

ECHO Metadata Model

- ◆ This model originated from our experience in the ECHO project (European CHRONicle On-line)
 - ECHO is an EC funded IST project
 - ECHO aims at providing
 - remote access to collection of historical documentary audio-video resources
 - a software infrastructure to support digital video archives
 - an extensible and interoperable architecture

ECHO

The approach

Extends the IFLA-FRBR model

Four entities used to describe different aspect of a

- resource:
- **WORK** Describes a distinct intellectual or artistic creation
 - **EXPRESSION** Describes a distinct intellectual or artistic realization of a work in a particular medium or form
We do not specify if we realize a book, a film or a CD-ROM
 - **MANIFESTATION** Intellectual or artistic realization of a work in a particular medium or form, or a specific instance of a work
choreographic notation, sound image, etc.
 - **ITEM** Physical embodiment of an expression
of a work or expression
books, maps, sound, CD_ROM
- A single exemplar of a manifestation
- A single exemplar of a manifestation that is the result of a terrorist attack
- A documentary on the terrorist attack
- Interviews on the terrorist attack
-

Work e sue varianti

Foto



Versioni

- Negativo fotografico
- Copie del negativo
- Stampe fatte dal negativo
- Versione digitalizzata del negativo
- Copie su CD
- Versione su sito web

Modello IFLA

Work Idea astratta di un'opera, per es.,

- *L'Iliade, 2001 Odissea nello spazio*
- Il sito web del dipartimento di lettere
- La quinta sinfonia di Beethoven
- ecc.

Modello IFLA

Expression Un work si realizza attraverso un'espressione, per es.

- *L'Iliade* ha espressioni orali, espressioni scritte, filmati, ecc.
- *2001 odissea nello spazio* ha una versione scritta in formato libro, una versione scritta in formato sceneggiatura, una versione filmata, ecc.
- Un'opera musicale ha lo spartito e le esecuzioni
- Il software ha il codice sorgente e l'eseguibile
- Vi sono molti work che hanno una singola espressione.

Modello IFLA

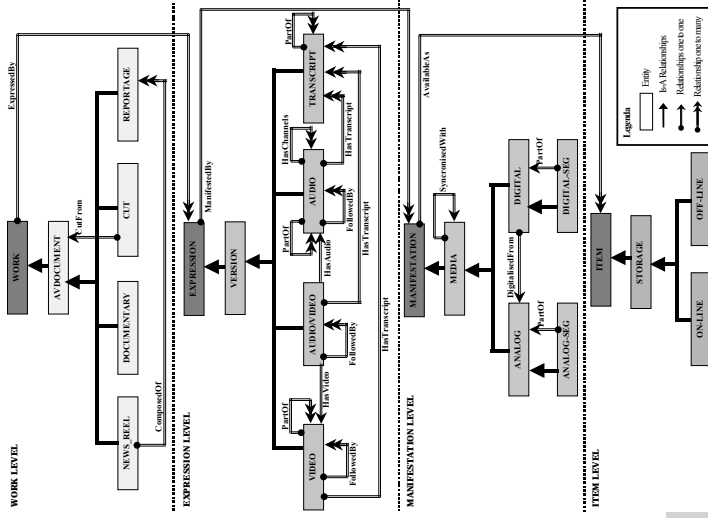
Manifestation. Una espressione può essere fornita in una o più manifestazioni, per es.

- Il testo dell'*Iliade* è stato fornito in numerosi manoscritti e libri a stampa
- Un'opera musicale può essere distribuita su CD, oppure trasmessa per radio o per televisione

Modello IFLA

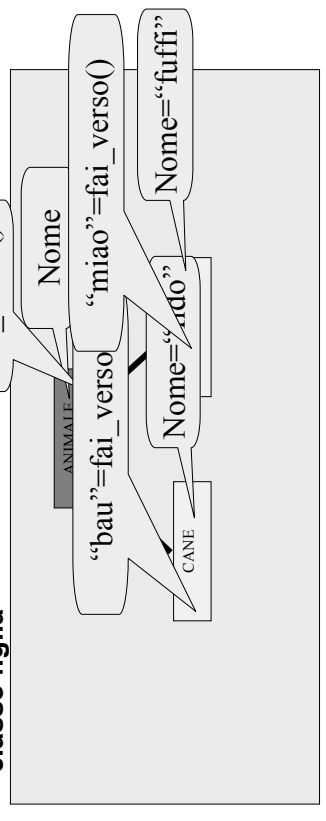
Item. Quando si hanno diverse copie di una manifestation, ognuna di esse è un item separato, per es.

- Una specifica copia del libro
- Una specifica rappresentazione dell'opera musicale
- Uno specifico CD
- Ecc.



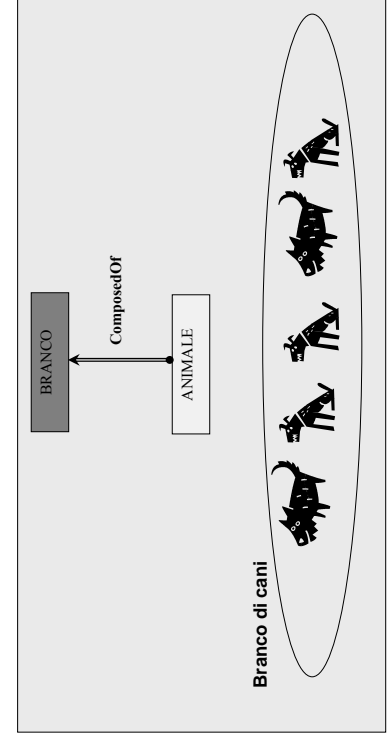
Ereditarietà: Relazioni di tipo "is a"

- ◆ definiscono una relazione di specializzazione di una classe più generale
- ◆ Tutti gli attributi e i metodi vengono ereditati dalla classe figlia

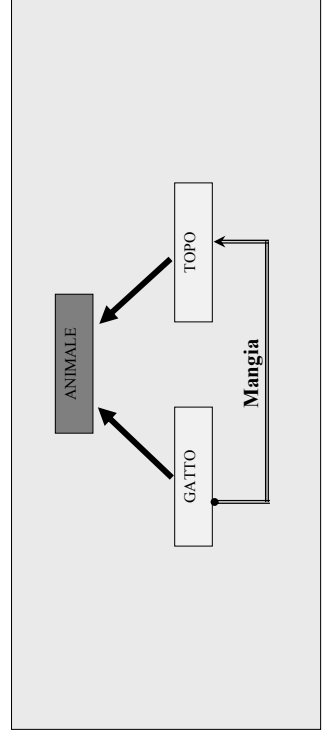


Altre relazioni (cont.)

