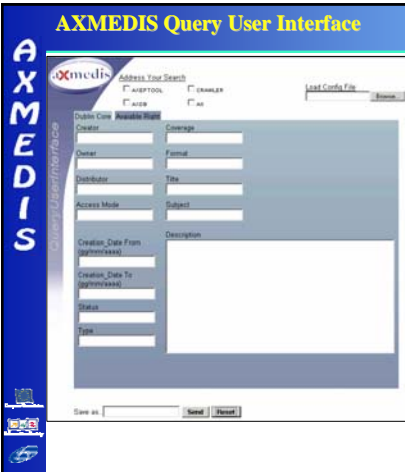
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### AXMEDIS Query Support Facts

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

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### AXMEDIS Query User Interface

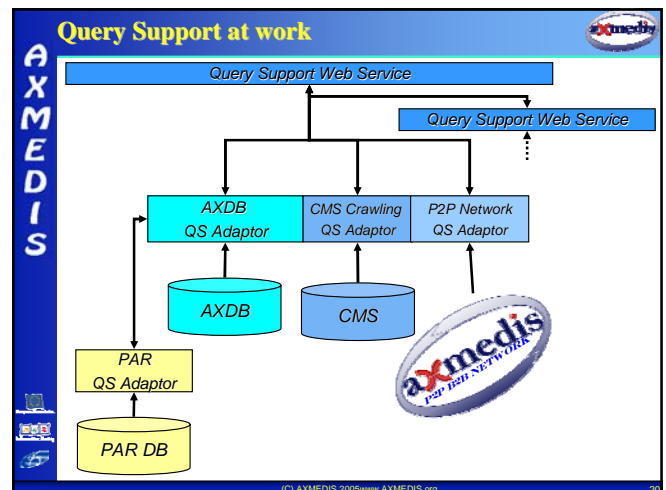


**Heading:** contains a multiple choice checkbox to address the AXMEDIS query on different locations.

**Form:** contains:  
**Dublin core** Metadata, in addition with other general metadata and **Available Rights** with a sub set of the MPEG 21 Metadata.

**Actions:** contains the buttons thought with is possible to reset all the values filled in the form, or to submit the query.

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### Result of the Query

- **Objects:**
  - ◆ Object IDs
  - ◆ How to recover objects (from P2P network, and so on)
- **Possibility to gather information related to rights:**
  - ◆ What Can I do with the object
  - ◆ Where can I use the object
  - ◆ Who can distribute the object
- **Metadata related to the objects in order to perform a better selection**
  - ◆ Length
  - ◆ Creators
  - ◆ Bit rate

