

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

www.axmedis.org

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AXMEDIS Tutorial on Distribution

version 1.2
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Kia Ng, Royce Neagle, Bee Ong (UNIVLEEDS), Fabrizio Fioravanti (EXITECH),
Davide Carboni (CRS4), Martin Schmucker, Peter Ebinger (FHGIGD),
Tommaso Martini, Sauro Chellini, Sauro Nesi (DSI),
David Fuschi (ILABS), Domenico Dato, Giovanni Nateri (TISCALI),
Roberta Campo (EUTELSAT)


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- If you are interested in the affiliation, please contact P. Nesi by email (nesi@dsi.unifi.it). The benefits of the affiliation include the possibility of using the AXMEDIS specification and technology for your business.
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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

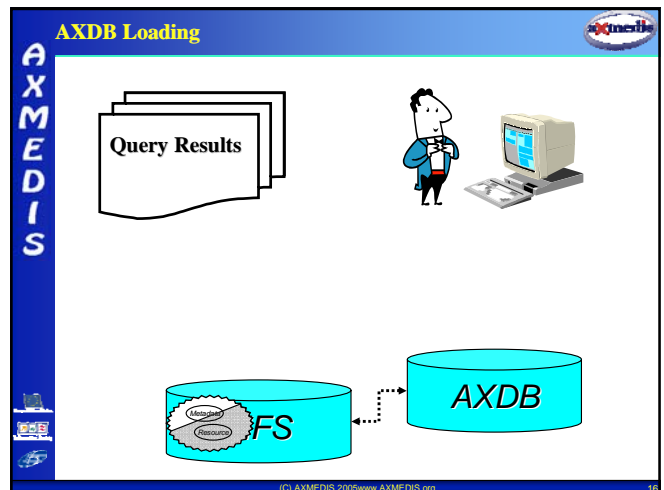
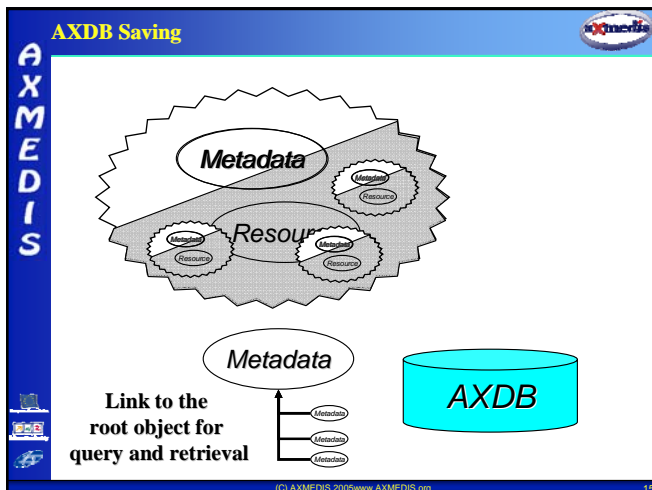
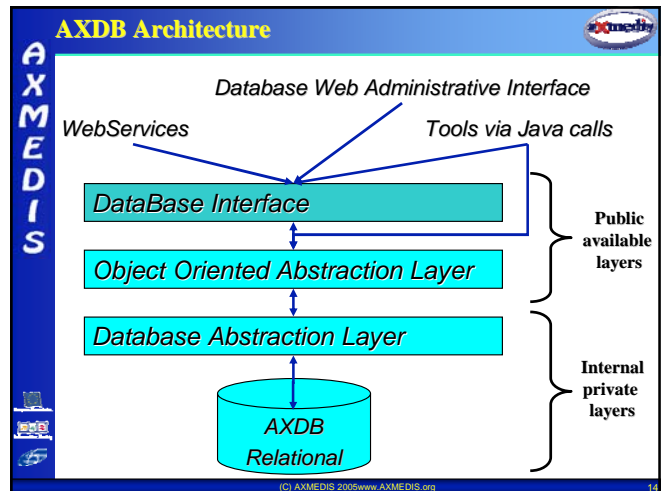
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AXMEDIS AXDB facts

- 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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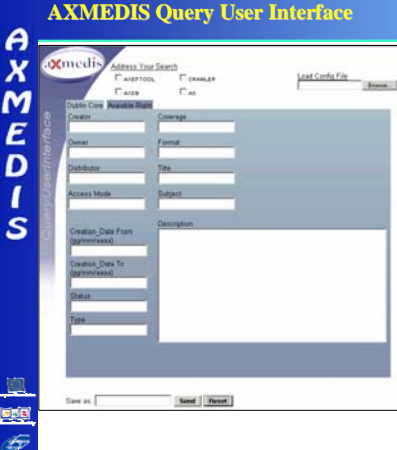
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AXMEDIS Query Support Facts

- 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

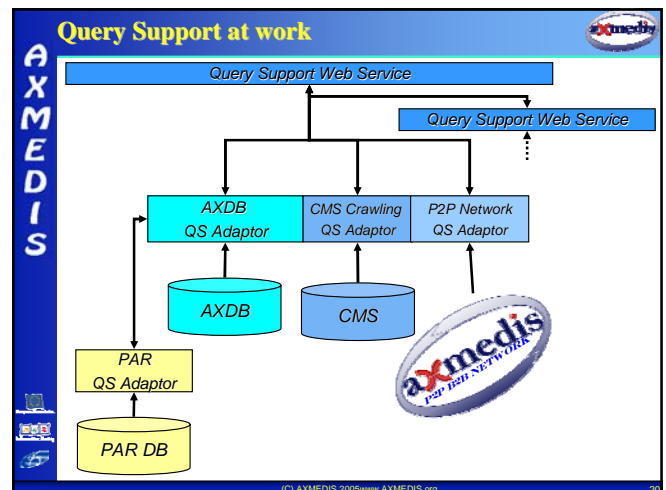


Heading: contains a multiple choice checkbox to address the AXMEDIS query on different locations.