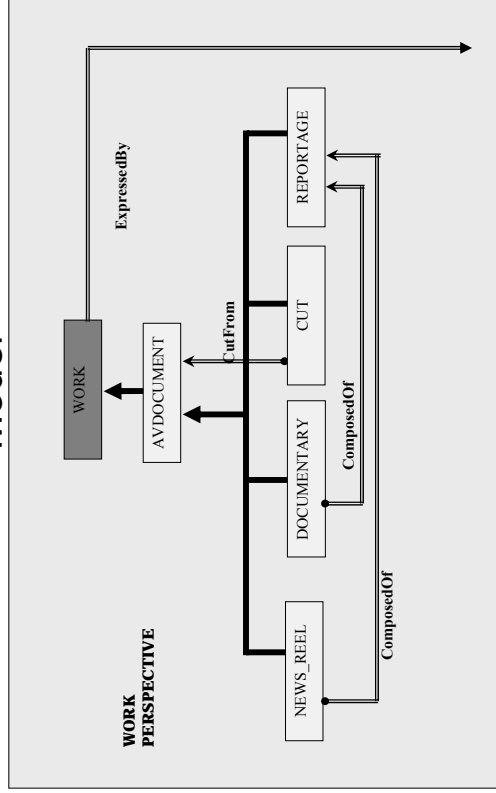
- ◆ es.: "composed of"



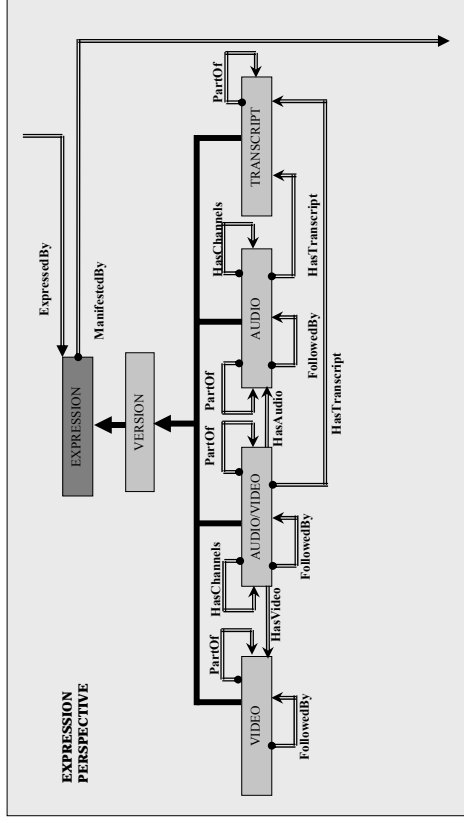
Altre relazioni (cont.)



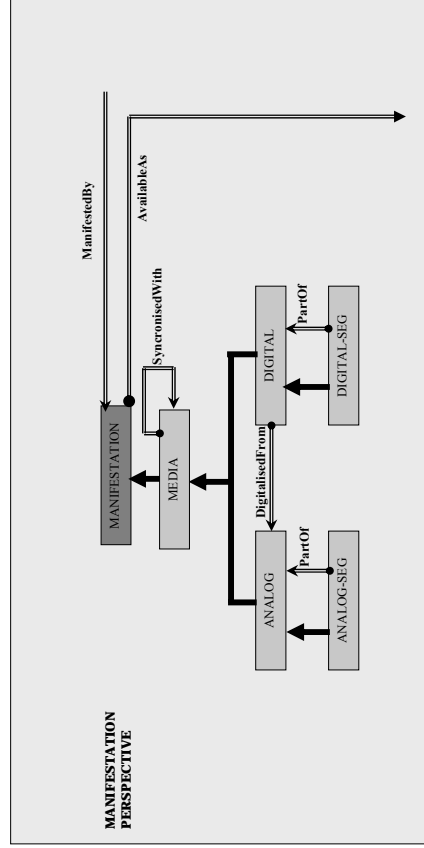
Model



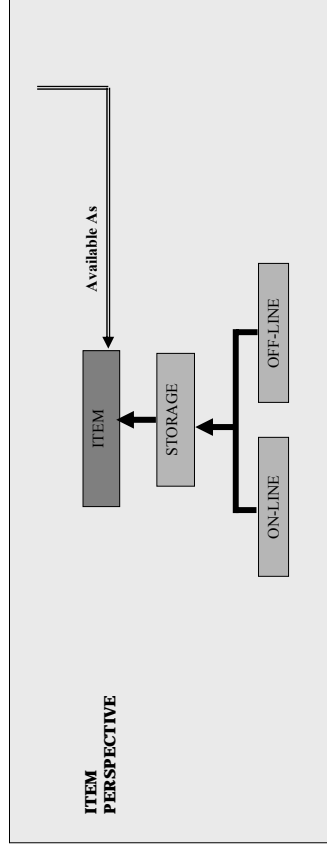
Proposed Model (cont.)



Proposed Model (cont.)



Proposed Model (cont.)

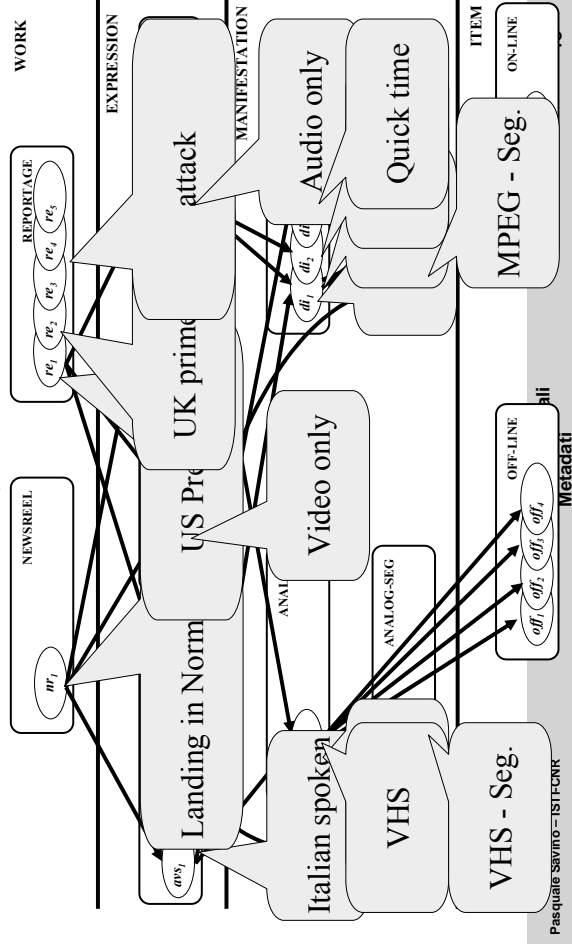


Running example

◆ Newsreel about the “Landing of the Allied Forces to Normandy”