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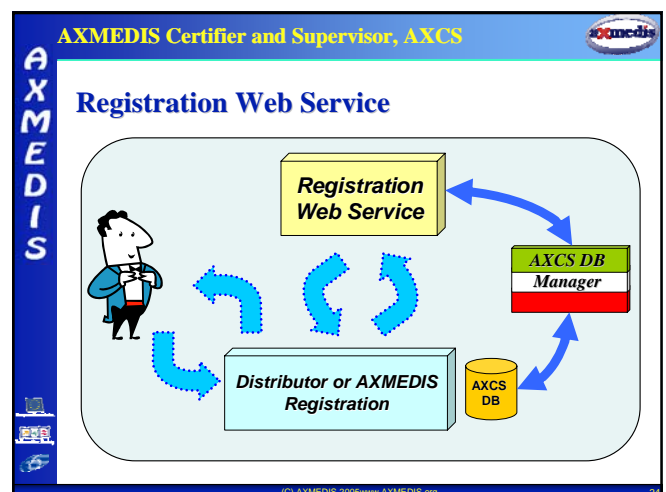
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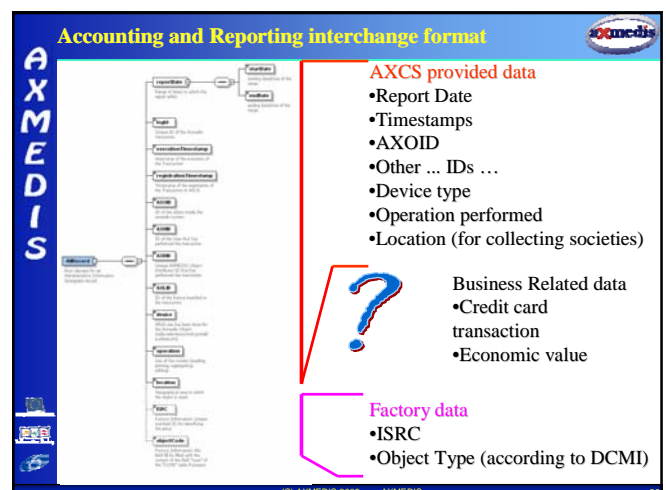
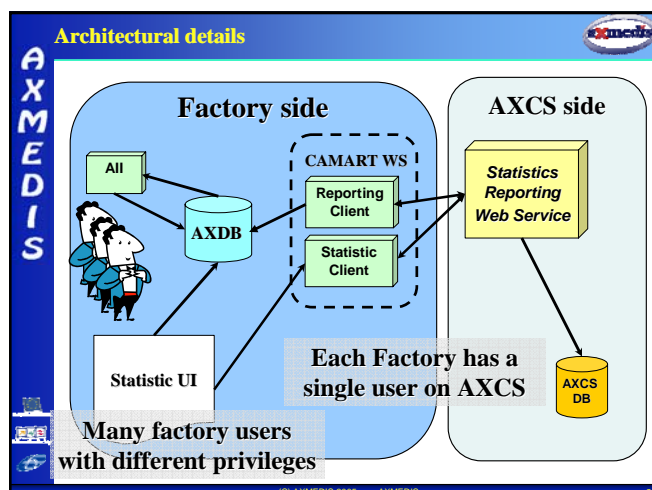
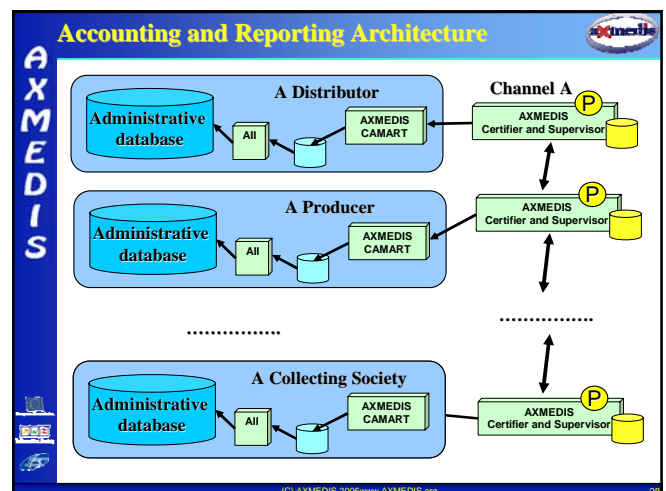
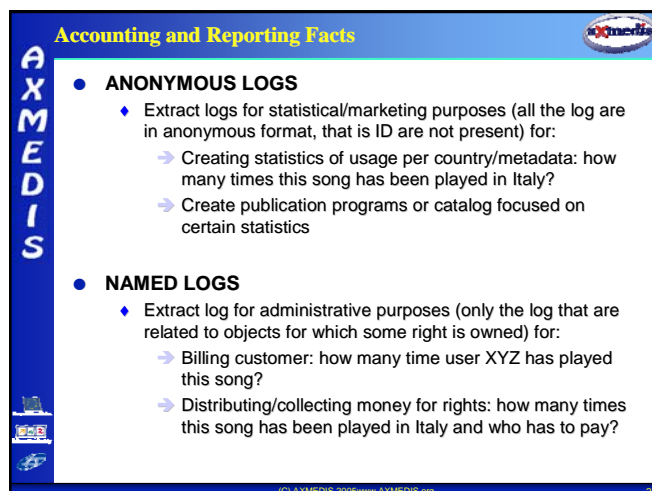
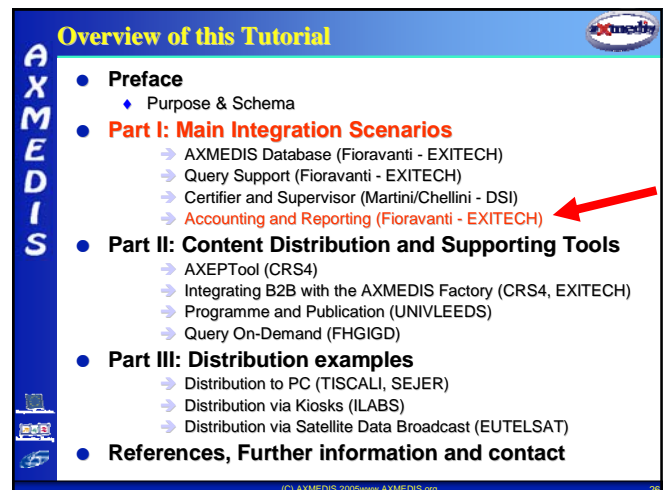
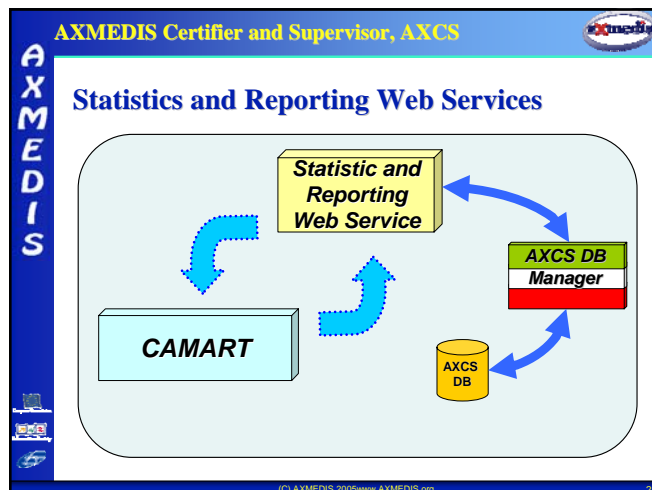
### AXMEDIS Certifier and Supervisor facts

- **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

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### Demo: AXMEDIS Distribution Tutorial, Part I

- Query Support**
  - make a query
  - select the results
- Registering AXMEDIS Users**
  - A General Portal
- CAMART for statistics**
  - select log for different purposes

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### AXMEDIS Tutorial on Distribution (Part II)

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Davide Carboni (CRS4), Martin Schmucker, Peter Ebinger (FHGIGD),  
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### AXMEDIS General Architecture

AXMEDIS for B2B Cooperative Content Production

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### Distributing is good, Sharing is even better!

