



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

www.axmedis.org IST-2-511299

MEDIA 2.0 EXPO
professional
Exhibition & Conference
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Contenuti Digitali

Le sfide delle nuove tecnologie

Paolo Nesi

*DISIT-DSI, Distributed Systems and Internet Technology Lab
Department of Systems and Informatics, University of Florence*
nesi@dsi.unifi.it, paolo.nesi@unifi.it
<http://www.dsi.unifi.it/~nesi>, <http://www.disit.dsi.unifi.it>
<http://www.axmedis.org/>
 version 1.0

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Partners



UNIVERSITAT POLITÈCNICA DE CATALUNYA
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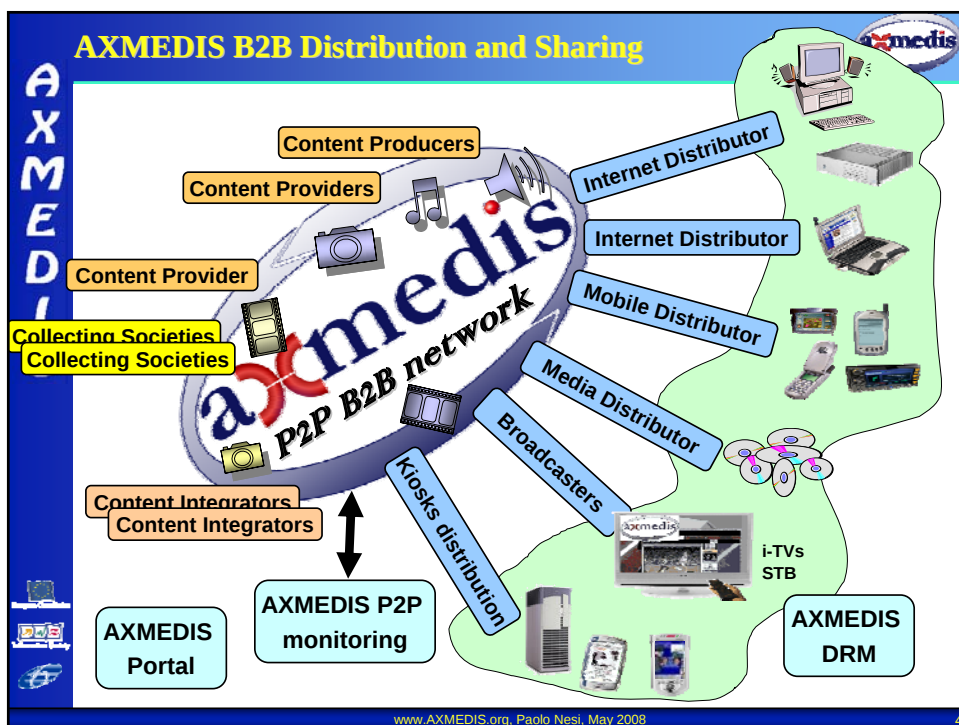
UNIVERSITY OF LEEDS
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Hexaglobe
maat
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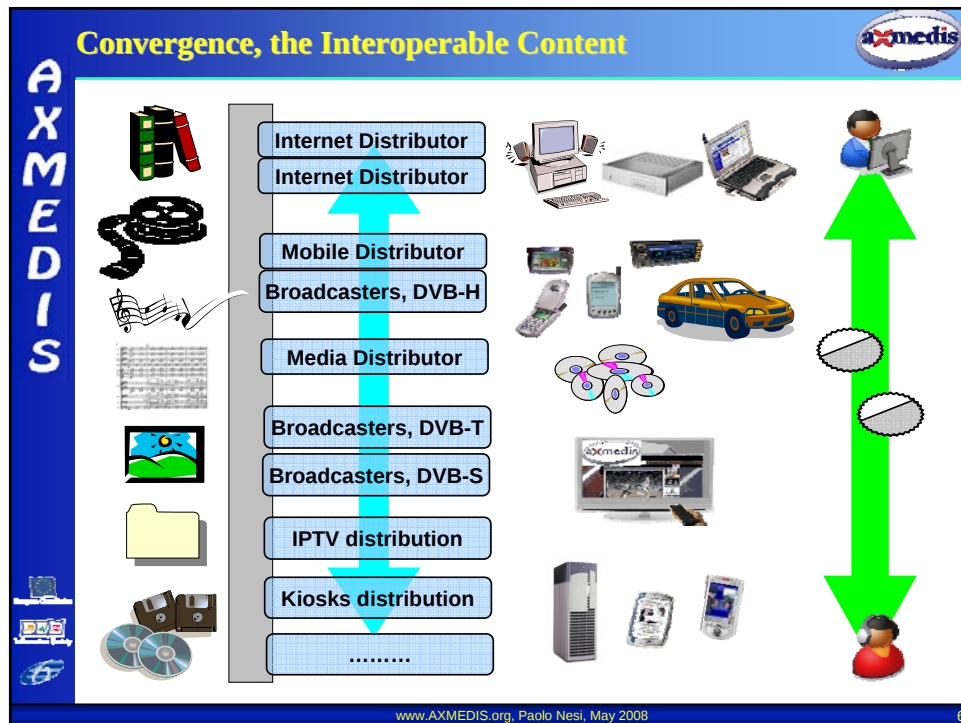
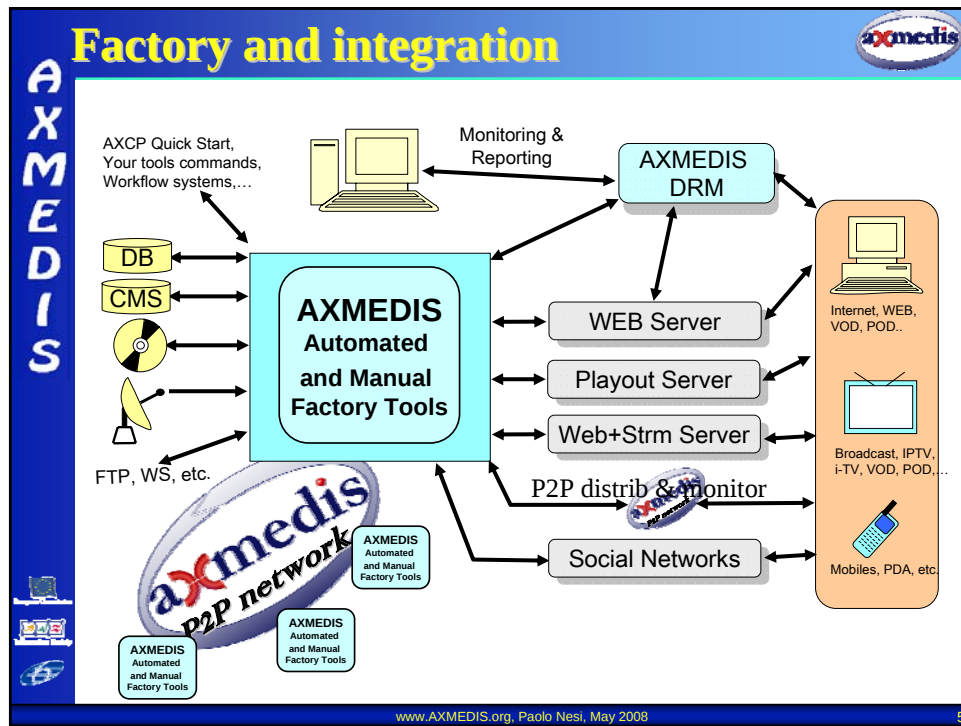
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Innovations

