

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

www.axmedis.org IST-2-511299

Short Overview for Document/Content protection


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/>
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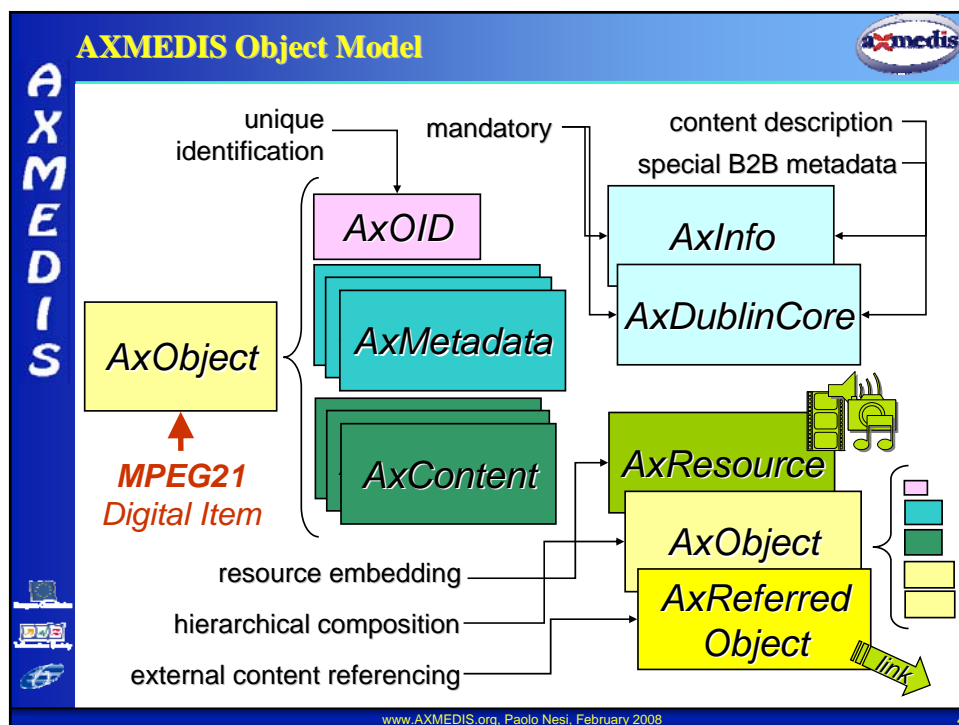
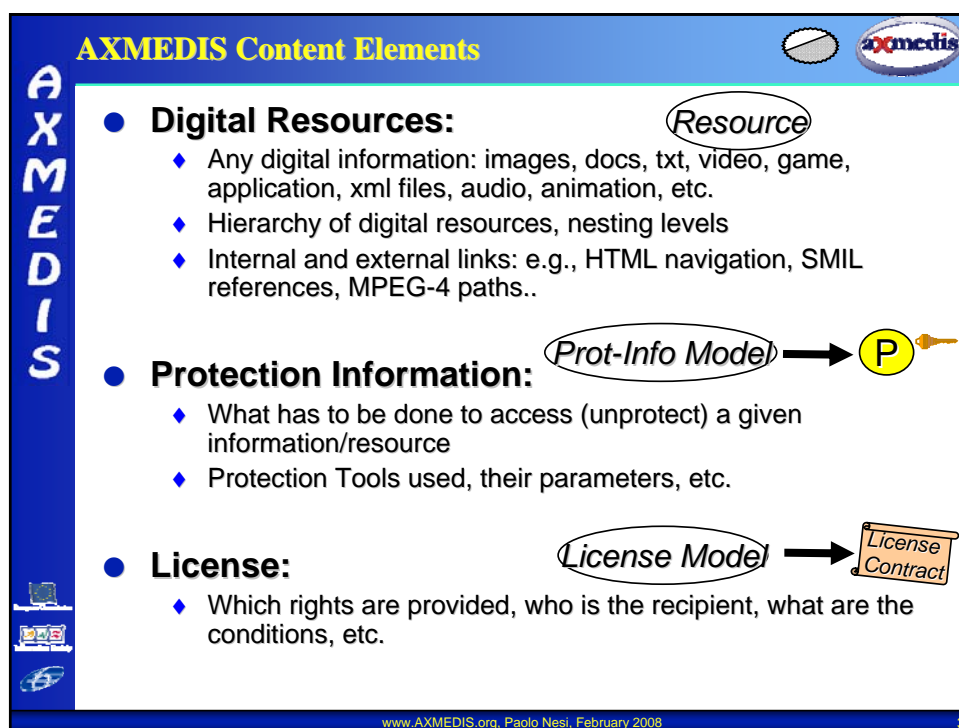