- It is composed of several reportages
- There are several national versions
 - e.g. Italian and French
- Each version is available on different supports
 - e.g. VHS tapes, MPEG files
- There are several copies of the VHS tape with different preservation quality
- There are several copies of the MPEG file with different access speed

Running example



Informatica Umanistica

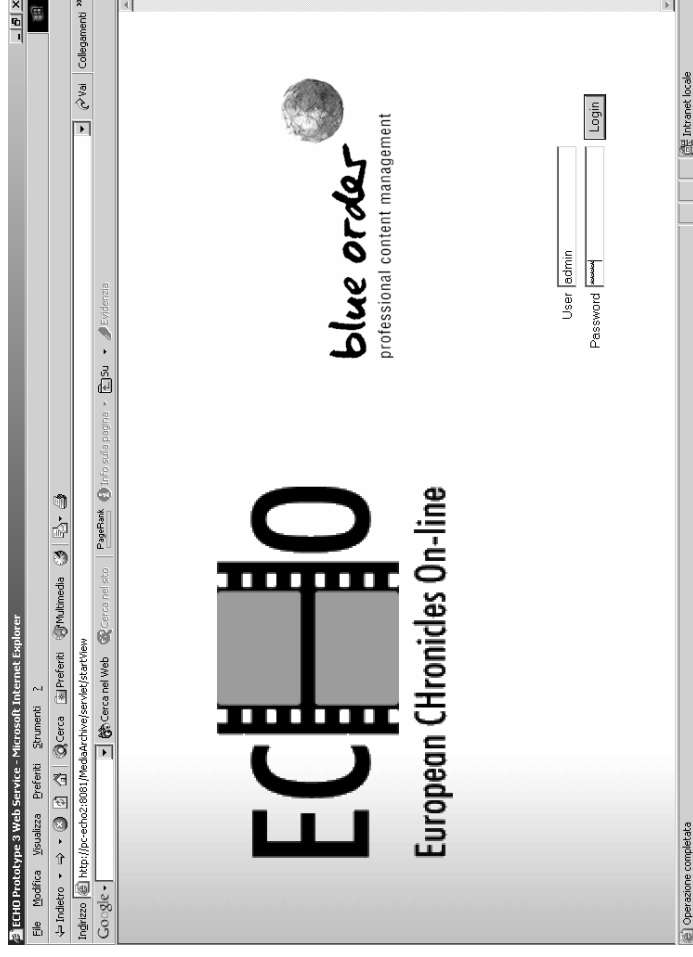
Echo Retrieval Interface

Cercare, Navigare ed editare metadati di tipo AudioVideo

Informatica Umanistica

Logging

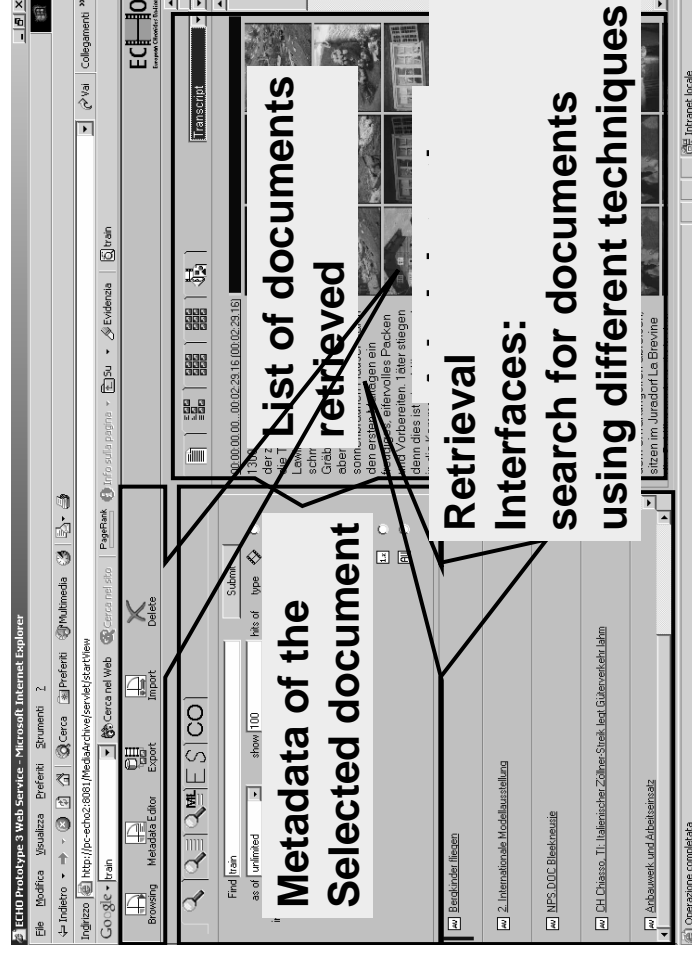
Università di Pisa



Informatica Umanistica

The retrieval Interface presentation

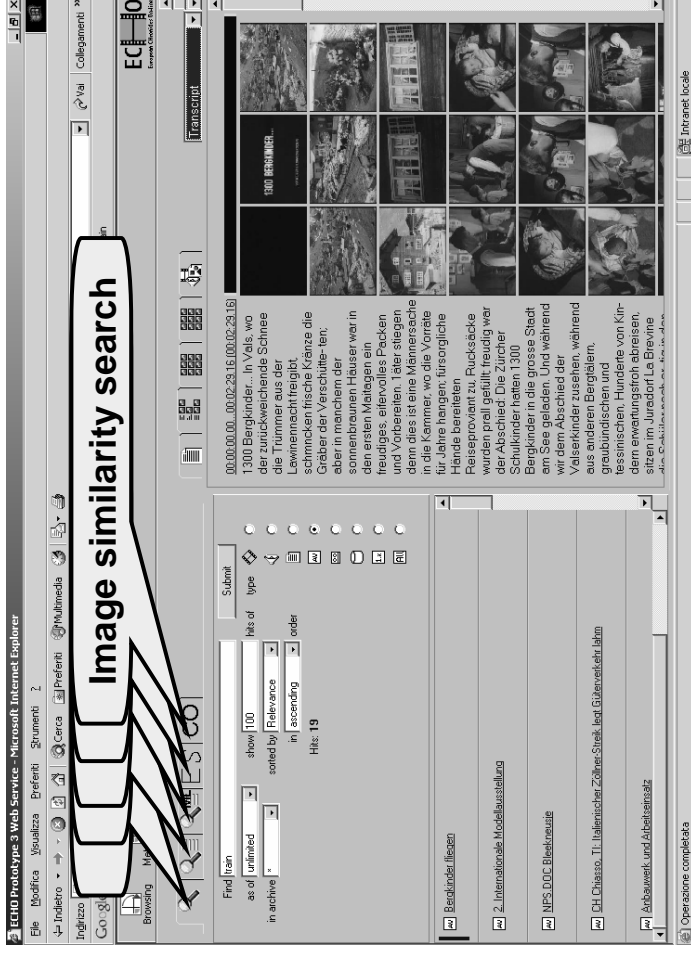
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Informatica Umanistica

Retrieval tools interfaces

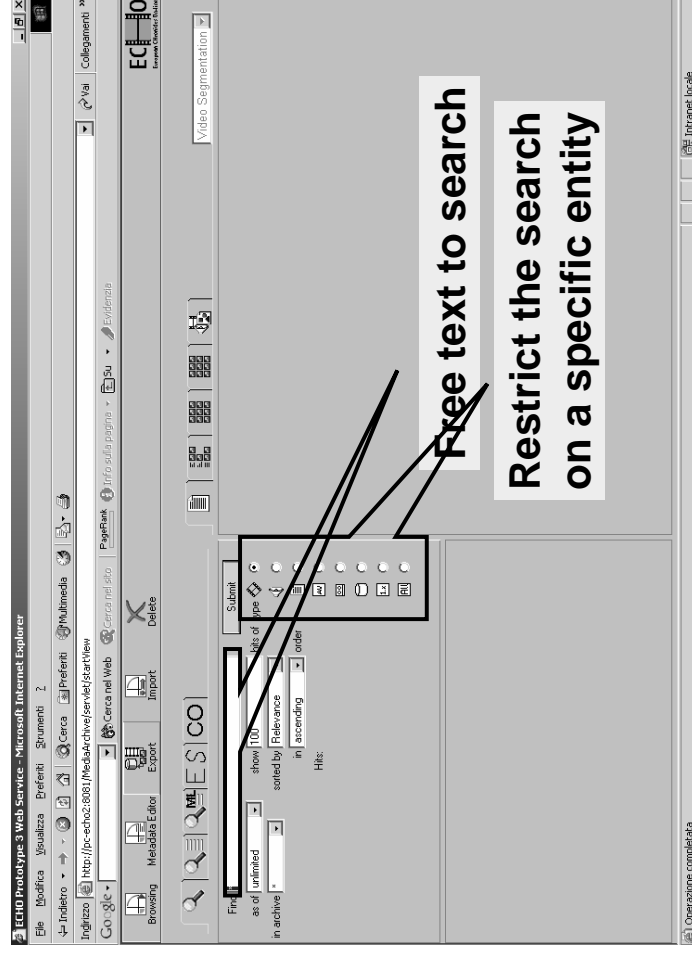
Università di Pisa



Informatica Umanistica

Free text search interface

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File Modifica Visualizza Preferiti Strumenti ?

Inglese

Co: g.c.

Browser Melodica Editor Export Import Delete

Find

as of Unlimited

show 100

sorted by Relevance

in archive

order

in ascending

order

Hits

IMA

IL NAA

MEMORIEAV

Submit

hits of type

Operazione completata

Intranet locale

Restrict the search on a specific archive

File Modifica Visualizza Preferiti Strumenti ?

Inglese

Co: g.c.

Browser Melodica Editor Export Import Delete

Find

as of Unlimited

show 100

sorted by Relevance

in archive

order

in ascending

order

Hits

ascending

descending

Submit

hits of type

Operazione completata

Intranet locale

Order of sorting

File Modifica Visualizza Preferiti Strumenti ?

Inglese

Co: g.c.

Browser Melodica Editor Export Import Delete

Find

as of Unlimited

show 100

sorted by Relevance

in archive

order

in ascending

order

Hits

Unlimited

This hour

Today

This month

This year

Submit

hits of type

Operazione completata

Intranet locale

period of creation time

File Modifica Visualizza Preferiti Strumenti ?

Inglese

Co: g.c.