- **New models, methods and tools for:**
 - ◆ i3-Content, i-cube-content
 - **interactive**: from multimedia → to cross media
 - **intelligent**: active and proactive with users
 - **interoperable**: devices, DRMs, and formats
- **Automated Content Management, cost reduction**
 - ◆ production, protection and MULTI CHANNEL distribution
 - VOD, Prod. on Demand, profiling..
 - scalable processing
 - one language for all the value chain
 - ◆ Integration of B2B and B2C activities
 - Enforcing flexibility in business and transaction models
 - Interoperable DRM
 - Integrated DRM for B2B and B2C
 - ◆ Secure/Legal P2P content distribution
 - for both B2B and B2C
- **Create the AXMEDIS Framework for all**

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AXMEDIS



Summary

- **AXMEDIS Model**
 - ◆ AXMEDIS Editor and Players
- **Content Management**
 - ◆ Manual and Automated
 - ◆ AXMEDIS P2P
 - ◆ AXMEDIS DRM
- **Multichannel Distribution**
 - ◆ interoperability
- **AXMEDIS Framework**

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An example to wrap it all up

Music Album

AxInfo	DublinCore	Other Descriptions (e.g. MPEG7)
Rights Owner	Title	
Producer	Genre	
Distributor	Authors	

Album Cover

Rights Owner	Image	Resource JPG image
Producer	Author	
Distributor	Size	

Bonus video

Referred Object

Album Lyrics (printable)

Rights Owner	Doc	Resource PDF
Producer	Authors	
Distributor	Format	

Album Tracks

Rights Owner	Audio collection	track	track	track	track	track
Producer	Time length	mp3	mp3	mp3	mp3	mp3
Distributor						

Backstage Video

Rights Owner	Video
Producer	Genre
Distributor	Authors

Subtitles Languages
 Playing time
 Resolution

Resource
MPEG2 Video

- Metadata will be always accessible for indexing and querying

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AXMEDIS Cross Media Content

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- **Any content inside a package:**
 - ◆ Mix of: HTML, SMIL, MPEG-4, video, audio, text, Documents, images, actions, games, animations, etc.
 - ◆ Additional content and interactivity for the end users
 - ◆ compliant and extending MPEG-21
- **AXMEDIS Intelligent content allow user/producers to**
 - ◆ create content for other devices: ringtones, mobiles, ...
 - ◆ support social activity
 - annotations
 - user generated content
 - personal collections
 - ◆ internal query
 - ◆ customized for culture and language

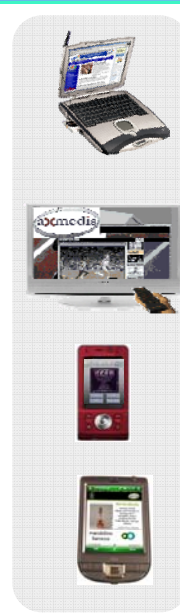


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AXMEDIS Interoperability among devices