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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Overview of this Tutorial

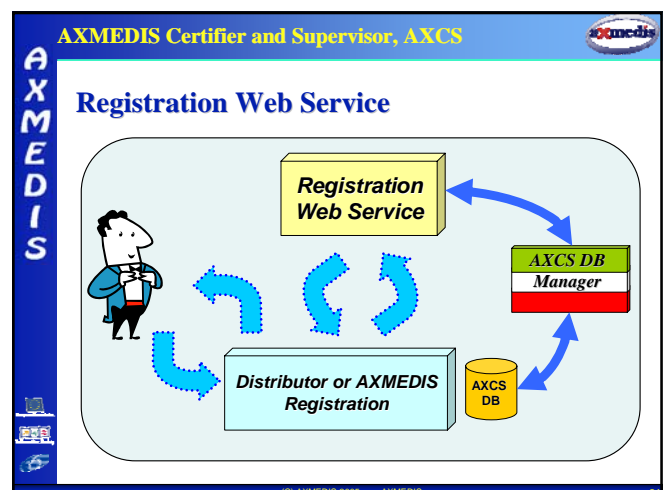
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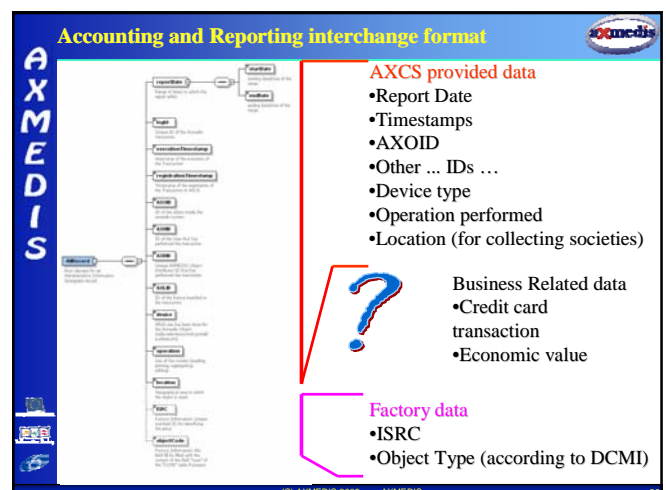
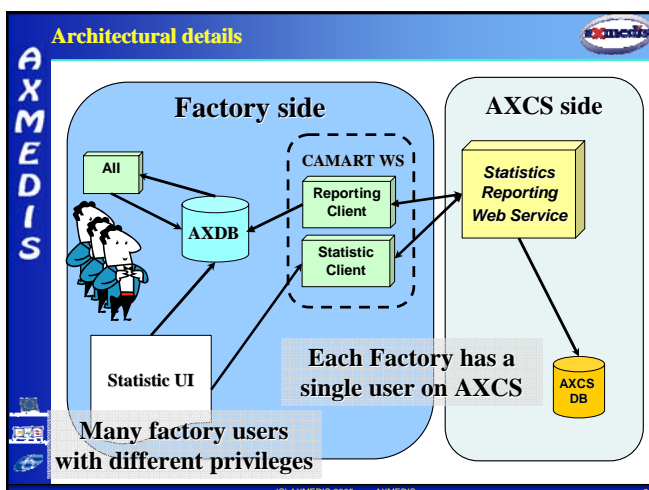
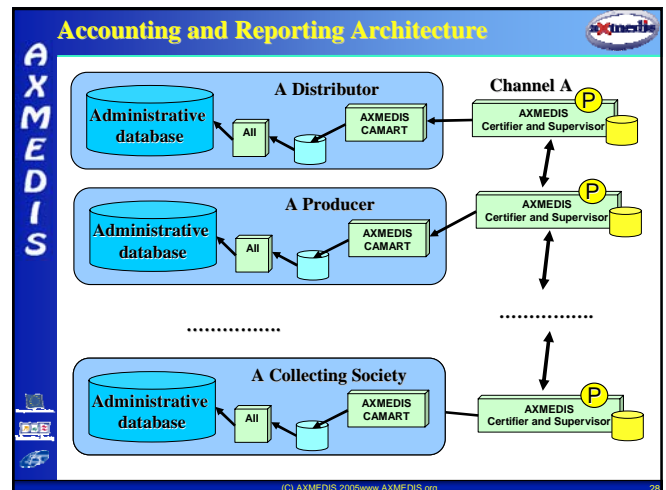
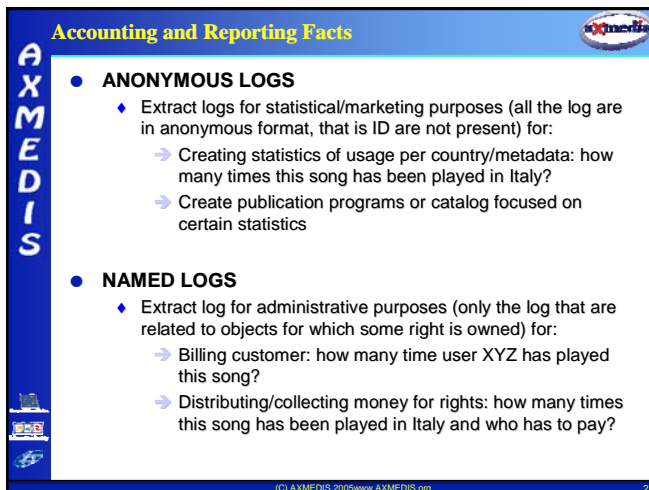
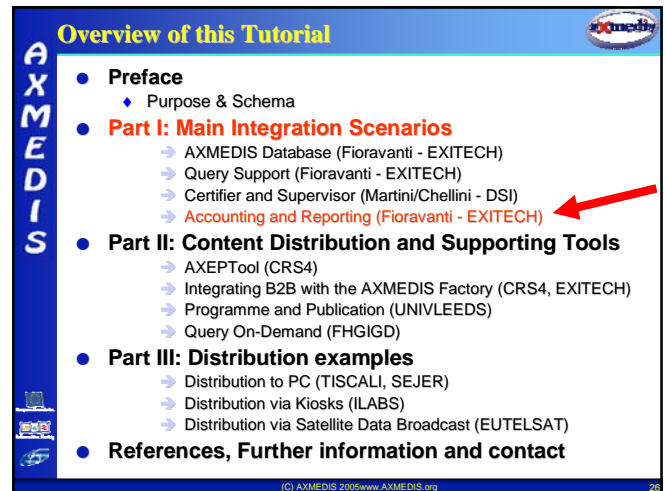
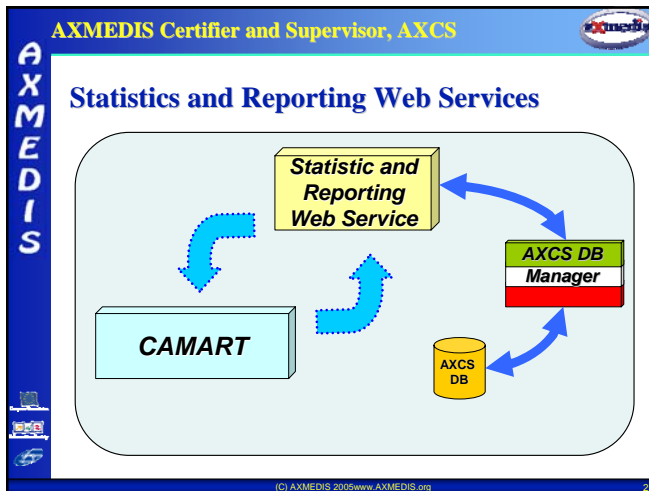
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AXMEDIS Certifier and Supervisor facts