- reduce costs:**
  - When CPU of clients are IDLE.
    - Share this resource. It is almost free for you.
  - When your disk space is unused.
    - Share this resource. It is almost free for you.
  - When your bandwidth is unused.
    - Share this resource. It is almost free for you
  - When your content is ready to be published
    - Share this resource and be PAID for that. That's your business

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### What is the AXEPTTool?

- The AXEPTTool is a core library and a *daemon* that can be used to accept connections, share, search and load content over a network using P2P protocols.
  - Discover other participant using a Web cache
  - Accept incoming connections from other peers to form a network topology
  - Publish objects
  - Propagate AXMEDIS queries in the network and collect AXMEDIS query results
  - Download objects with resume/suspend mechanism
  - Produce a RSS (Rich Site Summary (RSS 0.91); RDF Site Summary (RSS 0.9 and 1.0) ; Really Simple Syndication (RSS 2.0)) feed for each object published
    - As a XML approach to notify/advertise new objects
- AXEPTTool uses AXMEDIS protection model to distribute/share AXMEDIS objects in a safe manner

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### Check point: AXEPTool ... (CRS4)

- **P2P**
  - ◆ Understand the rationales behind a P2P tool for discovering, searching, sharing delivering and updating objects
- **AXEPTool**
  - ◆ Both a client and a server
  - ◆ software implementing P2P protocols

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### Integrating B2B with the AXMEDIS Factory

- **Building on top of the AXEPTool**
- **Integration of AXEPTool P2P services in the factory has many folds:**
  - ◆ Via Web Services
  - ◆ Via JavaScript and XML rules
  - ◆ Embedding the Java classes in a third-party application
  - ◆ Writing a new implementation of the protocol in a different language (for instance C++ or python)

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### Rules and Scripts

**publication rule**

AXMEDIS Data (private contents)

Publish all since last 7 days except Artist "foo" Schedule now. Repeat weekly

AXMEDIS DB OUT (shared contents)

AXMEDIS P2P Network

Objects are created continuously

Every 7 days the objects matching the rule are published (the green ones)

