Advene: active reading through hypervideo

Olivier Aubert - Yannick Prié
LIRIS - Université Claude Bernard Lyon 1
Outline

• Audiovisual Information Systems for scholars
• The hypervideo model
• The Advene project
  – The Advene model
  – The Advene prototype
  – Views in Advene
  – Active Reading
• Ongoing work – Conclusion
Audiovisual Information Systems for Scholars

• Various uses of AV documents
  – personal notes / work documents, pedagogical tools, testimony of the past, work of art, communication acts, ...

• Basic interaction
  – text transcriptions and notes
  – simple video navigation

• Tools should
  – accommodate the variety of needs in metadata structure and visualisation modalities
  – allow to share and adapt both structured metadata and visualisations
A hypervideo model to...

- Analyse existing innovative uses of audiovisual document
- Provide guidelines to build new hypermedia systems
The hypervideo model

Audiovisual Document AVD
The hypervideo model

Audiovisual Document AVD

Fragments

Annotations

Structure

Relation structure S

Annotation Structure AS
The hypervideo model

Audiovisual Document AVD

Fragments
Annotations
Structure

Relation structure S

Annotation Structure AS

Annotation a1
Annotation a2
Annotation a3

Views

View definitions + tools

t
The hypervideo model

Audiovisual Document AVD

Fragments

Annotations

Structure

Relation structure S

Annotation Structure AS

Views

Non-hypervideo

Hypervideo

Hypervideo: view that 1/ uses information from both the AV document and the annotation structure and 2/ gives access to the AV document temporality
A DVD seen as a hypervideo

Non-hypervideo views: plain movie, printed chapter list
Hypervideo views: subtitled movie, direct access to chapters
The Advene project

« advene: to be added to something or become a part of it, though not essential » (Webster 1913)

- Annotate Digital Videos/DVds, Exchange on the NEt
- Data model + prototype
  - Open-source, cross-platform
  - Reuse off-the-shelf components (VLC, ZPT, web browser)
  - Rapid development (python)
  - Testbed for experiments
- Research platform
  - new audiovisual interaction modalities
  - user-lead innovation
**Principle**

Package creation
(definition of annotations and views)

- **Annotate videos**

---

Advene: active reading through hypervideo – ACM HT 05
Principle

Package sharing:
- copy through webserver, e-mail, etc.
- reference through imports

Package creation
(definition of annotations and views)

- Annotate videos
- Share metadata and analyses
Principle

Package sharing:
- copy through webserver, e-mail, etc.
- reference through imports

Package creation
(definition of annotations and views)

- Annotate videos
- Share metadata and analyses
- **Visualise the metadata in user-specifiable ways**

Package utilisation
(visualisation, enrichment)
The Advene data model

Element addressing with TALES (ZPT):

```
package/annotationTypes/PartOfSpeech/annotations/first
annotation/content/data
annotation/fragment/duration
```
**Static (hypertext) views**

The different parts of the speech:

- [Details](a/absolute_url/view/S_part_details)

Template-based X(HT)ML generation (ZPT)

Links to the video and views (ad-hoc, static)

Images extracted on the fly
Dynamic (enriched video) views

- Event-Condition-Action paradigm
- View = set of rules
- Example: if the event *Beginning of annotation* occurs (event) and the annotation type is *PartOfSpeech* (condition), then display the part title as a caption and a navigation popup to go to the next and previous part (action).

<table>
<thead>
<tr>
<th>Events</th>
<th>Conditions</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Annotation start/end</td>
<td>- Allen conditions</td>
<td>- Basic player control</td>
</tr>
<tr>
<td>- Player start/pause</td>
<td>- Order, inclusion</td>
<td>- Advanced player control</td>
</tr>
<tr>
<td>- ...</td>
<td>- ...</td>
<td>- GUI actions (popups, ...)</td>
</tr>
</tbody>
</table>
Dynamic view rendering
Active Reading with Advene

• Note taking
  – On-the-fly note taking (timestamped)
  – Annotation assistants (automatic/semi-automatic generation)

• Annotation visualisation
  – Ad-hoc views, user-specified static/dynamic views
  – Document production

• Annotation processing
  – Schema evolution
  – Queries

• Collaboration
  – Package sharing (by copy or reference)
Conclusion

• Main Advene features:
  – flexible metadata structure
  – user-specifiable visualisations
  – metadata and visualisation specifications exchange

• Analysing and building systems with the hypervideo model
Ongoing work

- Prototype:
  - Usability issues (helpers, WYSIWYG editor, ...)
  - Common, reusable views and schemas definition (emergent discovery)
  - Package repositories creation
  - Schema evolution

- Collaborations (Incorporactions, CRDP)
- Theoretical analyses (document temporalities, hypervideo perception, nature of document)
The end...

Thank you for your attention

The prototype is available from http://liris.cnrs.fr/advene/
Views and hypervideos

• Annotated AV document:
  – movie + shot/sequence decomposition

• Non-hypervideo views
  – the movie alone
  – a plain table of contents

• Hypervideo views
  – Movie with
    • sequence title inserted on the video
    • links to the next/previous shot or sequence
  – Hypertext table of contents linked with the movie

• Hypervideo concept uses
  – Analysis of existing hypervideos
  – Guidelines to build new systems
Views and hypervideos

- Annotated AV document:
  - movie + shot/sequence decomposition

- Non-hypervideo views
  - the movie alone
  - a plain table of contents

- Hypervideo views
  - Movie with
    - sequence title inserted on the video
    - links to the next/previous shot or sequence
  - Hypertext table of contents linked with the movie

- Hypervideo concept uses
  - Analysis of existing hypervideos
  - Guidelines to build new systems
Views and hypervideos

- Annotated AV document:
  - movie + shot/sequence decomposition
- Non-hypervideo views
  - the movie alone
  - a plain table of contents
- Hypervideo views
  - Movie with
    - sequence title inserted on the video
    - links to the next/previous shot or sequence
  - Hypertext table of contents linked with the movie
- Hypervideo concept uses
  - Analysis of existing hypervideos
  - Guidelines to build new systems
Views and hypervideos

- Annotated AV document:
  - movie + shot/sequence decomposition
- Non-hypervideo views
  - the movie alone
  - a plain table of contents
- Hypervideo views
  - Movie with
    - sequence title inserted on the video
    - links to the next/previous shot or sequence
  - Hypertext table of contents linked with the movie
- Hypervideo concept uses
  - Analysis of existing hypervideos
  - Guidelines to build new systems
Targeted categories of users

- Advanced users: creation from scratch
- Knowledgeable users: imitation
- Learning users: use of assistants and WYSIWYG editors
- Read-only users: simple visualisation