Aim of Digital Rights Management




AXMEDIS

- To prevent the non-authorized rights exploitation by who has not acquired the rights
- To allow accessing at the digital content functionalities in a controlled manner
 - ◆ To who has been **authenticated/certified**
 - ◆ To do what (are the rights) is defined in a **License**
 - ◆ **Verifying/Control/Supervise** if the above conditions and others are respected
 - ◆ By using technologies to **protect content** (e.g., encryption, fingerprint, watermark, etc.)
- To **Verifying/Control** if the allowed rights are respected
- There are some **Cons**, since the user is constrained:
 - ◆ Registration of users
 - ◆ Authentication of users and/or tools/terminal/devices
 - ◆ Control of users
- **It has to be supported by a set of additional technical solutions**

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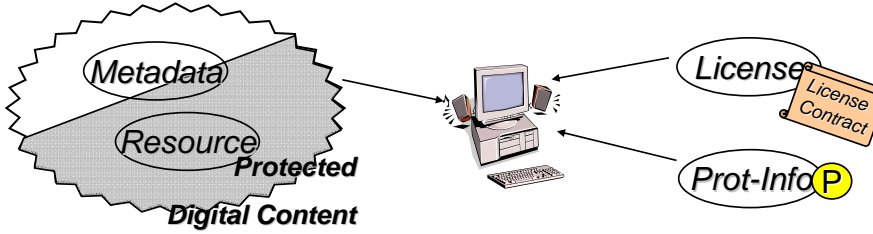
AXMEDIS Digital Rights Management

- To allow accessing at the digital content functionalities in a controlled manner
 - ◆ To who has been registered the first time and continuously: **authenticated and certified**
 - ◆ To do what is defined in a **license** (to allow exploiting the rights)
 - ◆ By using technologies to **protect content** (e.g., encryption, fingerprint, watermark, etc.)
 - ◆ **Verifying/Control/Supervise** if the above conditions and others are respected

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Managing License and Protection Information


- Once obtained the content a license is needed to exploit the right you have acquired,
 - ◆ or at least you need a server that verify that you are authorized to exploit some right and provide you the Authorization
- Once you are Authorized to exploit the rights you may get a reference to
 - ◆ the Protection Information to Unprotect the specific object segment and/or digital resources
- License and Protection Information are typically located in external and remotely located Servers
 - ◆ but may be cached on the terminal device if allowed by the license issuer
- During all these phases the AXMEDIS Certifier and Supervisor verify integrity and certificate

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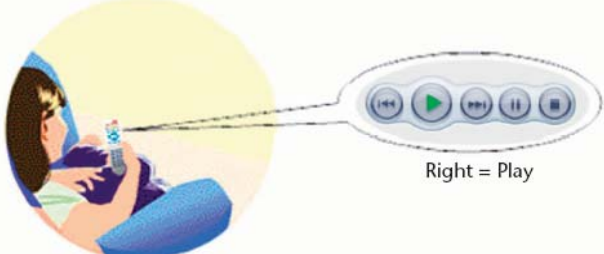
An example of REL statement



Condition = November 2003



Resource = Ocean Wilds

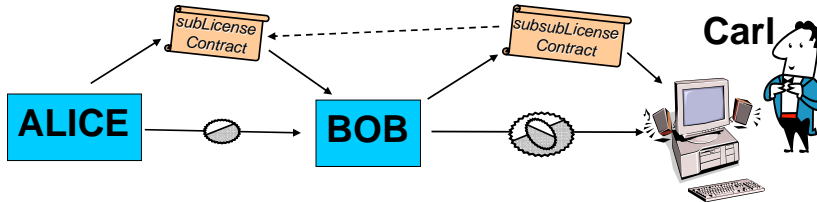


Right = Play

- Rosy can Play 3 times the Ocean Wilds in November 2003.