- **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)

version 1.0
Last updated: 1 December 2005

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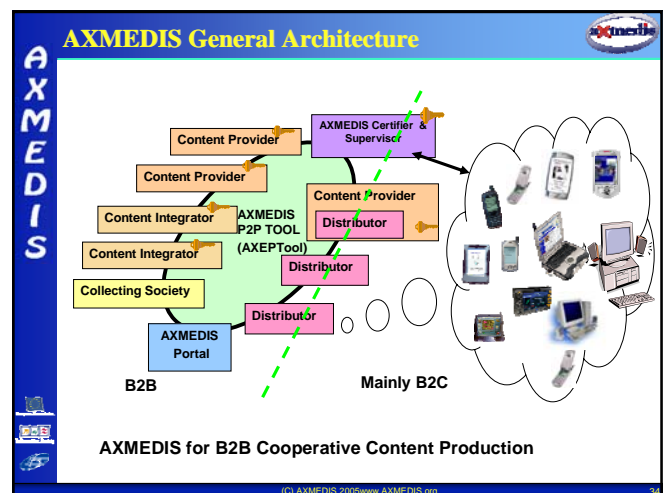
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Distributing is good, Sharing is even better!

- **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 AXEPTool?

- The AXEPTool 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
- AXEPTool 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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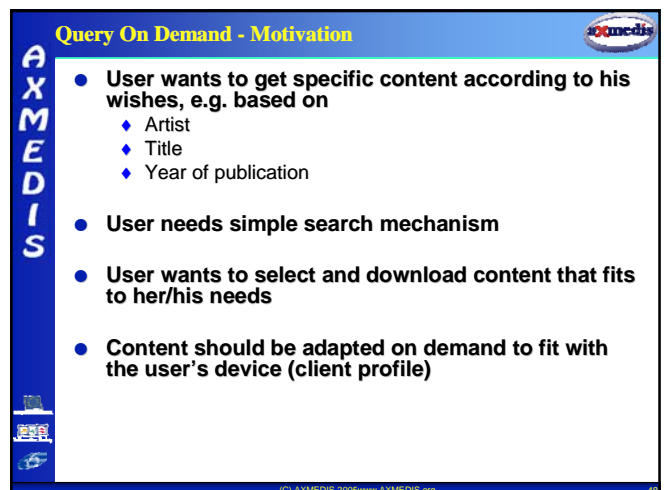
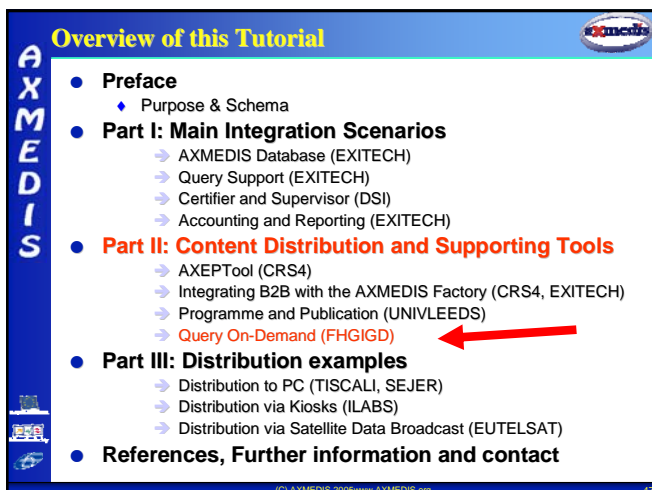
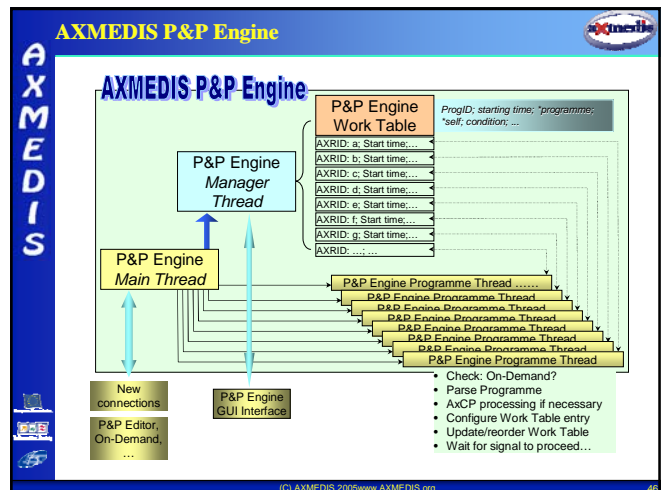
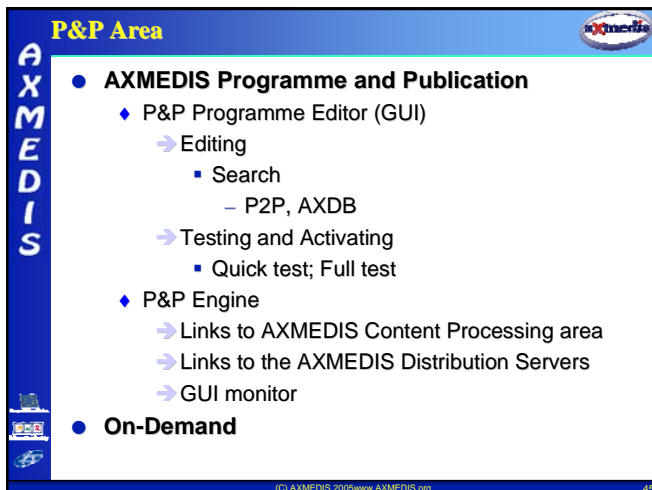
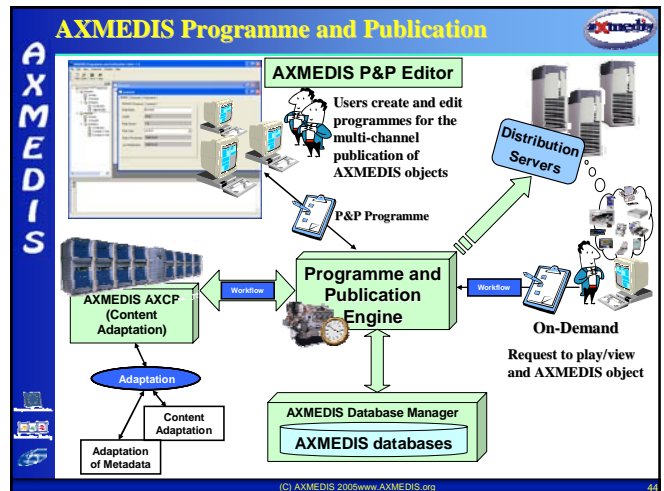
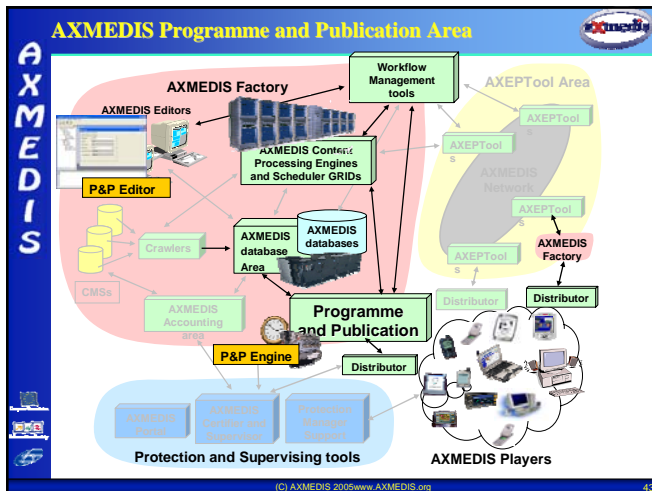