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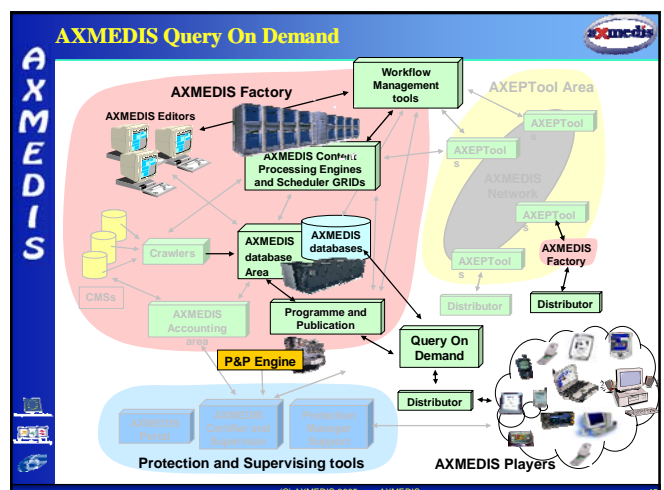
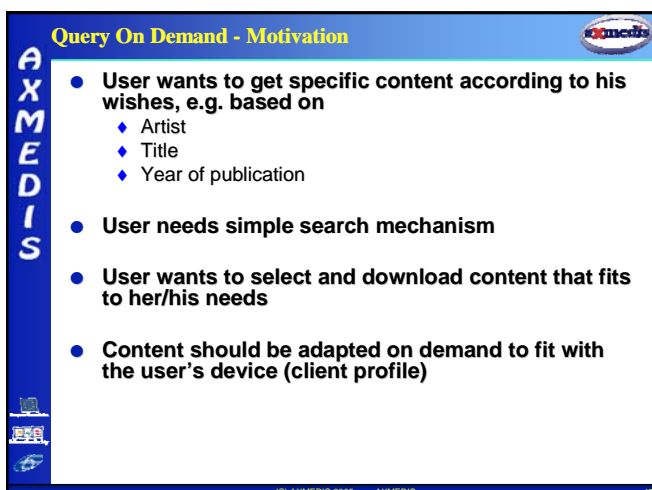
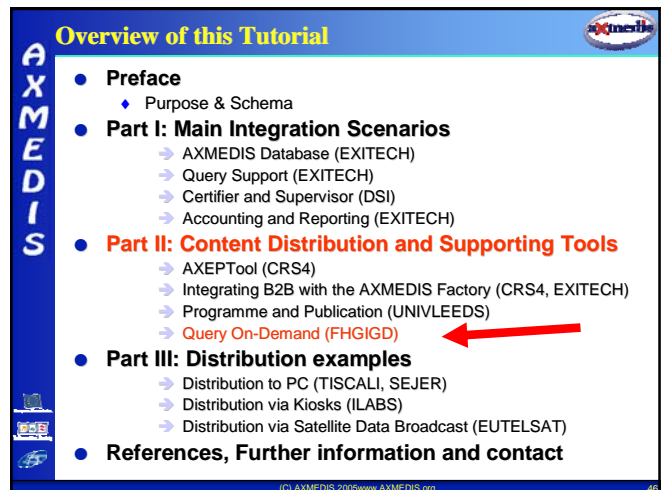
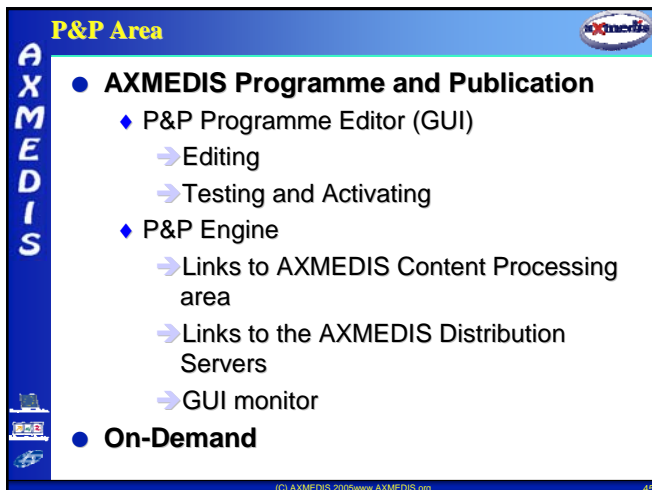
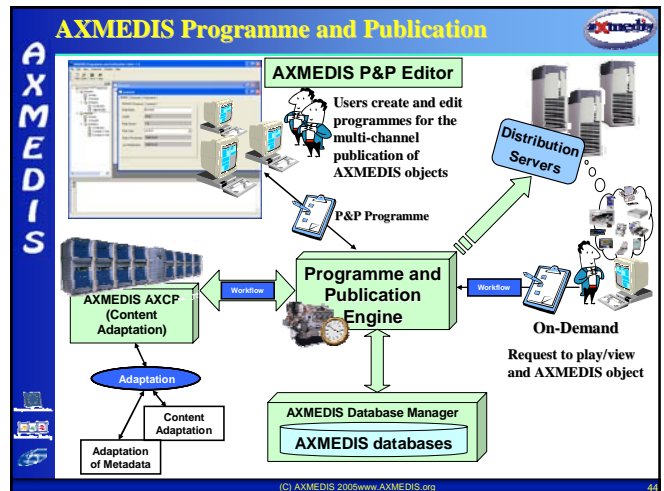
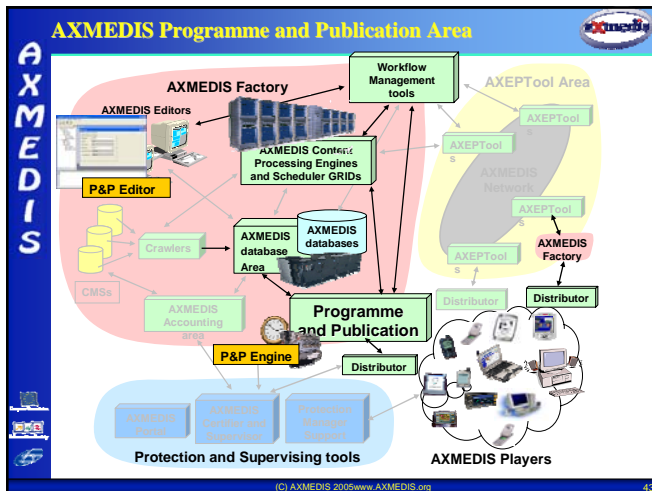
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### Introduction to Programme and Publication (P&P)

- **Aim:**
  - ◆ Operations and applications of the P&P area
  - ➔ AXMEDIS P&P programmes: create, edit, test, activate
  - ➔ multi-channel distributions
- **Overview:**
  - ◆ P&P Area within the AXMEDIS architecture
  - ◆ Tools and functionalities
  - ◆ P&P Editor
  - ◆ Create and edit a P&P programme
  - ◆ "Test", "Activate" or "Stop" a P&P programme
  - ◆ AXMEDIS P&P Engine
  - ◆ "On-Demand" requests

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### Query On Demand – Procedure

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

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### Demo: AXMEDIS Distribution Tutorial, Part 2


- **Programme and Publication (P&P)**
  - ♦ P&P Editor
    - Create and edit a P&P programme
  - ♦ P&P Engine
    - test and activate a P&P Programme
    - On Demand
- **On Demand**
  - ♦ Web interface
  - ♦ Make a query
  - ♦ Select a specific result

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### Check point: P&P Area

- **P&P Editor**
  - ♦ Create and edit a P&P Programme
  - ♦ Test a programme (Quick or Full) trial and understand the difference
- **Activate or terminate a selected P&P programme to deliver objects**
- **Understand the processes behind the scene**
- **On Demand**

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Automating Production of Cross Media Content for Multi-channel Distribution  
www.axmedis.org IST-2-511299

## AXMEDIS Tutorial on Distribution (Part III)

version 0.7  
Last updated: 30 November 2005

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

David Fuschi (ILABS), Domenico Dato, Giovanni Nateri (TISCALI), Roberta Campo (EUTELSAT)

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### Overview of this Tutorial