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- **interoperability among devices, e.g., getting**
 - ◆ a video for the TV and reproducing it on mobiles, PC, etc.
 - ◆ an MP3 audio track and using as ringtone in the phone, reproducing it on the car stereo, or in the living room, passing to a friend.
 - ◆ a guide in a museum for his mobile/PDA, using there, and passing and playing it at home on the TV set and/or on the PC
 - ◆ Making annotations on a video and pass to a friend, ...
 - ◆
- **Buy once to use on all**
 - ◆ According to the business model
 - ◆ Via different DRM models and tools



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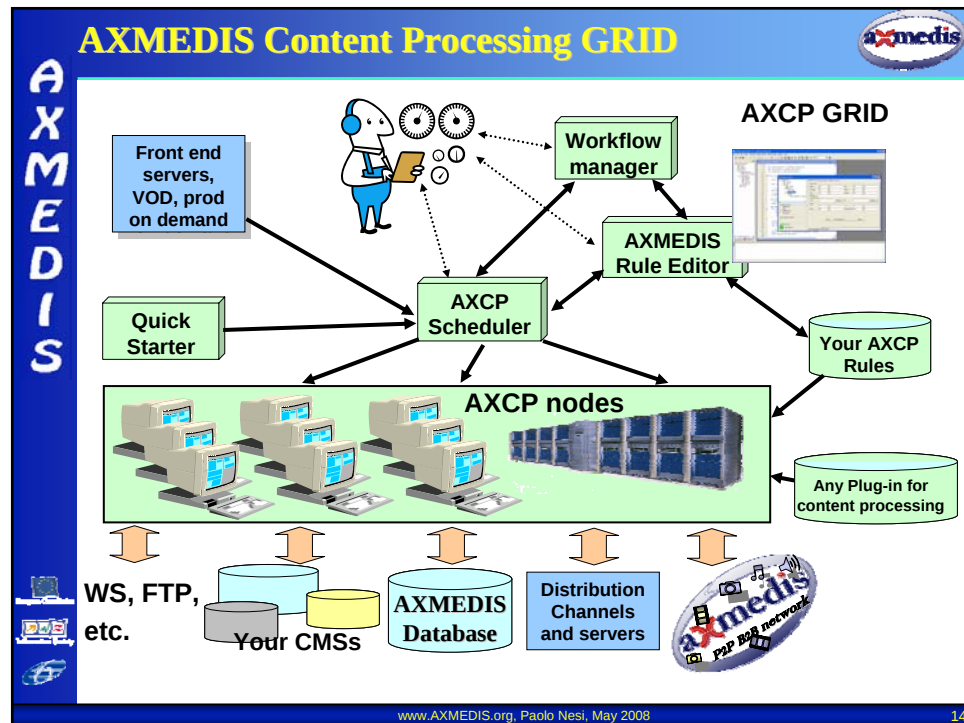
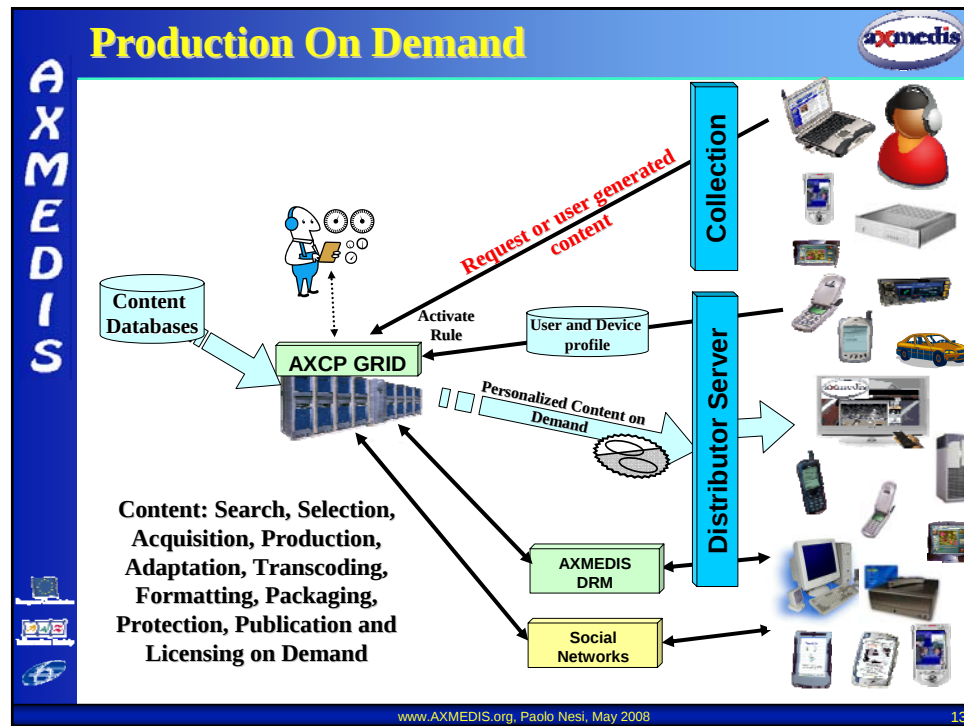


Summary

- **AXMEDIS Model**
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- **Content Management**
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 - ◆ AXMEDIS P2P
 - ◆ AXMEDIS DRM
- **Multichannel Distribution**
 - ◆ interoperability
- **AXMEDIS Framework**