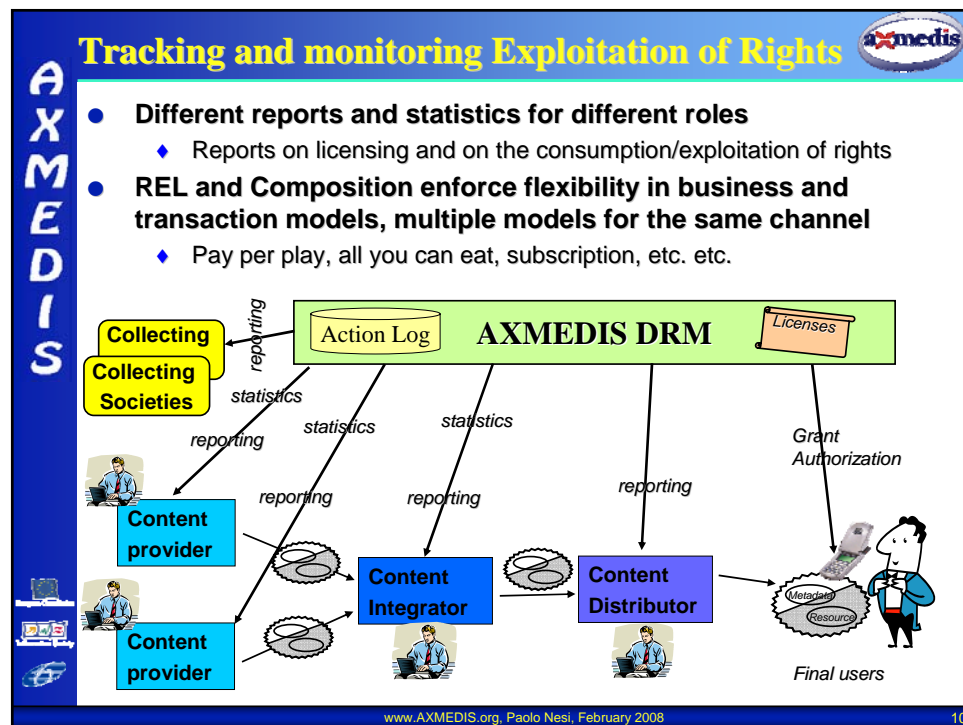
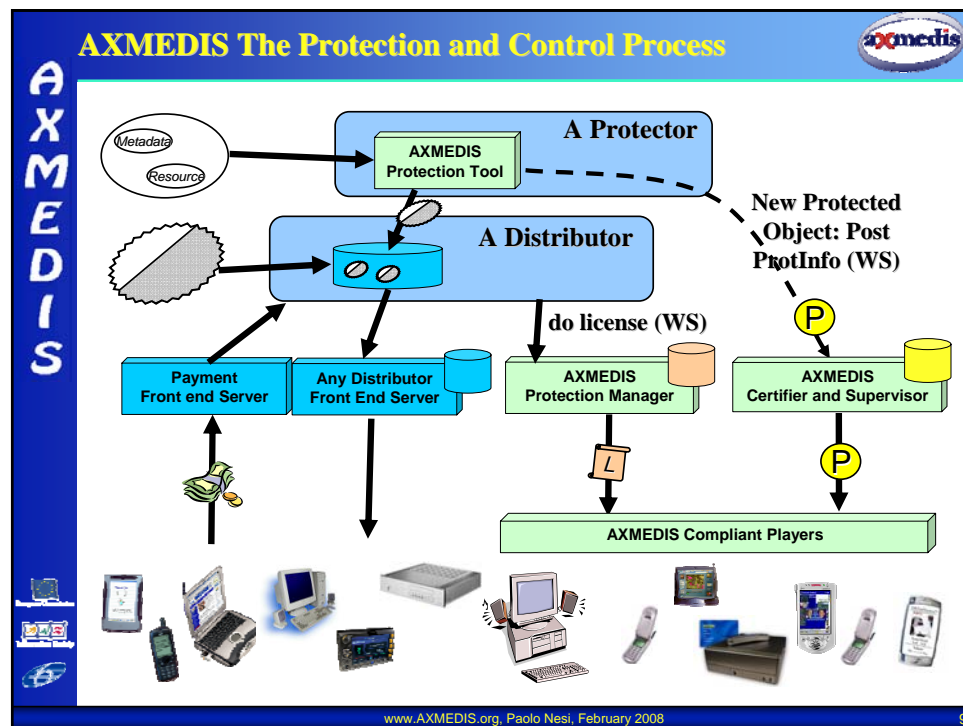
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Managing License Chain, B2B and B2C