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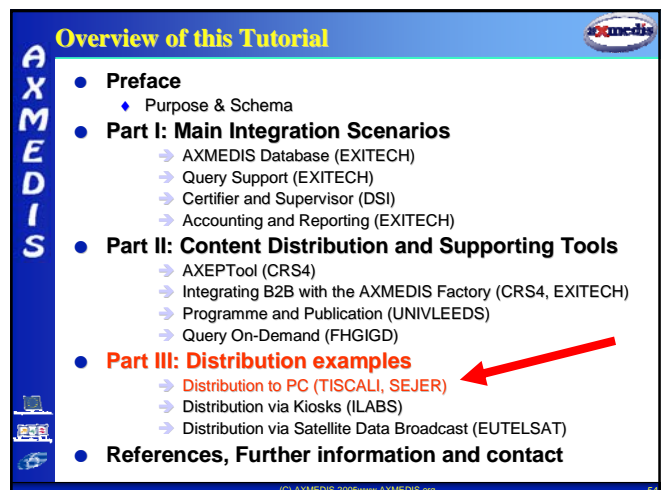
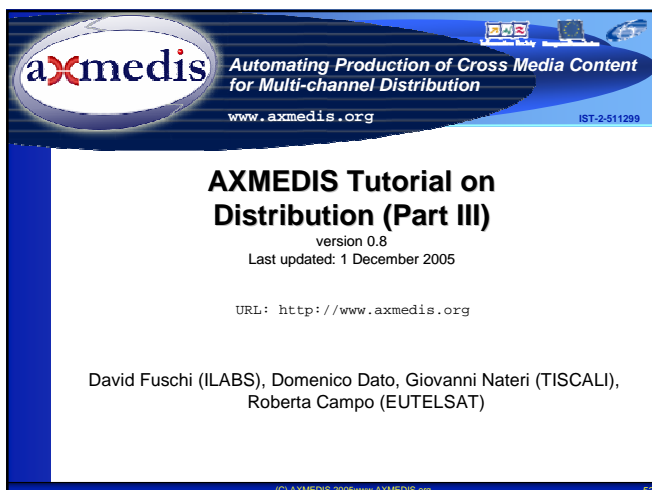
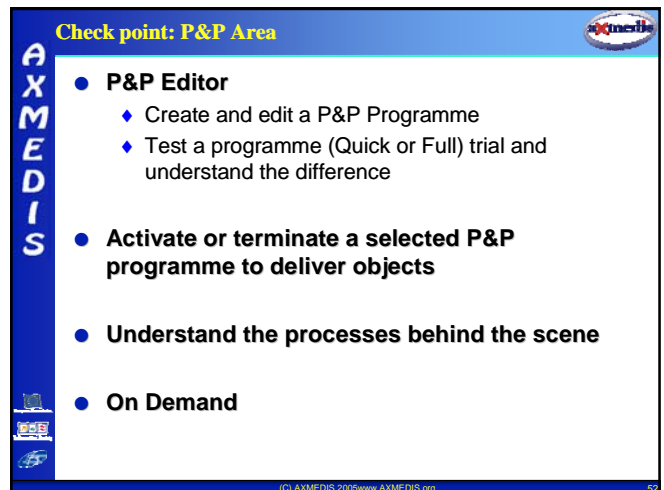
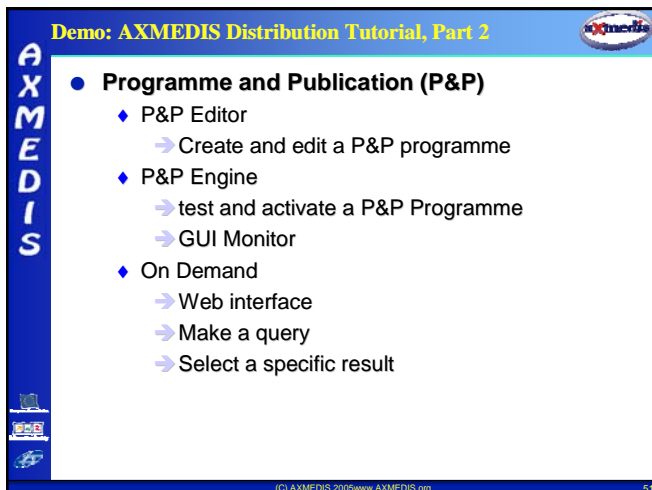
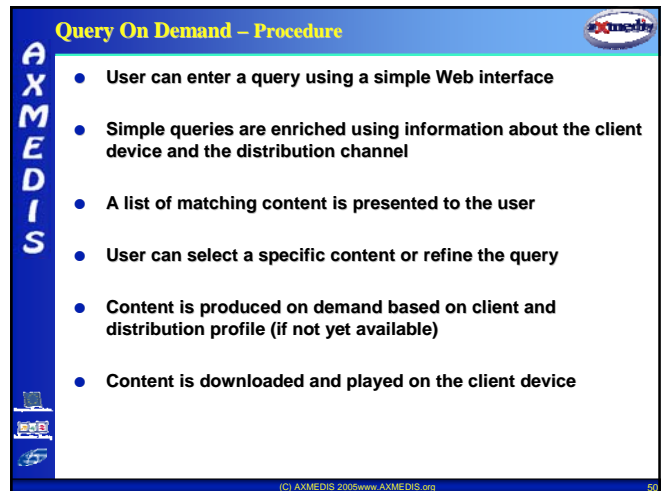
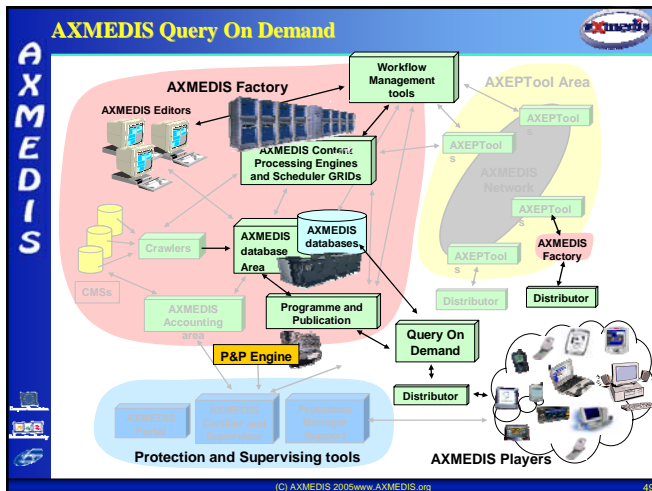
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Introduction to Programme and Publication (P&P)