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Enabling massive content production and processing

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Production **Distribution** **Usage**

AX Editors AXCP Tools AX-P2P AX Players

- **AXMEDIS GRID language and tools for**
 - ◆ Automated Content Ingestion and Gathering
 - ◆ Automated Content Query and Retrieval
 - ◆ Automated Content Load and Storage: databases and files
 - ◆ Automated Content and Metadata Processing, enrichment
 - ◆ Automated Content and Data processing
 - ◆ Automated Content Filtering and Repurposing
 - ◆ Automated Content Composition, Formatting
 - ◆ Automated Content Protection and Licensing
 - ◆ Automated Content Publication/Download on/from any channel
 - ◆ Automated Content Distribution via Multichannel
 - ◆ Automated Profiles management and processing
 - ◆ Automated Production of Content on Demand
 - ◆

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Secure and legal P2P

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- **P2P network set up for content distribution**
 - ◆ CONSUMER content distribution and sharing
 - ◆ Allowing setting up large P2P networks at low costs, about 160,000 peers per server.
 - ◆ Automated B2B content distribution/publication via P2P, ready to download content on publication
 - ➔ Accelerated seeding
 - ◆ Protected content, legal P2P set up
 - ◆ Efficient control of P2P networks
 - ◆ BitTorrent Technology with Query and Catalogue
 - ◆ P2P Client Tools
- **Content Sharing for B2B and/or B2C**

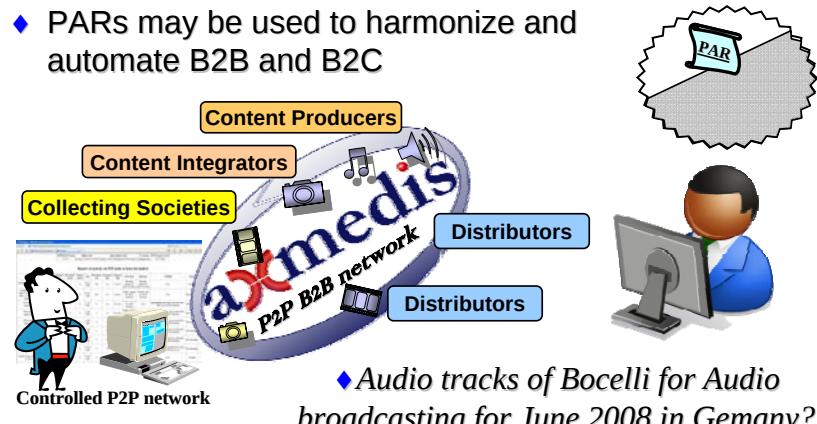
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Make easier the B2B market of digital content

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- **PAR: Potentially Available Rights into AXMEDIS objects**
- **The PAR can be used to make queries**
 - ◆ PARs based content trading, Customers may know directly which rights they could buy and by who
 - ◆ PARs may be used to harmonize and automate B2B and B2C



◆ *Audio tracks of Bocelli for Audio broadcasting for June 2008 in Gernany?*

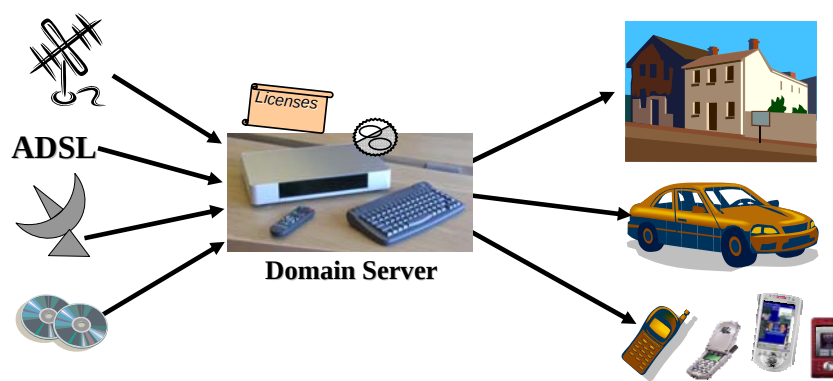
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DRM and Domain Management

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- **Users are strongly interested in acquiring a content to be used in their domain in which they have their**
 - ◆ Home devices, cars, mobiles, etc.
- **Media Centers and/or Home Servers are going to manage content and licenses for the whole domain**
 - ◆ One license for all devices and people



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Market solutions viz AXMEDIS	
Business Models	Larger number of Business Models
B2C DRM	B2B, B2C, B2B2C DRM solution
Proprietary / Standard DRM and model	Standard DRM: MPEG-21, OMA, etc.
Non interoperable DRM	Allowed Interoperable DRM: MPEG-21, OMA, etc.
Fixed/Flexible Protection Model	Any Protection Model, key, algorithms, etc.
Separation among Content and license	Separation among Content and license
Signed Content Header	Signed Content AXINFO, any Metadata
Channel distribution	Multichannel with the same license
Players and Devices	Players and Devices: PC MS-Windows, PDA Windows Mobile, STB, Linux OS, Apple MAC (in progress), Java Mobiles
License Proprietary: number of rights	Licenses MPEG-21 REL: Expandable dictionary, any type of rights, licenses OMA, domains
Authentication of Player	Authentication of device, user, domain, etc.
Revocation per Player	Revocation per device, user, etc,
Revocation per license	Revocation per license
Source code non accessible	Source Code Accessible
Limited Metadata	Any metadata, custom metdata, any ID, any Descriptor
Media content, simple content, not intelligent	Any digital format, of any type: audio, video, image, games, doc, and Cross media: SMIL, HTML, MPEG-4,... INTELLIGENT content
Customizable Tools	Customizable Tools: servers and player clients