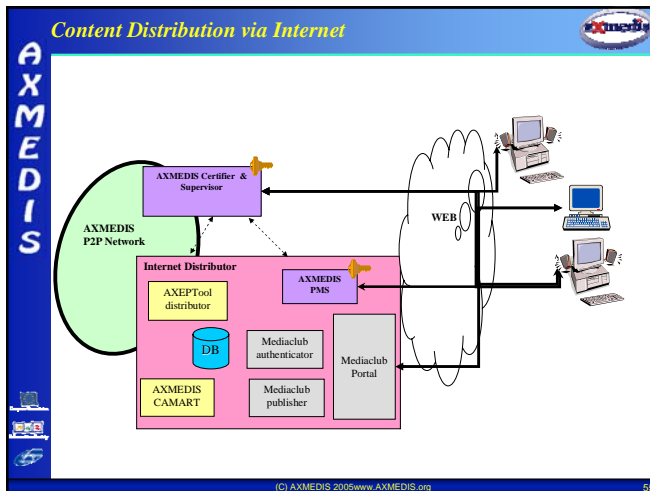
- **Preface**
  - ♦ Purpose & Schema
- **Part I: Main Integration Scenarios**
  - AXMEDIS Database (EXITECH)
  - Query Support (EXITECH)
  - Certifier and Supervisor (DSI)
  - Accounting and Reporting (EXITECH)
- **Part II: Content Distribution and Supporting Tools**
  - AXEPTool (CRS4)
  - Integrating B2B with the AXMEDIS Factory (CRS4, EXITECH)
  - Programme and Publication (UNIVLEEDS)
  - Query On-Demand (FHGIGD)
- **Part III: Distribution examples**
  - Distribution to PC (TISCALI, SEJER)
  - Distribution via Kiosks (ILABS)
  - Distribution via Satellite Data Broadcast (EUTELSAT)
- **References, Further information and contact**

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### Introduction to Distribution Content 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

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### Content Distribution via Internet

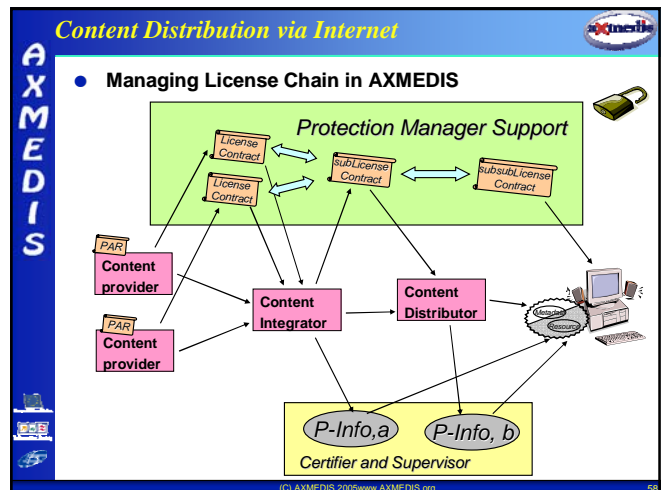
- MediaClub Manager interacts with AXMEDIS world in several ways.
  - AXEPTTool: Configures and executes the queries to search and to download new AXMEDIS Object
  - MediaClub App: Chooses the AXMEDIS Objects to import in MediaClub System and extract the related metadata;
  - Xaura2 (feed import engine): upload AXMEDIS Objects and metadata in the distributor CMS;
  - CAMART: Makes the reporting and statistical queries on CAMART system and extracts the information related to the usage of AXMEDIS Objects.

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### Content Distribution via Internet

- MediaClub users interact with Media Club in several ways through different tools.
  - MediaClub shop
    - Into MediaClub Shop the user can:
      - browse the media catalogue, following links proposed by Content Managers
      - search for a specific media content, by inserting metadata details into the provided search tool
      - view trailers and read content description in order to decide about buying a media content
  - MediaClub Account Care tools
    - Using this tool the user can:
      - manage its account details and preferences
      - manage its portfolio:
        - charge its portfolio
        - buy directly a media content
  - AXMEDIS Player
    - Using AXPlayer the user can:
      - get licences for bought contents (through special MediaClub pages)
      - play bought contents

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### Overview of this Tutorial

