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Acknowledgments and References

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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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.

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

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 "AXEPTool"?
  - 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

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...

- These are a real challenge for many industries that are discovering the complexity of managing large digital content factories and distribution chains.
AXMEDIS Tutorial on Distribution, ver 1.1
30 November 2005

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

AXDB Architecture

- Database Web Administrative Interface
- Web Services
- Tools via Java calls
- Object Oriented Abstraction Layer
- Database Abstraction Layer
- AXDB Relational

AXDB Saving

- Metadata
- Resource
- Link to the root object for query and retrieval
- AXDB

AXDB Loading

- FS
- AXDB
- Query Results

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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

www.axmedis.org
**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.

**Query Support at work**

- AXDB QS Adaptor
- CMS Crawling QS Adaptor
- P2P Network QS Adaptor
- CMS
- P2P B2B network
- PAR DB
- PAR

**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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**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

**AXMEDIS Certifier and Supervisor, AXCS**

- Registration Web Service
- AXCS DB
- AXCS DB Manager
- AXCS Registration
- Distributor or AXMEDIS Registration
Axmedis Tutorial on Distribution, ver 1.1
30 November 2005

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Accounting and Reporting Facts

- ANONYMOUS LOGS
  - Extract logs for statistical/marketing purposes (all the log are in anonymous format, that is ID are not present) for:
    - Creating statistics of usage per country/metadata: how many times this song has been played in Italy?
    - Create publication programs or catalog focused on certain statistics
- NAMED LOGS
  - Extract log for administrative purposes (only the log that are related to objects for which some right is owned) for:
    - Billing customer: how many time user XYZ has played this song?
    - Distributing/collecting money for rights: how many times this song has been played in Italy and who has to pay?

Accounting and Reporting Architecture

Accounting and Reporting Interchange Format

Axmedis Database (Fioravanti EXITECH)

Query Support (Fioravanti - EXITECH)

Certifier and Supervisor (Martini/Chellini - DSI)

Accounting and Reporting (Fioravanti - EXITECH)

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Integrating B2B with the AXMEDIS Factory (CRS4, EXITECH)

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Factory data

- ISRC
- Object Type (according to DCMI)

Business Related data

- Credit card transaction
- Economic value

Accounting and Reporting Interchange Format

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References, Further information and contact
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

AXMEDIS General Architecture

- Content Provider
- AXMEDIS Certifier & Supervisor
- AXMEDIS Portal
- AXMEDIS for B2B Cooperative Content Production

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) and/or RDF Site Summary (RSS 0.9 and 1.0) 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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  - Introducing B2B with the AXMEDIS Factory (CRS4, EXITECH)
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  - Certifier and Supervisor (DSI)
  - Query Support (EXITECH)

References, Further information and contact

- A General Portal
- CAMART for statistics
- Registering AXMEDIS Users
- Query Support

Distributing is good, Sharing is even better!

- make a query
- select the results

- A General Portal
- CAMART for statistics
- Registering AXMEDIS Users
- Query Support

Part III: Distribution examples

- CAMART for statistics
- Registering AXMEDIS Users
- Query Support

Part I: Main Integration Scenarios

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- Distribution via Satellite Data Broadcast (EUTELSAT)
- Distribution via Kiosks (ILABS)
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)

Rules and Scripts

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

Objects are created constantly

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

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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
Query On Demand - Motivation

- User wants to get specific content according to his wishes, e.g. based on
  - Artist
  - Title
  - Year of publication

- User needs simple search mechanism

- User wants to select and download content that fits to her/his needs

- Content should be adapted on demand to fit with the user’s device (client profile)
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

Programme and Publication (P&P)
- 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
  - Web interface
  - Make a query
  - Select a specific result

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Content Distribution via Internet

- MediaClub Manager interacts with AXMEDIS world in several ways.
  - AXEPTool: 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 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
      - buy directly a media content
  - AXMEDIS Player
    - using AXPlayer the user can:
      - get licences for bought contents (through special MediaClub pages)
      - play bought contents

Content Distribution via Internet

- Managing License Chain in AXMEDIS

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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
Content acquisition & fruition

- Required operation are selected
- Valued
- Purchased

Content can now be accessed

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

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www.axmedis.org
Satellite Data Broadcast Overview

Scenario 1: Sending Content through SDB
- Content uploaded and packaged according to the transmission channel rules
- Content scheduled as a program, then activated/paused/stopped

Scenario 2: Receiving Content via SDB
- User selects content presented in the program guide
- Content is automatically pushed to receiving station

Scenario 3: Filtering Content and Cache Strategies
- The content carousel is optimised according to content filtering on the client side and cache management
- Personalised content composition

Sending content through Satellite Data Broadcast

- Content Packaging

- Content Scheduling

Receiving content via Satellite Data Broadcast

- Client application
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  - 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 (FHIGID)
- Part III: Distribution examples
  - Distribution to PC (TISCALI, SEJER)
  - Distribution via Kiosks (LABS)
  - Distribution via Satellite Data Broadcast (EUTELSAT)
- References, Further information and Contact

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 General AXMEDIS Documents

- DE2.1 (two parts, A and B) User Requirements and use cases
  - A) User Requirements
  - B) Use Cases
- DE2.2 (two parts, A and B) 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

- 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
- CRF: Content Reference Forum: http://www.crforum.org/
- DMP: Digital Media Project, www.chiariglione.org
- ODLR: http://www.odlr.net/
- OMA: www.openmobilealliance.org
- MPEG, MPEG-21: www.chiariglione.org
- MUSICNETWORK: www.interactivemusicnetwork.org
- WEDELMUSIC: www.wedelmusic.org

www.axmedis.org
Comments, Acknowledgements & Contact Information

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

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

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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