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 - ◆ interoperability
- **AXMEDIS Framework**

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AXMEDIS Multichannel Distribution

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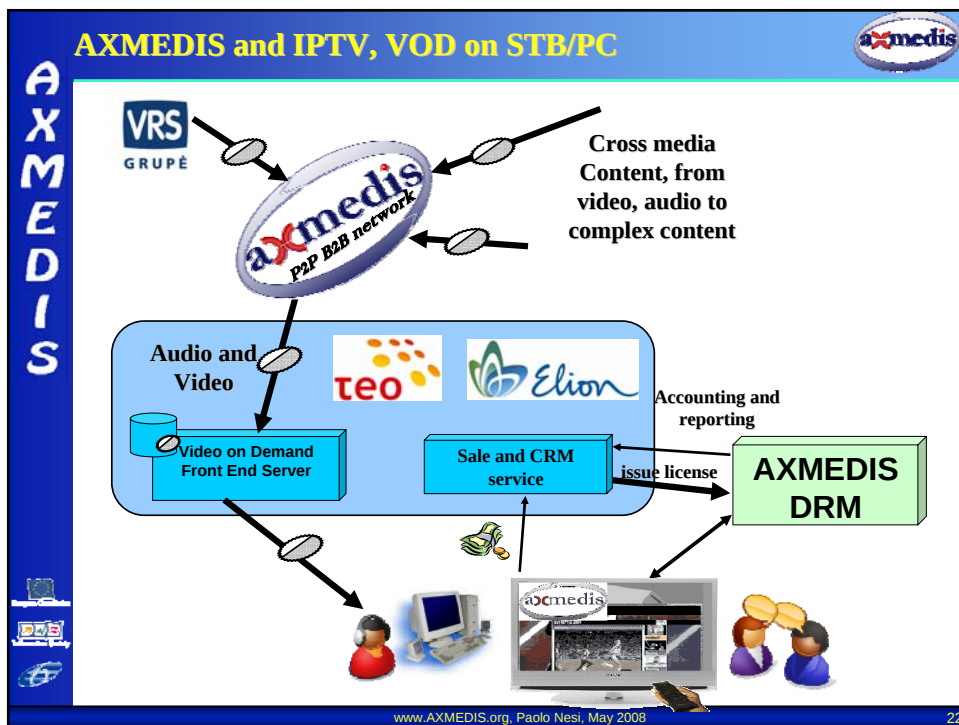


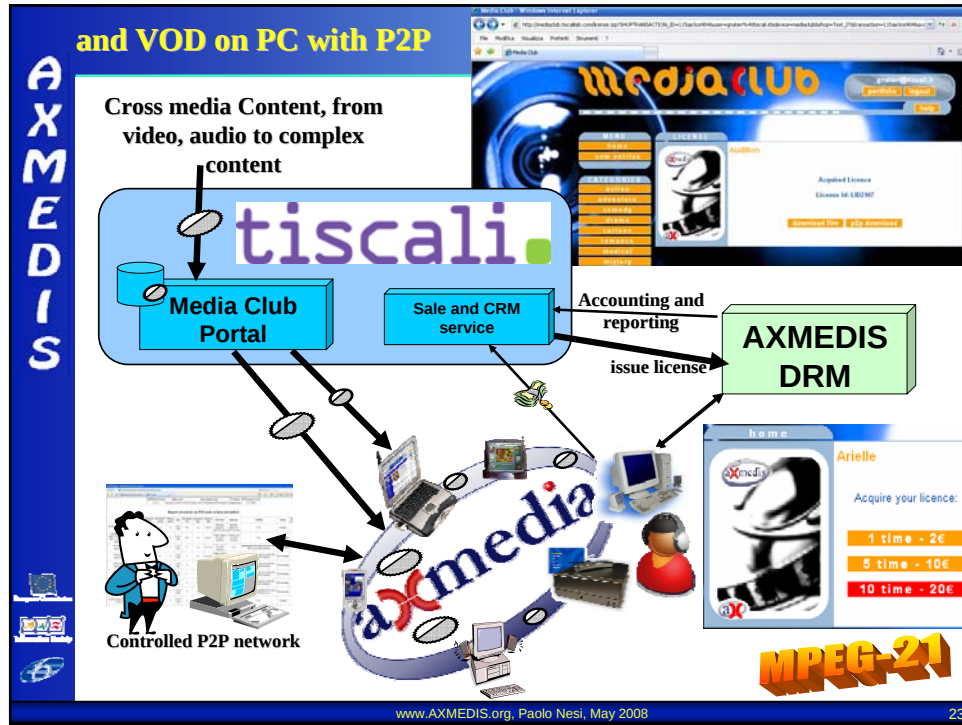
- PCs via Internet+P2P, AXMEDIS P2P and PC player: TISCALI Media Club, DSI 
- PCs via Internet, AXMEDIS PC player:
 - ♦ ELION, VRS 
- PCs via Satellite data broadcast, AXMEDIS PC player:
 - ♦ EUTELSAT, UNIVLEEDS 
- PDA via Kiosks, AXMEDIS PDA player:
 - ♦ ILABS + ANSC Kiosks, TISCALI, DSI  
- STBs and PVRs:
 - ♦ AXMEDIS STB: IPTV, Internet VOD: TEO, VRS 
 - ♦ AXMEDIS STB/PVRs via Satellite data broadcast: EUTELSAT, MBI 
- Mobiles:
 - ♦ AXMEDIS mobile player: ILABS, TISCALI, DSI  
 - ♦ OMA player: Telecom Italia (TI), DSI 
- PCs via Internet+P2P, AXMEDIS P2P and PC player:
 - ♦ free air DVB-T + home domains/media center
 - ♦ BBC, SDAE, ETRI, UPC  