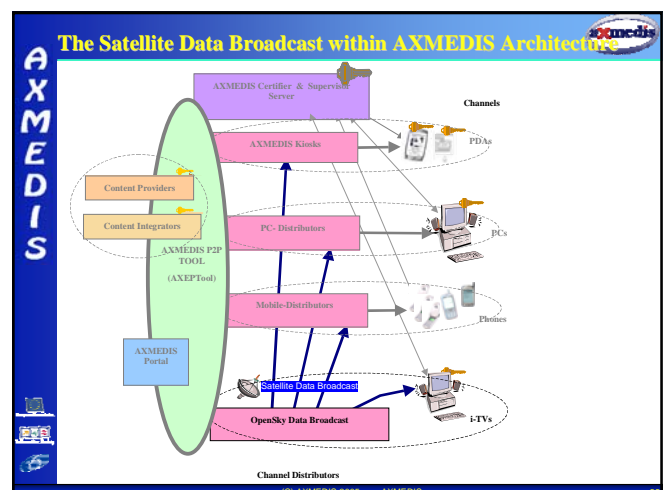
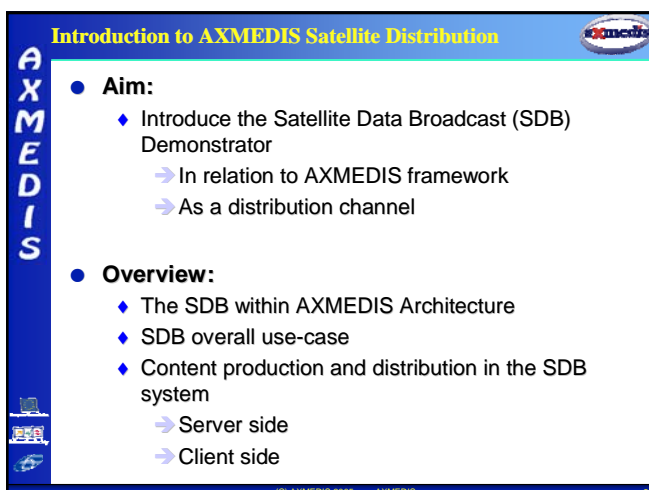
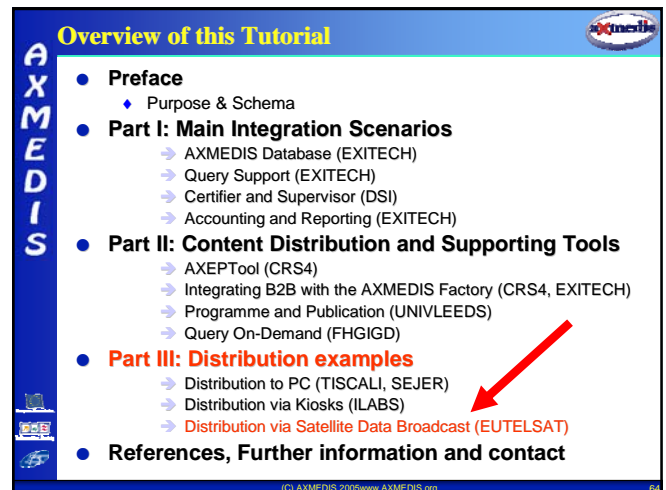
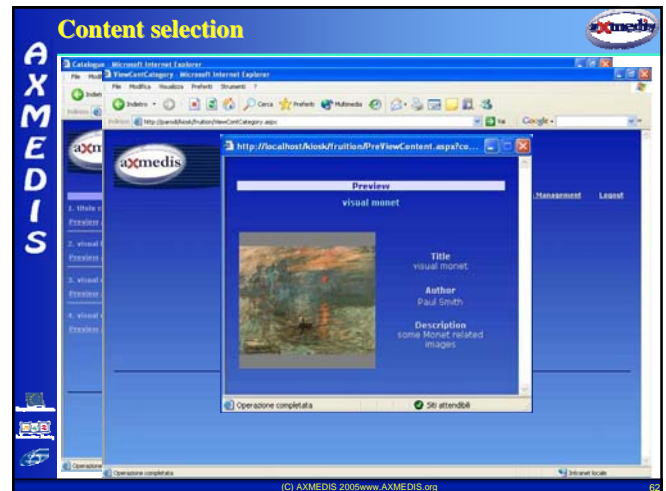
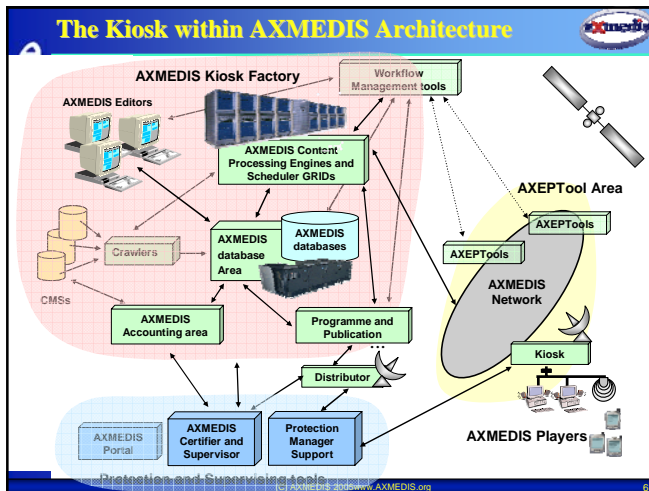
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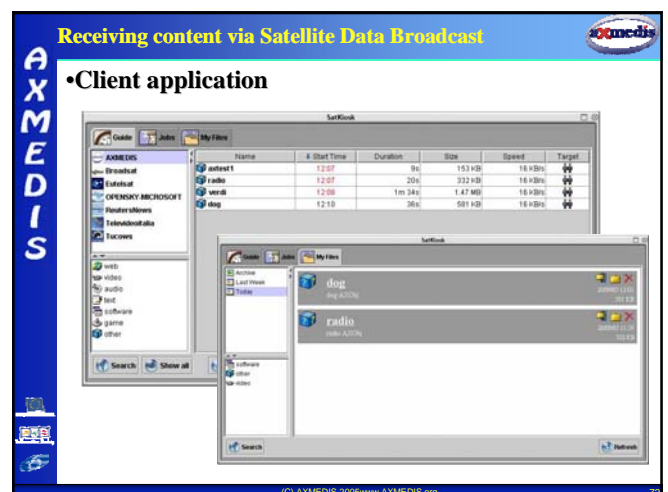