- **Alice states** "Bob has the right to issue a license to anyone to print the book in Italy"
- **Bob states** "Carl has the right to print the book in Italy"
- To solve the SubSubLicense for Carl all the connected Licenses are needed
- Licenses have to be accessible on Processing Engine
- Alice can revoke the license to Bob

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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, Mobiles
License Proprietary: number of rights	Licenses MPEG-21 REL: Expandable dictionary, Any type of rights, Licenses OMA
Authentication of Player	Authentication of device, user, domain, etc.
Revocation per Player	Revocation per device, user, etc.,
Revocation per license	Revocation per license
digital resources that can be included and protected	Any digital format, of any type
Media content	Single audio, video, image, doc, and Cross media: SMIL, HTML, SVG, MPEG-4,...
Customizable Tools	Customizable Tools: servers and player clients

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AXMEDIS Cross Media Content

Any content inside a package:

- Video, Audio, Documents, Images, games, animations, WEB pages, tools, etc.
- compliant and extend MPEG-21

AXMEDIS content that can

- create content for other devices, etc.
- satisfy social activity, user annotations, user content production, etc.
- be digitally streamed on TV (DVB-T/DVB-S/DVB-H with the same level of interactivity)
- be protected with the needed flexibility
- be distributed on different terminals/devices and via different channels.
- be customized for culture and language



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Interoperability among devices

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- **The user likes 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, using there, and passing and playing it at home on the TV set
 - ♦ Etc.....
- **AXMEDIS interoperability satisfies these demands among a large set of devices:**
 - ♦ PC, STB/PVR/HDR, PDA, Mobiles, etc.
 - ♦ You can buy once to use on all

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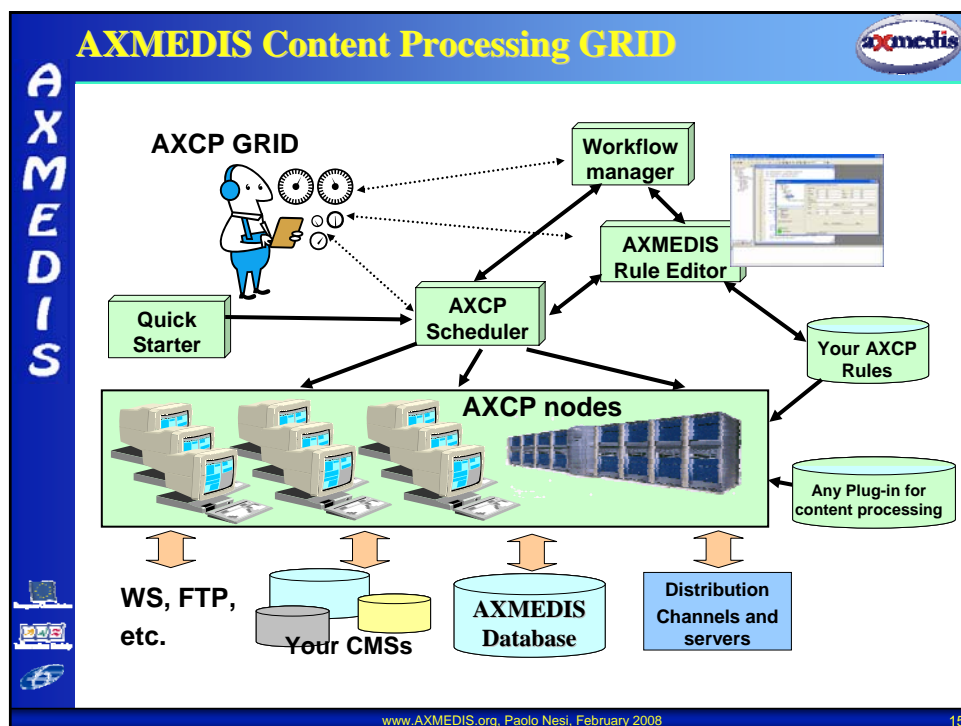
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Interoperable Players