Browser Melodica Editor Export Import Delete

Find

as of Unlimited

show 100

sorted by Relevance

in archive

order

in ascending

order

Hits

Relevance

Work

Stable

Comment

Duration

TopicID

Archived

Production

Broadband

Broadcast

Submit

hits of type

Operazione completata

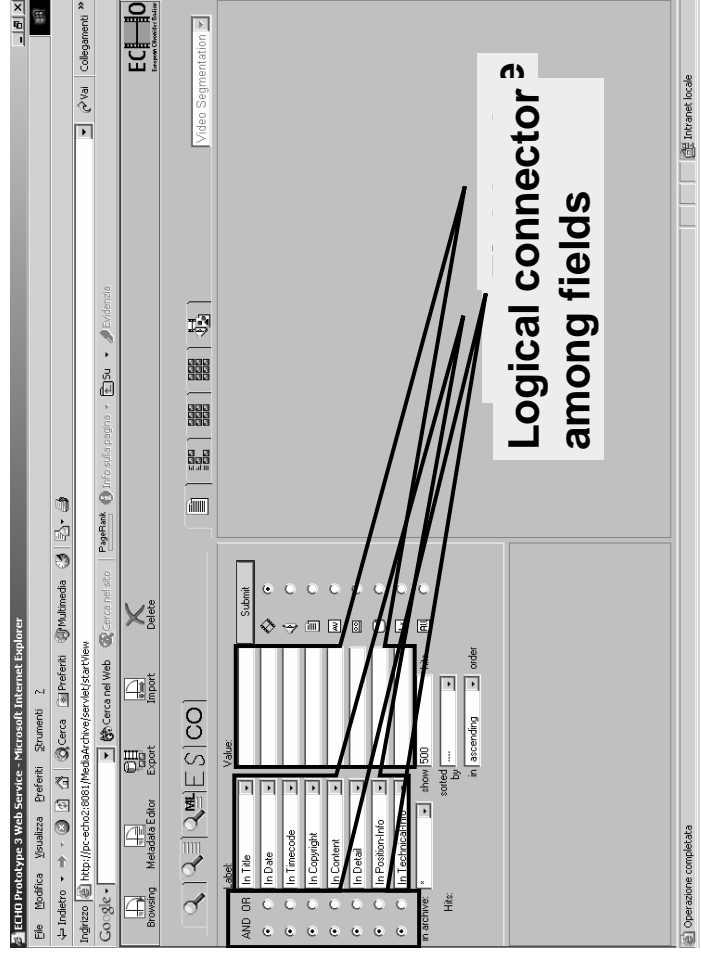
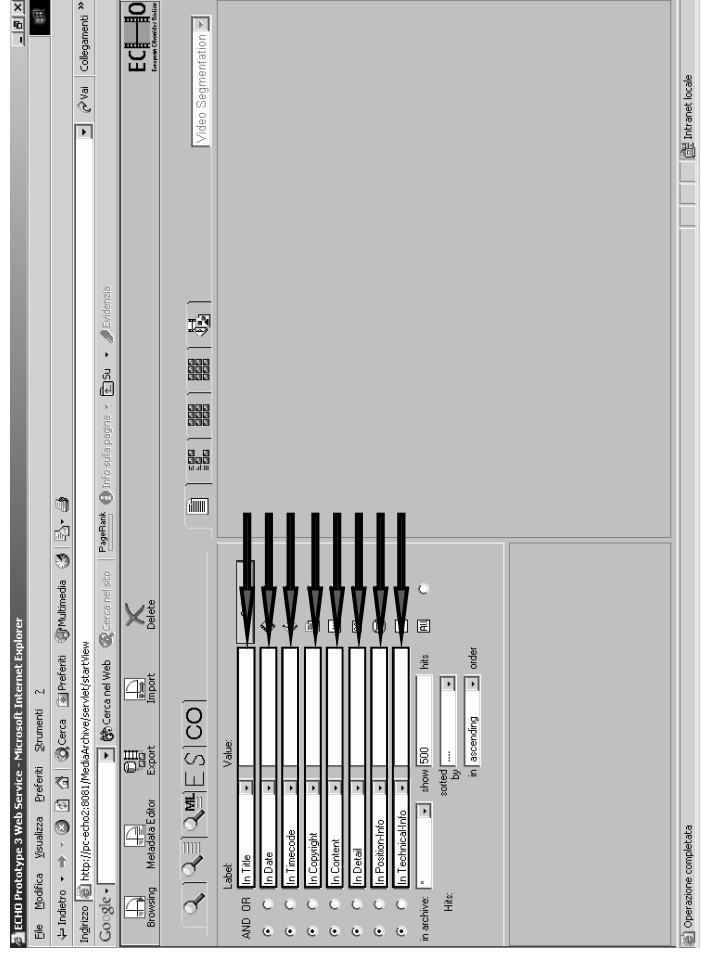
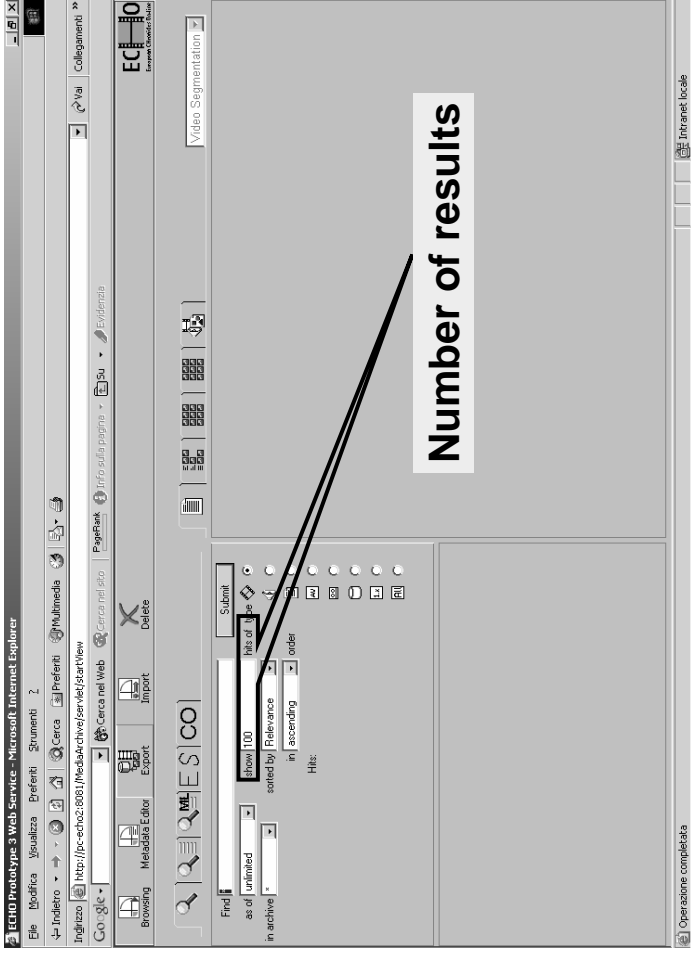
Intranet locale

Strategies of sorting results

Informatica Umanistica

Fielded search interface

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Microsoft Internet Explorer - ECDIO Prototipo 3 Web Service - Microsoft Internet Explorer

Indirizzo: <http://pc-ehc-2:8083/MeasArchivWebServletView>

Co: g:le

Label: In Title, In Date, In Timecode, In Copyright, In Content, In Detail, In Position-Info, In Technical-Info