- **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

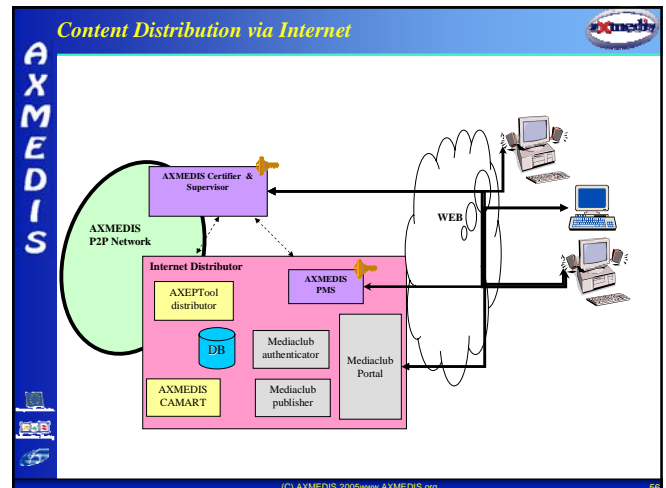
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Introduction to Distribution Content via Web

- 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

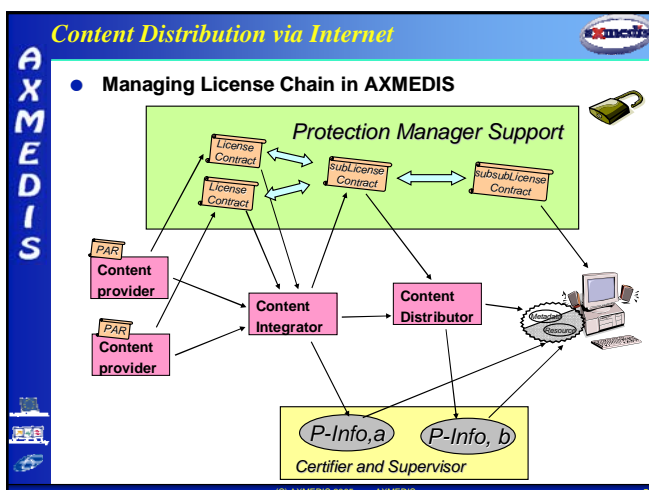


Content Distribution via Internet

- 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.

Content Distribution via Internet

- MediaClub users interact whit 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

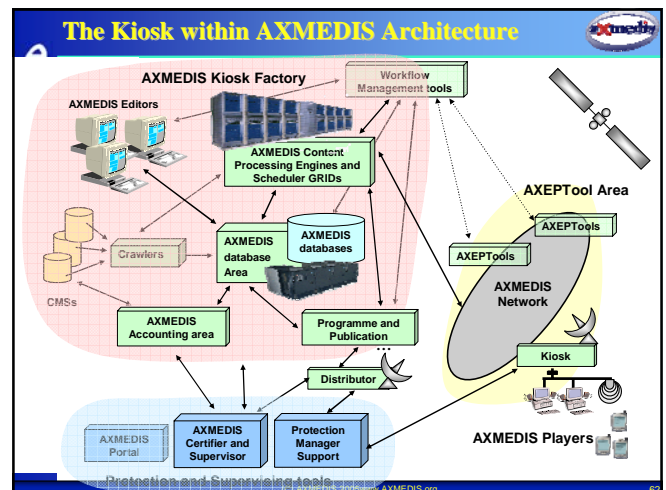


Overview of this Tutorial

- 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 (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**

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



Content selection

The screenshot shows the AXMEDIS web interface. A sidebar on the left lists categories like 'visual monet', 'visual monet', 'visual monet', 'visual monet', and 'visual monet'. The main content area displays a preview of a painting titled 'visual monet' by 'Paul Smith'. The description reads 'some Monet related images'. The interface includes a 'Management' section and a 'Logout' button.