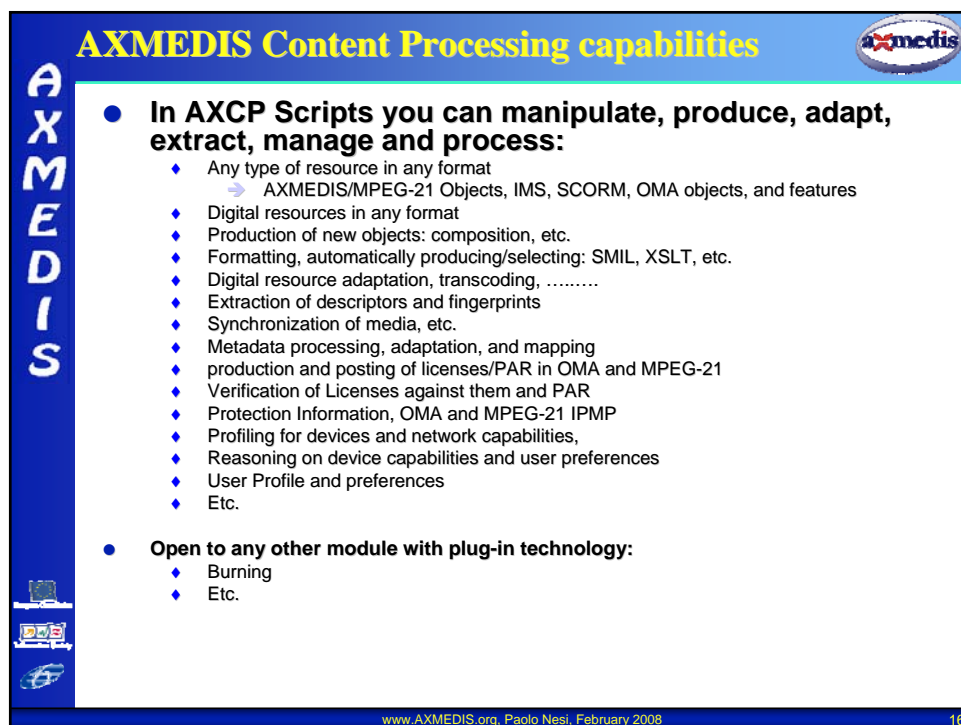
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- **PC players with full functionalities**
 - ♦ Stand Alone Player for Windows
 - ♦ Version with Replaceable skins
 - ♦ Active X Player for Windows, for:
 - Integrating player in Html pages
 - Microsoft Internet Explorer Browser
 - Macromedia tools Authorware
 - Realising customised AXMEDIS Players based on .NET
 - ♦ Plug in for Mozilla Internet Browser
 - Integrating player in Html pages
 - Two different skins
- **PDA player:**
 - ♦ MPEG-4, SMIL, HTML
- **STB player:**
 - ♦ for IPTV
 - ♦ for DVB-S
 - ♦ MPEG-2, MPEG-4
- **Mobile player:**
 - ♦ A pure Java player will be ready for Feb 2008
 - ♦ SMIL support with Audio Visual, MMAPi of Java

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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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