Value: show 500 hits

sorted by: in ascending order

in archive: in ascending order

Hit: INA, NAA, MEMORIAY

Operazione completata

Archive choice

Microsoft Internet Explorer - ECDIO Prototipo 3 Web Service - Microsoft Internet Explorer

Indirizzo: <http://pc-ehc-2:8083/MeasArchivWebServletView>

Co: g:le

Label: In Title, In Date, In Timecode, In Copyright, In Content, In Detail, In Position-Info, In Technical-Info

Value: show 500 hits

sorted by: ascending, descending

in archive: in ascending order

Hit:

Operazione completata

order

Microsoft Internet Explorer - ECDIO Prototipo 3 Web Service - Microsoft Internet Explorer

Indirizzo: <http://pc-ehc-2:8083/MeasArchivWebServletView>

Co: g:le

Label: In Title, In Date, In Timecode, In Copyright, In Content, In Detail, In Position-Info, In Technical-Info

Value: show 500 hits

sorted by: in ascending order

in archive: in ascending order

Hit:

Operazione completata

Field choice

Microsoft Internet Explorer - ECDIO Prototipo 3 Web Service - Microsoft Internet Explorer

Indirizzo: <http://pc-ehc-2:8083/MeasArchivWebServletView>

Co: g:le

Label: In Title, In Date, In Timecode, In Copyright, In Content, In Detail, In Position-Info, In Technical-Info

Value: show 500 hits

sorted by: Title, Production date, Ingrid date, Ingrid date, CollaborationID

in archive: in ascending order

Hit:

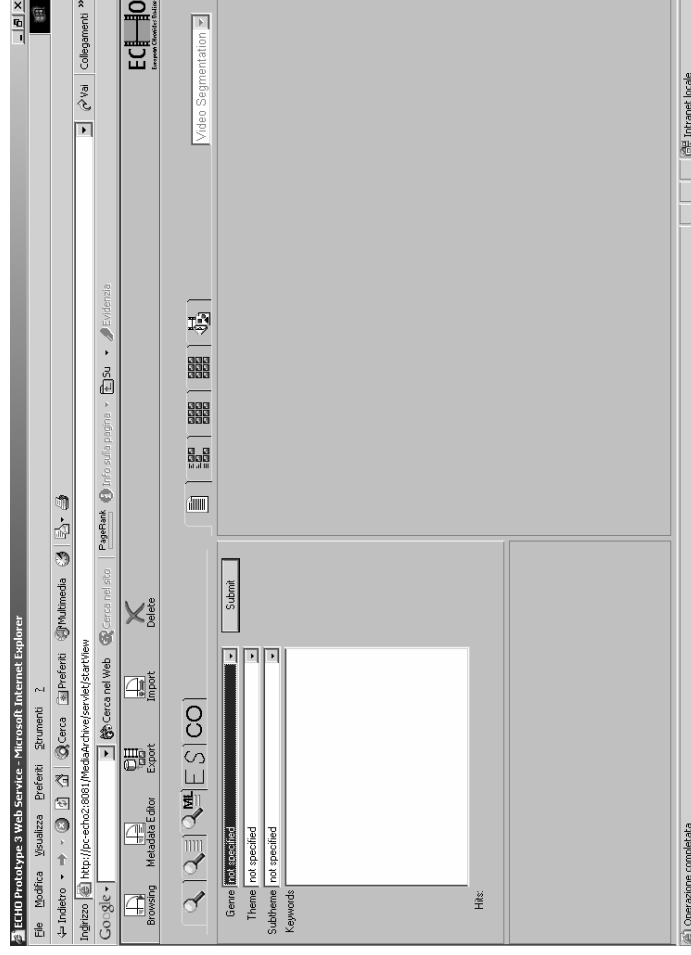
Operazione completata

sorting

Informatica Umanistica

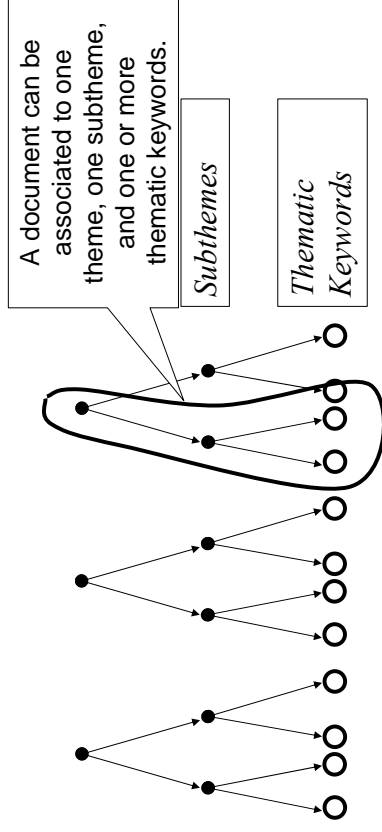
Multilingual classification

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Classification tree

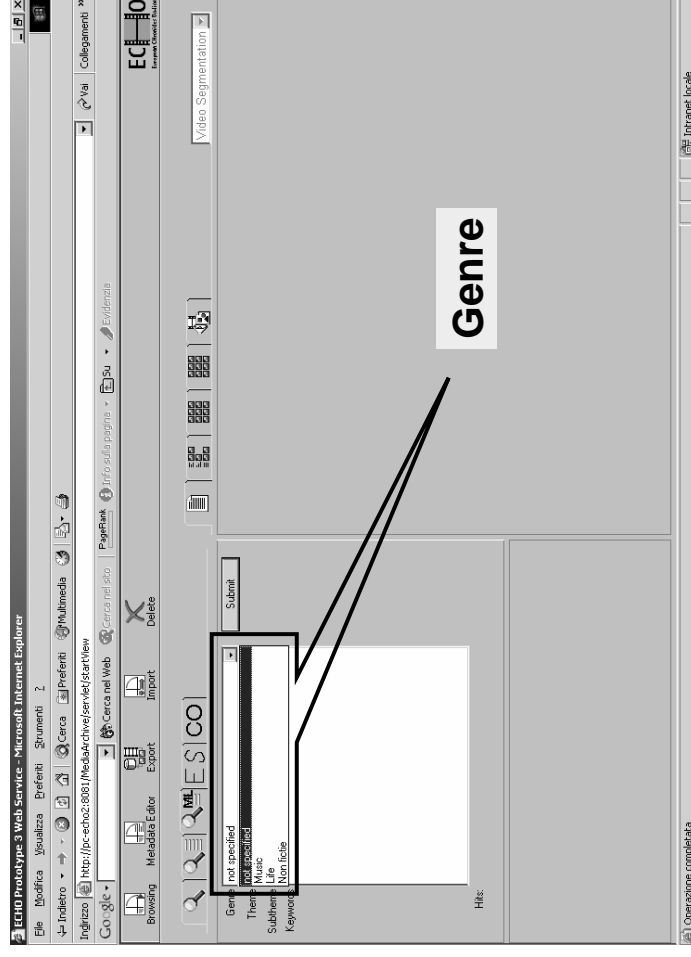
- ◆ The documents in the collection are classified on the basis of Genres, and Themes, Subthemes, and Thematic keywords. The label of these categories are translated in 5 language (English, Italian, Dutch, French, and German).