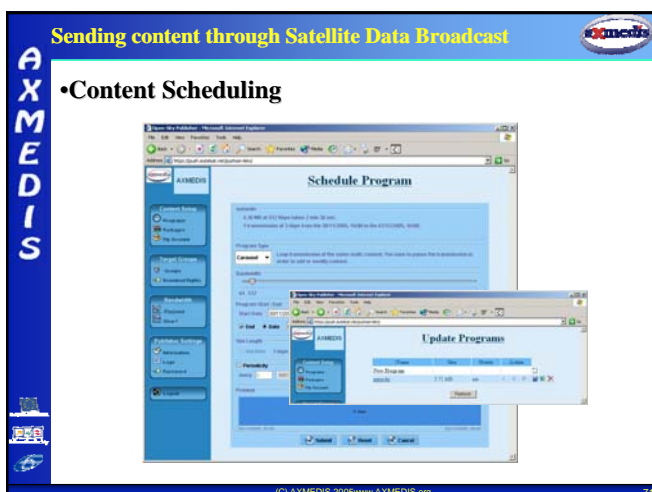
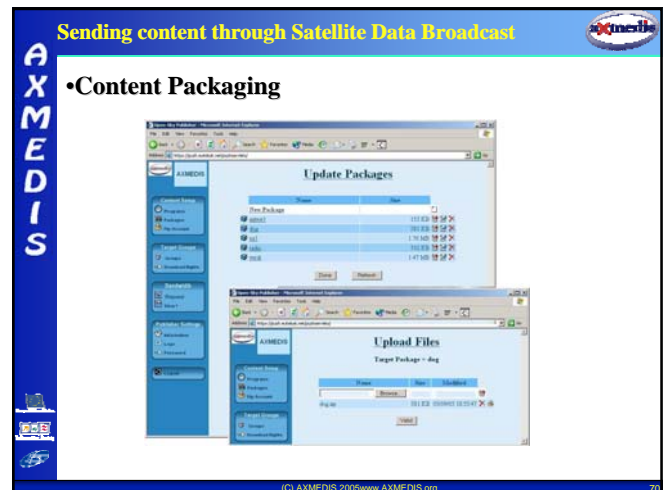
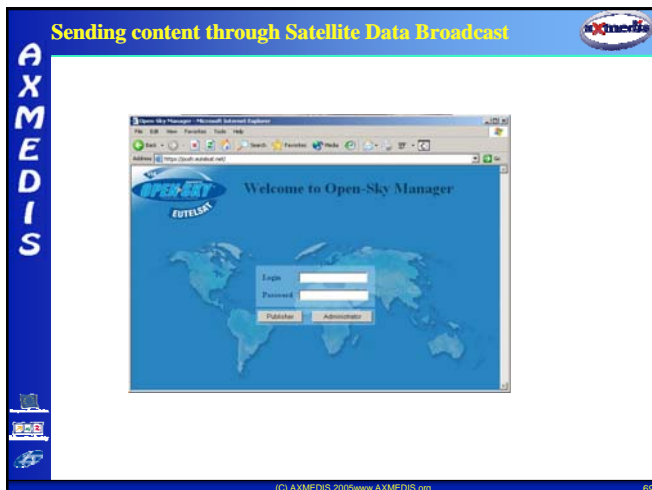
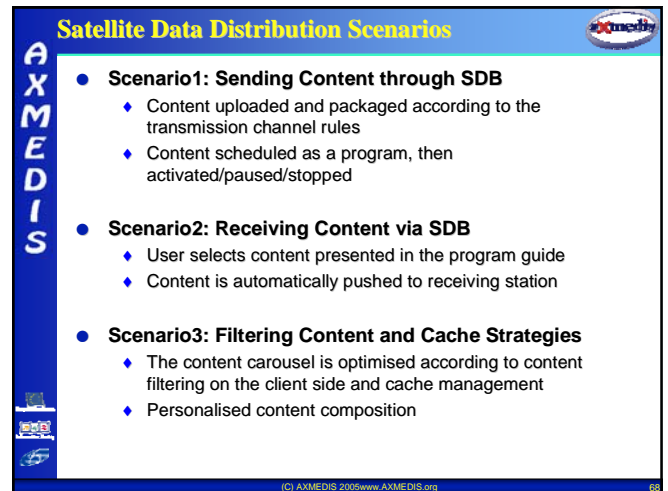
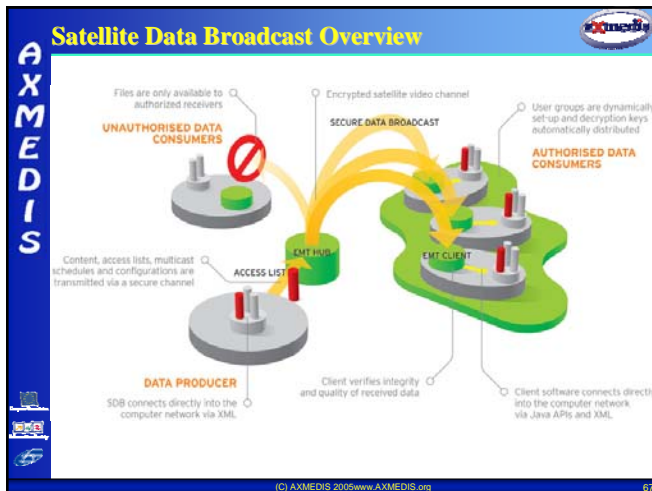
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### Introduction to AXMEDIS Kiosk Distribution

