Metadata and rights interoperability for content interchange between TV programs producers

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Catalunya (Catalonia)
7 M habitants, 946 towns

Over 100 local TV stations.
Without proper legislation.
Neither legal nor illegal. Tolerated.
Now in Spain:

(re-)introducing the DTT
Analog closedown due to 2009
Spectrum reallocation: many local TV stations won’t be able to broadcast

From now on...
TV stations look at video over IP
Government launches strategic programs to
• provide with broadband connections
• digitalise the huge catalan audiovisual material
• facilitate the interchange of this material
XAC: Xarxa IP Audiovisual de Catalunya
(Audiovisual IP Network of Catalunya)

Pilot application for performing content search, transmission, distribution, storage and purchase of digital audiovisual contents over the net

- Research project, with 3 universities involved
- Pilot project: there’s no business model yet
- Not only for TV broadcasters: cinema school, learning content providers, etc.
XAC: Architecture

- Content providers
  - Metadata
  - Content

XAC Content Server
- Permissions for content downloading
- Content streaming / downloading
- Operations

XAC Metadata Server
- Metadata
- Rights

Metadata translator
- Content streaming / downloading

Content search
- Metadata update
- Operation authorization
- User creation / deletion / update

Permission for content downloading
- Operations content providers
Web services
Client/server and P2P possibilities
Transcoding possibilities

Key aspects of our contribution:
- Facilitate searching (metadata definition)
- Enforce digital rights (DRM mechanisms)
• 1st step: To know how the TV stations work. HW and SW used, video formats, how they catalogue, metadata used, etc. (22 interviews)

Few ‘good practices’
little semantic interoperability
Mixture of general-interest information and local information
Metadata definition

- Exhaustive comparison and alignment between all the participants’ metadata and international standards (MPEG7, TV-Anytime, SMPTE, PBCore, P/Meta)
- Collection of elements that cover all the necessities, with strong semantics, and with controlled vocabularies and controlled formats in some elements:

  The XAC Metadata Set

- Mappings to MPEG-7 and TV-Anytime, in order to be ‘standard’
- Translations from local sets to XAC MS (by hand!)
Public part:

Title          Genre          Format
Duration       Language       Synopsis
Keywords       Shooting date  Editing date
...

Special elements:

Contents: who / what / when / where
Credits: rol / person
Observations: all that don’t fit in the rest
XAC Metadata Set

Private part:

Identifiers
Tape numbers and location
Private comments
Example: GENRE

“What is about”

Controlled vocabulary in two levels:

1st level: Information, drama, music, sports, documentary, ...
2nd level for Information: politics, business, sports, ...
2nd level for Music: classical, jazz, ...
Rights definition

• To introduce DRM (digital rights management) mechanisms
  - Definition of rights, conditions and restrictions, included in a ‘License’
  - Authorisation algorithm for checking if a user can exercise a right
• MPEG-21 REL chosen
• Profile for broadcasting issues will we proposed to the standard
Conclusions

- XAC provides TV content producers with a new framework. New opportunities, new business, ...
- To elaborate a metadata set is not so easy, specially if you don’t come from scratch
- Interoperability issues concentrate on semantic aspects
- To enforce digital rights is necessary, even if you don’t want to receive money