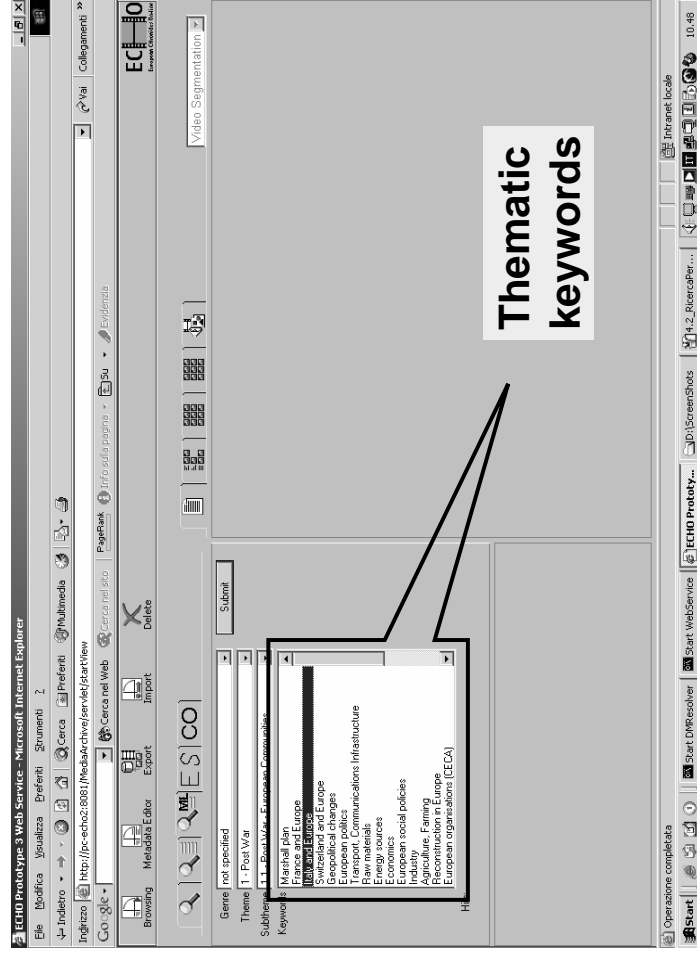
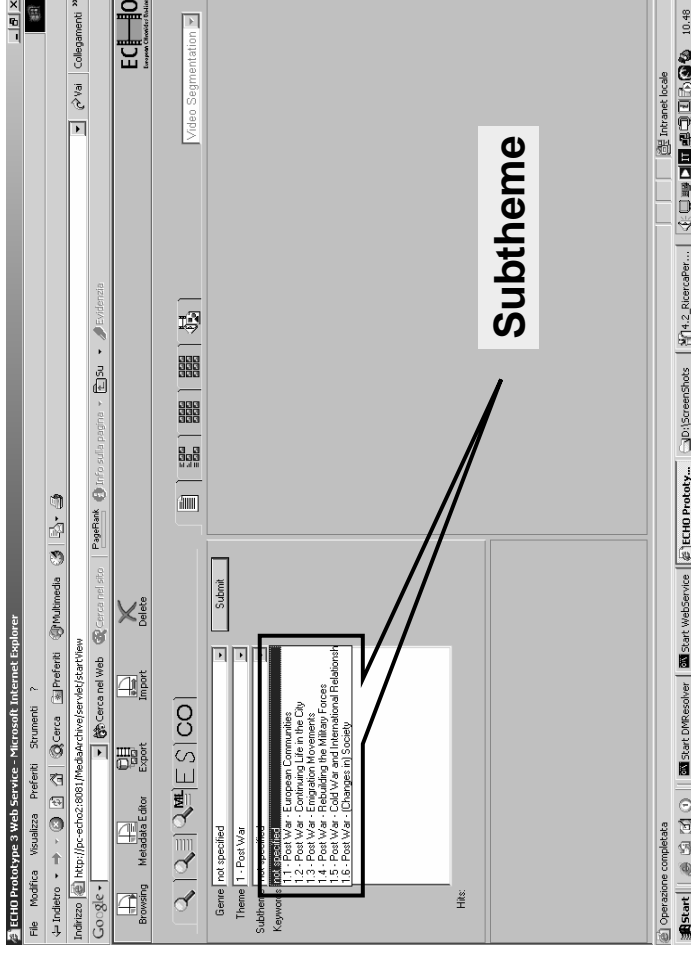
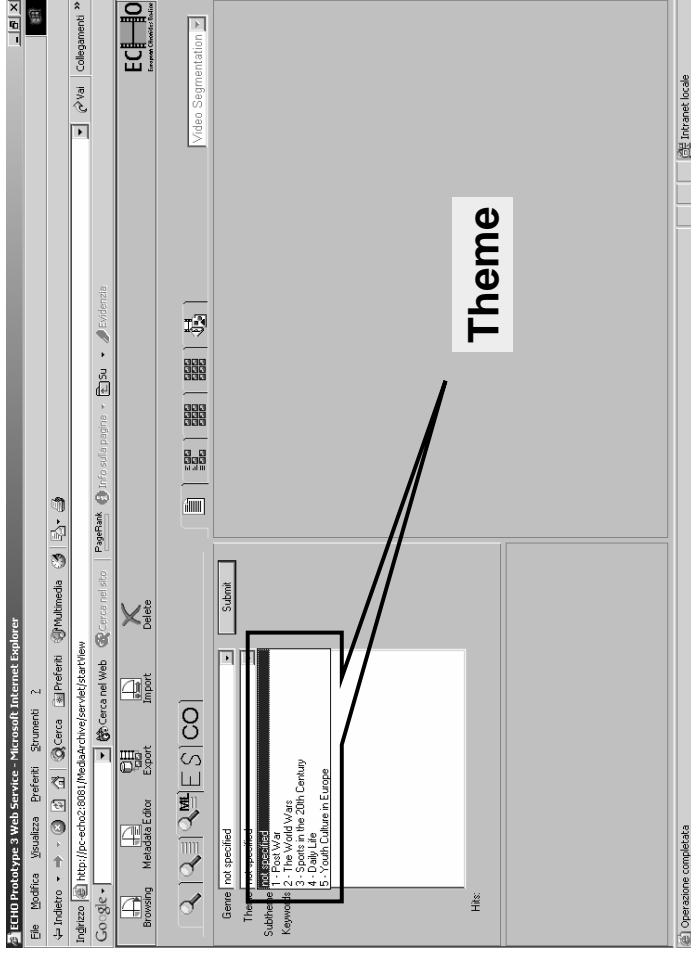