- Aim:
  - Introduce the kiosk demonstrator
    - In relation to AXMEDIS framework
    - As a distribution channel
- Overview:
  - The Kiosk within AXMEDIS Architecture
  - Content distribution and access to kiosk
  - Content selection, acquisition and fruition

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### Demo: AXMEDIS Distribution Tutorial, Part 3

- **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
  - ◆ Kiosk administration

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- **References, Further information and Contact**

### Publicly Accessible General AXMEDIS Documents

- **DE2.1.1 (two parts, A and B) User Requirements and use cases**
  - ◆ A) User Requirements
  - ◆ B) Use Cases
- **DE2.2.1 -- Test Cases and Content Description**
- **Reports on Content**
  - **DE3.1.3 -- AXMEDIS Content Aspects Specification**
  - **DE8.1.1 -- Content for Test Cases and Validation**
  - **DE8.2.1 -- Content Selection Guidelines**
  - **DE8.3.1 -- Multilingual guidelines and technical solutions**
  - **DE8.4.1 -- AXMEDIS Editorial Format Guidelines and Basic Examples**

### Publicly Accessible AXMEDIS Framework Documents


- **DE3.1.3 -- Framework and tools Specification, 10 parts**
  - ◆ A) AXMEDIS General aspect and Model
  - ◆ B) AXMEDIS Viewers and Players
  - ◆ C) AXMEDIS content processing area, GRID
  - ◆ D) AXMEDIS Fingerprint and Descriptors
  - ◆ E) AXMEDIS Database and Content gathering
  - ◆ F) AXMEDIS AXEPTools P2P
  - ◆ G) AXMEDIS Workflow
  - ◆ H) AXMEDIS Protection and accounting
  - ◆ I) AXMEDIS Draft Distribution and Portal
  - ◆ J) AXMEDIS Definitions and Terminology
- **DE5.1.1 -- AXMEDIS Framework Infrastructure**
- **DE5.2.1 -- AXMEDIS Framework Validation and Integration**

### Publicly Accessible AXMEDIS Framework Documents


- **Early Reports on Basic Technologies**
  - **DE4.1.1 - Content Modelling and managing**
  - **DE4.2.1 - Content indexing, monitoring and querying**
  - **DE4.3.1 - Content Composition and formatting**
  - **DE4.4.1 - Content sharing and production on P2P**
  - **DE4.5.1 - Content Protection and Supervision**
  - **DE4.6.1 - Content Distribution via Internet**
  - **DE4.7.1 - Content Distribution toward mobiles**
  - **DE4.8.1 - Content Distribution via satellite data broadcast, the push optimisation and the on demand problem**
  - **DE4.9.1 - The Usability issues for the AXMEDIS production tools**

### References


- AXMEDIS: [www.axmedis.org](http://www.axmedis.org)
- CRF: Content Reference Forum: <http://www.crforum.org/>
- DMP: Digital Media Project, [www.chiariglione.org](http://www.chiariglione.org)
- EITO 2005: European Information Technology Observation 2005: <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/>
- MPEG, MPEG-21: [www.chiariglione.org](http://www.chiariglione.org)
- MUSICNETWORK: [www.interactivemusicnetwork.org](http://www.interactivemusicnetwork.org)
- WEDELMUSIC: [www.wedelmusic.org](http://www.wedelmusic.org)
- Microsoft Windows Media: <http://www.microsoft.com/windows/windowsmedia/default.aspx>



# ●Comments, Acknowledgements & Contact Information




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## Other AXMEDIS courses

- **Hope you have enjoyed this Tutorial**
  - ◆ For additional information please refer to AXMEDIS contact person or access to the AXMEDIS web portal and/or CD for further documentations and reports from which this Tutorial has been produced.
  - ◆ Updated reports are being produced annually.
  - ◆ By affiliating with AXMEDIS and participating the AXMEDIS events and activities, you will be kept up to date with the latest progress and development.
- **Additional AXMEDIS courses include:**
  - ◆ AXMEDIS Detailed Overview, 6 hours, full day course
  - ◆ AXMEDIS Content Production area, demonstration and training
  - ◆ AXMEDIS Content Distribution area, demonstration and training
  - ◆ They are available online at the AXMEDIS web portal




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- You can be affiliated with AXMEDIS. The affiliation provides access to a large amount of information, knowledge, and source code, related to the AXMEDIS Framework.
- If you are interested in the affiliation, please contact P. Nesi by email ([nesi@dsi.unifi.it](mailto:nesi@dsi.unifi.it)). The benefits of the affiliation include the possibility of using the AXMEDIS specification and technology for your business.
- **You are invited to**
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  - ◆ attend AXMEDIS public meetings, for further information see [www.axmedis.org](http://www.axmedis.org) or contact P. Nesi at [nesi@dsi.unifi.it](mailto:nesi@dsi.unifi.it)



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## Contact Information

- **If you like to know more about the AXMEDIS framework and other AXMEDIS technologies and functionalities please do not hesitate to contact the project coordinator:**
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