Content acquisition & fruition

The screenshot shows the AXMEDIS web interface for content acquisition and fruition. It displays a list of items with columns for 'Title', 'Author', 'Description', and 'Price'. A 'Content can now be accessed' message is visible. The interface includes a 'Management' section and a 'Logout' button.

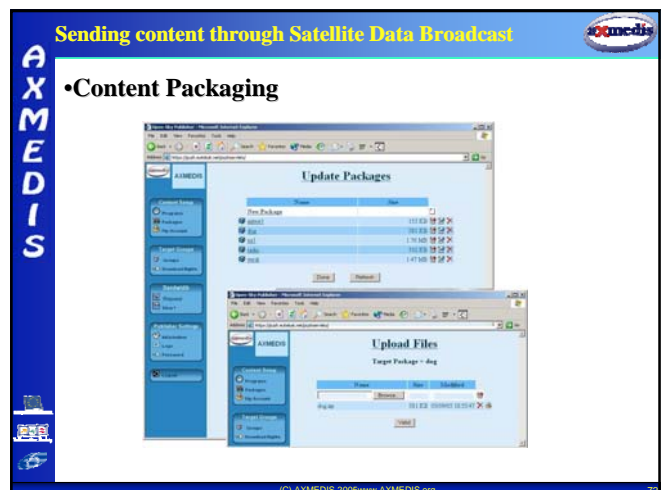
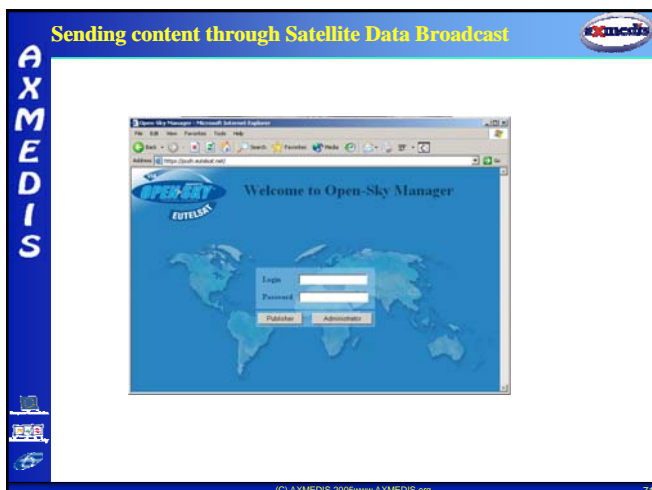
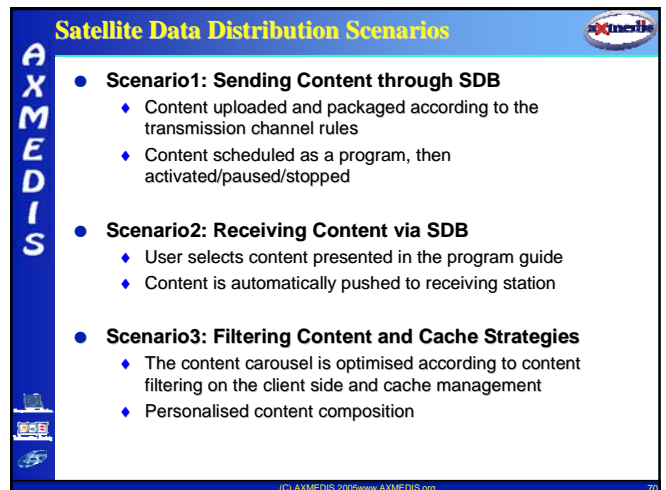
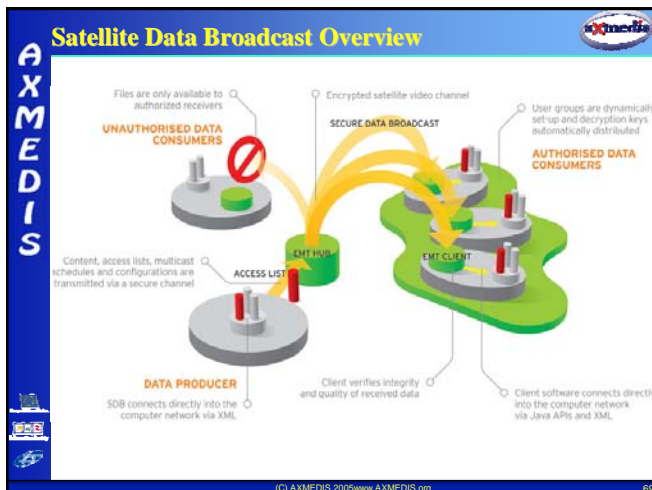
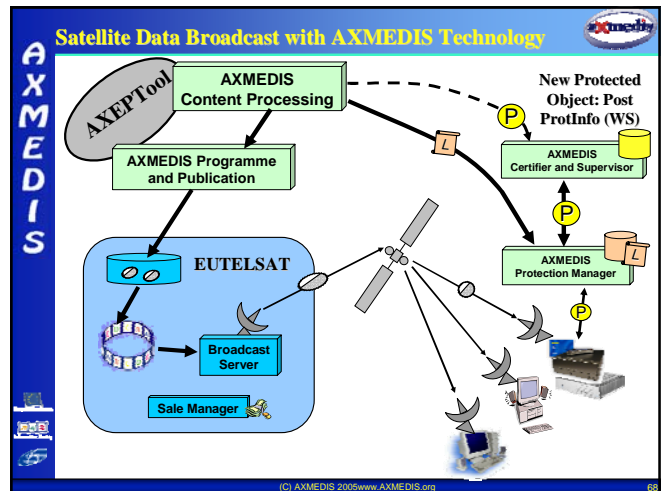
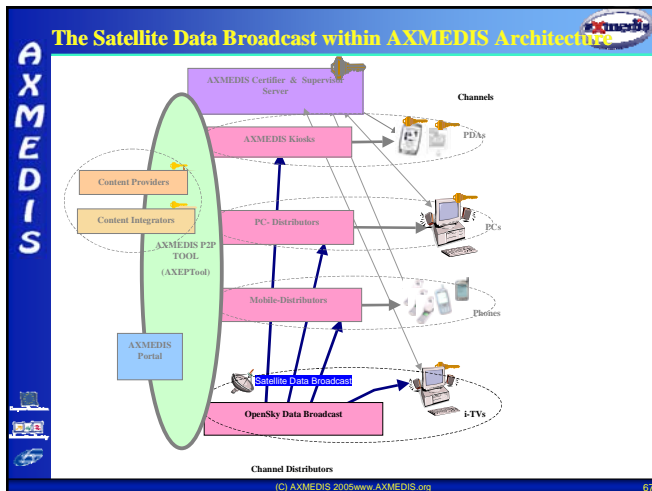
- Required operation are selected
- Valued
- Purchased