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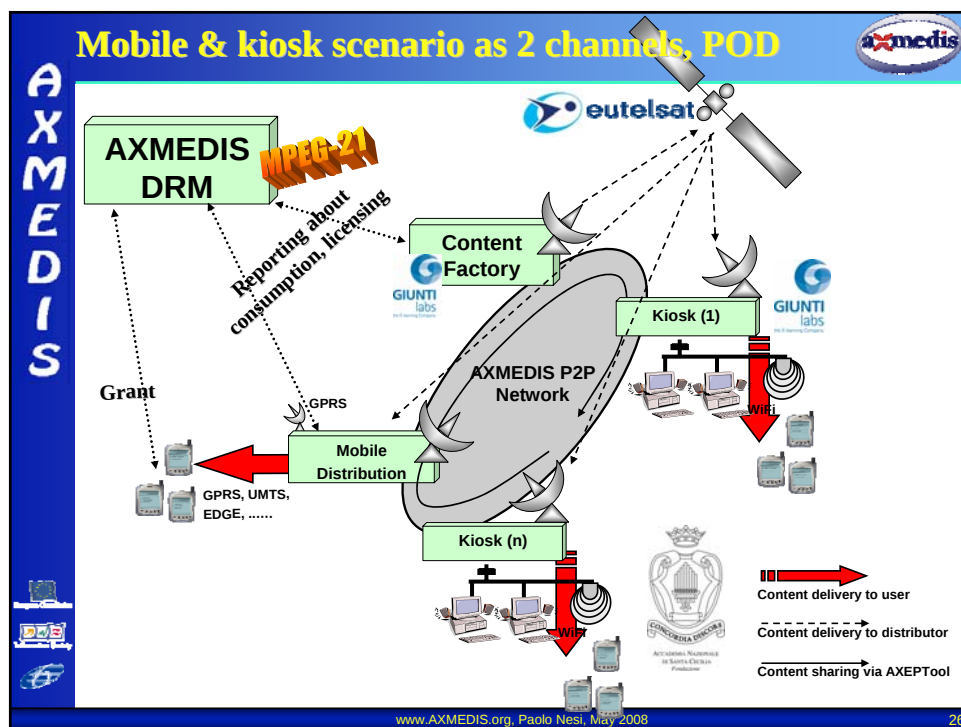
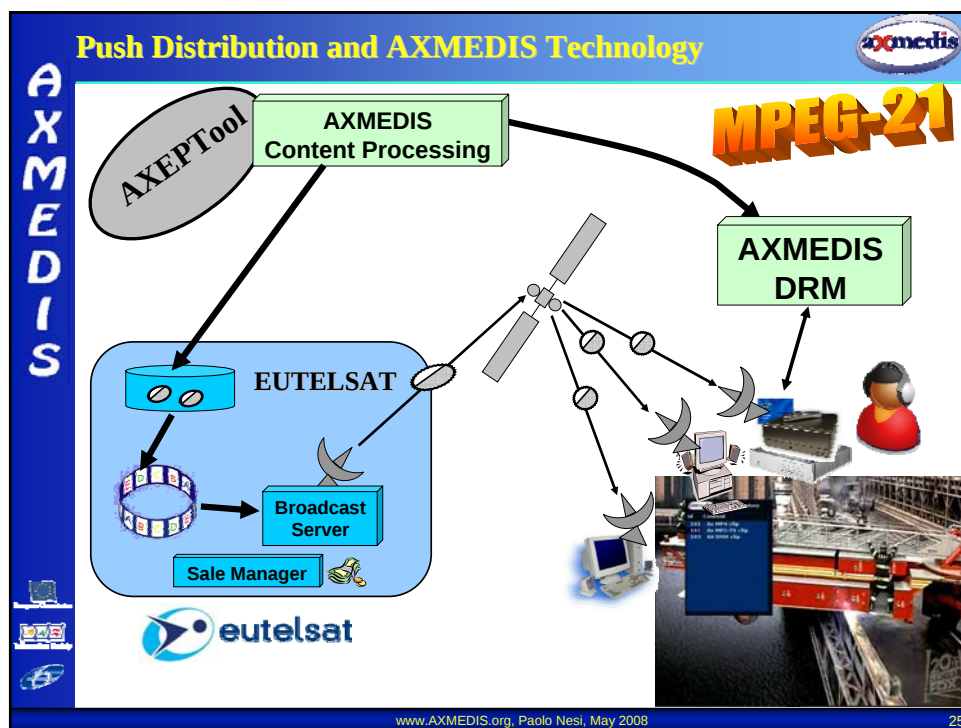
AXMEDIS P2P for B2B: AXEPTool

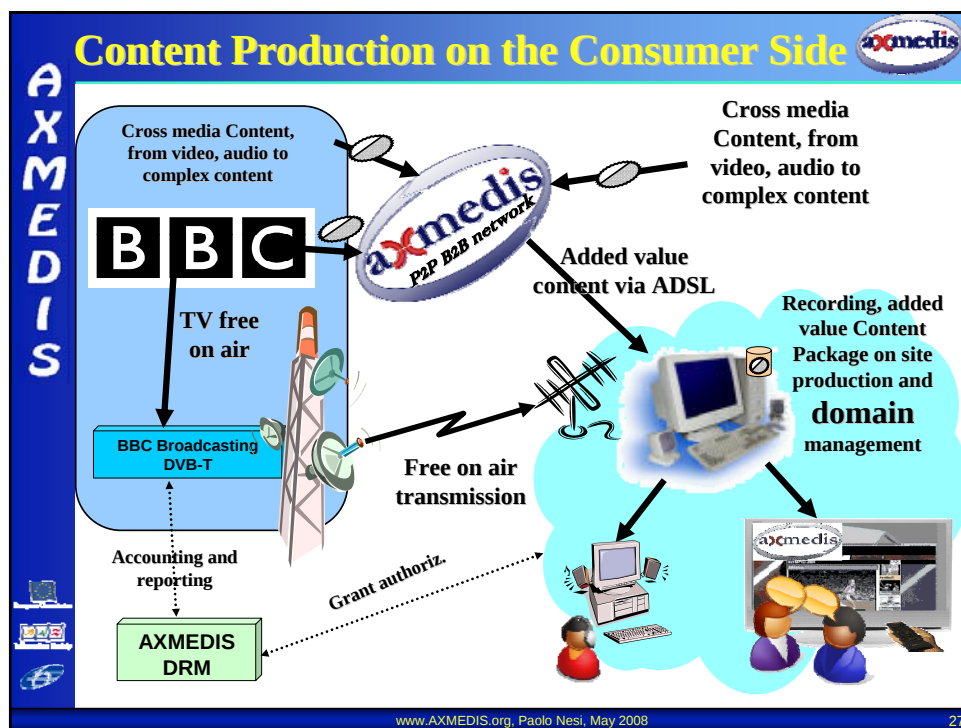
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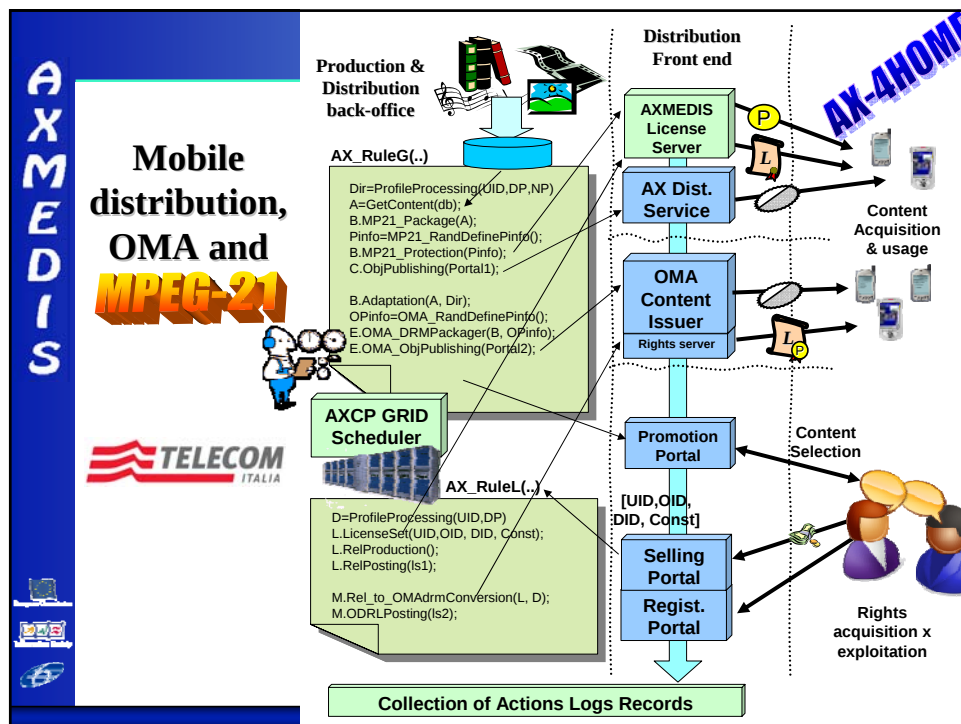
Enhanced BitTorrent Technology with AXEPTool P2P B2B tool

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Content Enrichment with final users