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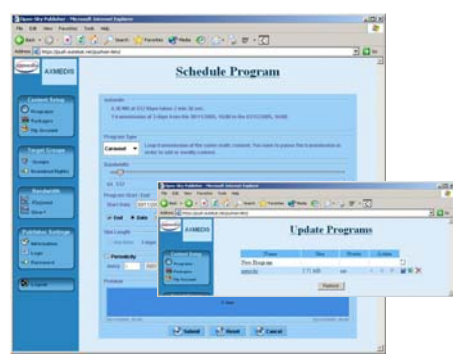
Introduction to AXMEDIS Satellite Distribution

- 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



Sending content through Satellite Data Broadcast

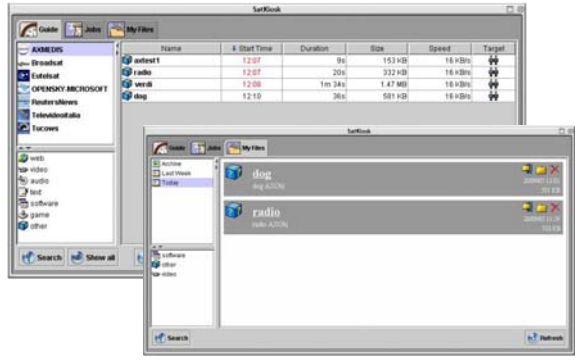
•Content Scheduling



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Receiving content via Satellite Data Broadcast

•Client application



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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**

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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**

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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**



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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

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References

- AXMEDIS: www.axmedis.org
- CRF: Content Reference Forum: <http://www.crforum.org/>
- DMP: Digital Media Project, 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
- MI3P, Music Industry Integrated Identifier Project, <http://www.mi3p-standard.org/>
- MPEG, MPEG-21: www.chiariglione.org
- MUSICNETWORK: www.interactivemusicnetwork.org
- WEDELMUSIC: www.wedelmusic.org
- Microsoft Windows Media: <http://www.microsoft.com/windows/windowsmedia/default.aspx>

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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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Affiliation to the AXMEDIS

- 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). The benefits of the affiliation include the possibility of using the AXMEDIS specification and technology for your business.
- **You are invited to**
 - ◆ contribute to the improvement of AXMEDIS documents and specification by sending the contribution to P. Nesi at nesi@dsi.unifi.it
 - ◆ attend AXMEDIS public meetings, for further information see www.axmedis.org or contact P. Nesi at nesi@dsi.unifi.it


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Thanks to all AXMEDIS partners


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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:*
- **Prof. Paolo Nesi, Ph.D.**
DISIT-DSI
Department of Systems and Informatics
Distributed Systems and Internet Technology Lab
University of Florence
Via S. Marta 3, 50139 Firenze, Italy
Email: nesi@dsi.unifi.it
Web: <http://www.AXMEDIS.org>



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