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- Content Enrichment with AXMEDIS
- **VARIAZIONI** e-ContentPlus
- www.variazioni.org
- **Content**
 - ◆ enrichment, several forms
 - ◆ produced and reproduced on demand at each enrichment
 - ◆ production with DRM
 - ◆ distribution from VARIAZIONI portal and from AXMEDIS P2P
- **> than 10 partners + communities**
 - ◆ Partners from Spain, Lithuania, Belgium, Portugal, Italy, Finland, Portugal

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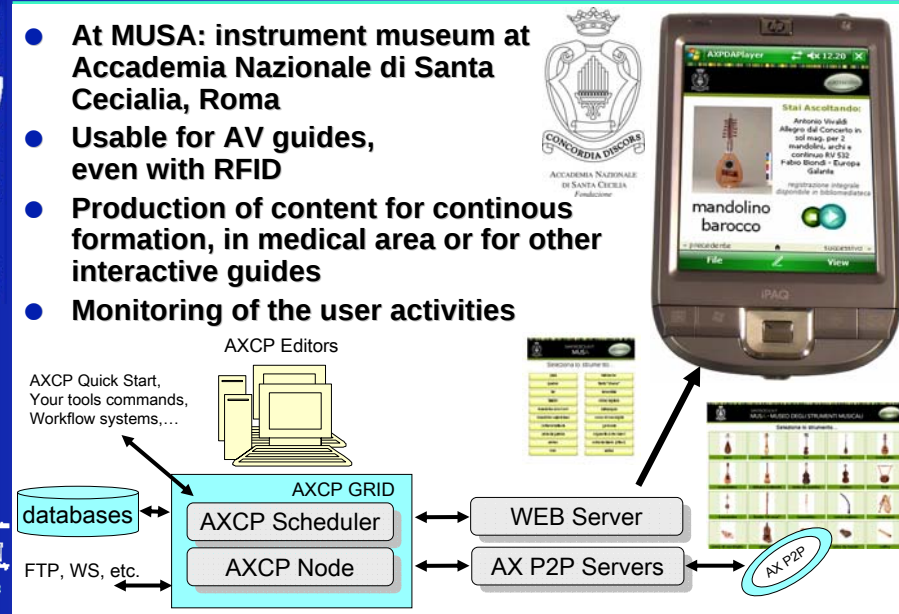
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Distribution of cultural content, AV guides



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- At MUSA: instrument museum at Accademia Nazionale di Santa Cecilia, Roma
- Usable for AV guides, even with RFID
- Production of content for continuous formation, in medical area or for other interactive guides
- Monitoring of the user activities



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Interoperability among channels

- **Channels are the distribution methods for content:**
 - ◆ streaming,
 - ◆ downloading, prog./download
- **Channels are grounded on different communication standards,**
 - ◆ MPEG, HTTP, SMIL, etc.
 - ◆ Content and devices are strongly related to the supported input channel
- **AXMEDIS content is independent on the communication channel**
 - ◆ Content can be automatically produced for multiple channels at the same time
 - ◆ Content received from one channel can be passed to a different one

DVB-T
P2P
Internet
UMTS
GPRS
Push
pull
Downloading
Streaming
VOD
P2P
...



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Interoperability among channels

- **A unique framework for all**
 - ◆ Cross Media Content and tools
 - ◆ Backoffice Automation
 - ◆ Standards
 - ◆ Open platforms
 - ◆ Interoperability on content
 - ◆ Interoperability on devices/players
 - ◆ Interoperability on DRM
- **The added value to your business!**





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Contact Information



- **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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Please download AXMEDIS Tools



- **AXMEDIS PC player:**
 - ♦ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3715
- **AXMEDIS PC player with SKIN**
 - ♦ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3716
- **AXMEDIS PC player, Active X and .Net**
 - ♦ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3717
- **AXMEDIS PC player for EUTELSAT OPENSky:**
 - ♦ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3767
- **AXMEDIS Editor:**
 - ♦ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3720
- **AXMEDIS content production tools (includes the above AXMEDIS Editor):**
 - ♦ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3722
- **PDA player:**
 - ♦ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3842
- **PDA content:**
 - ♦ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3748
- **P2P Client tool AXEPTool:**
 - ♦ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3840



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Technical Notes

- **AXMEDIS for all**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3108
- **AXMEDIS Object model**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3845
- **AXMEDIS Automated Content processing**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3624
- **AXMEDIS P2P**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3612
- **AXMEDIS DRM**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3616
- **AXDRM how to use on a portal**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3616
- **Video on demand and STB, TEO show case**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3738
- **Content on demand on Internet, ELION show case**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3745
- **Content distribution via Satellite Data broadcast EUTELSAT Case**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3820



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Click on these links to download the videos

- **editor-new5b.wmv**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3643
- **play5-N.wmv**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3645
- **play5-VIDEO-NESI.wmv**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3671
- **new-xim-ansc-objects-with-audio.wmv**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3669
- **pda-player-medium.wmv**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3668
- **sat-dist-with-audio.wmv**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3667
- **kiosk.wmv**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3848
- **AXELTEO-TEO-STB-demo.wmv**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3670
- **ELION-enduser-nesi.wmv**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3649
- **bbc-user4.wmv**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3672
- **siae-presentation-short-July2007-new-nov07.wmv**
 - ◆ http://www.axmedis.org/documenti/view_documenti.php?doc_id=3651



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