Pasquale Savino – ISTI-CNR

Biblioteche Digitali
Metadati

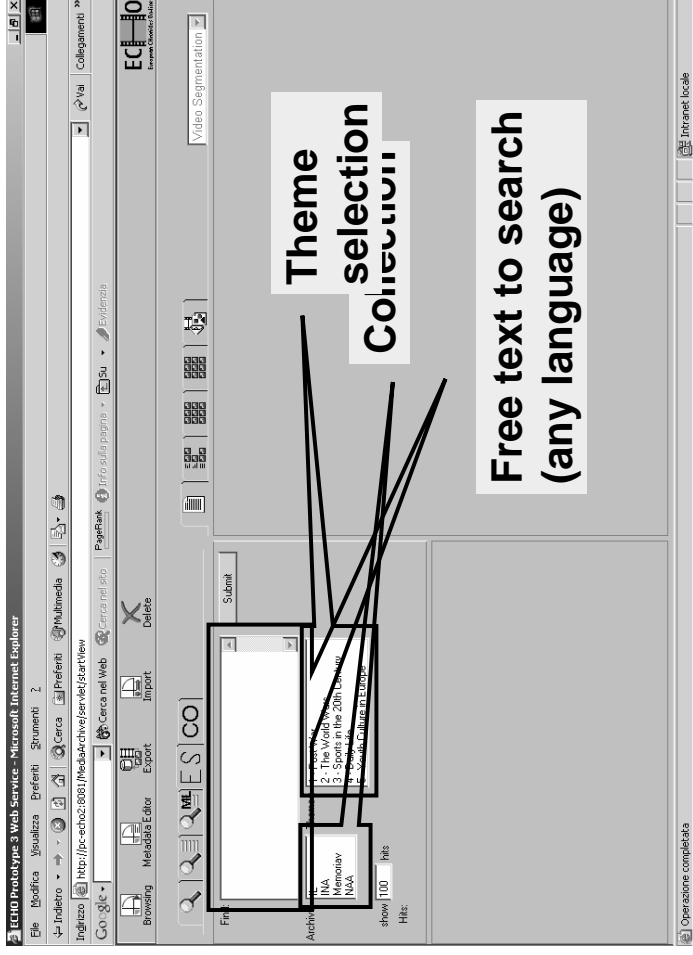
42





Informatica Umanistica

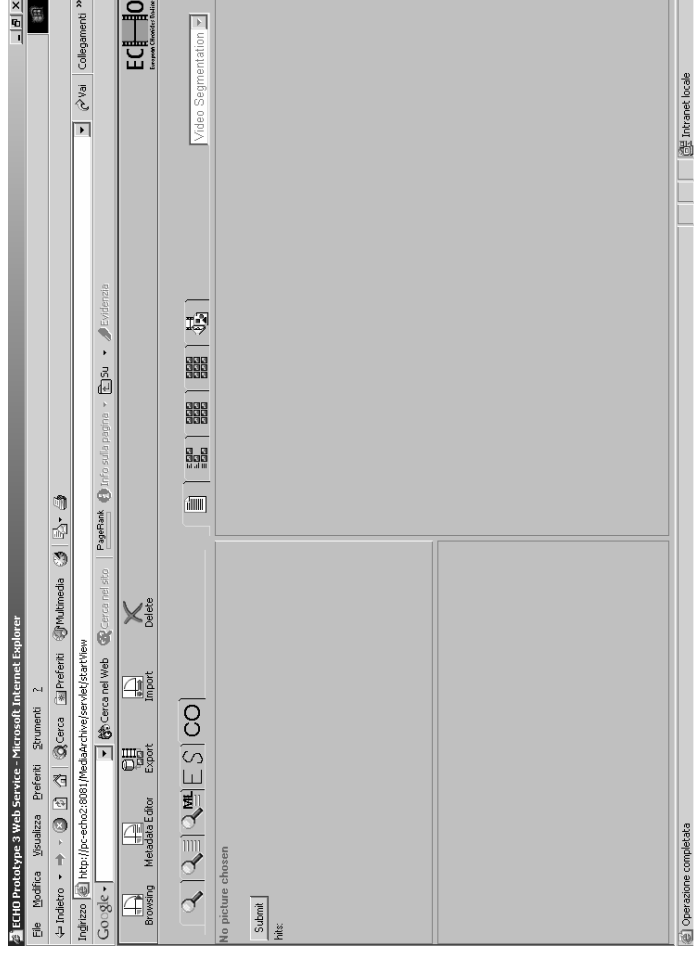
Crosslanguage retrieval interface



Informatica Umanistica

Image similarity search

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Informatica Umanistica

Browsing the document structure

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ECIO Prototyp 3 Web Service - Microsoft Internet Explorer

Find Item
as of unlimited
in archive *

show 100
sorted by Relevance
in ascending order

Hit: 19

metadata

Barakinder fliegen
2. Internationale Modellbauausstellung
MFS.DOC Bleedkontrolle
CH Chasso, T.I. Italienischer Zöllner-Steak, leat Gütenverleht, lehm
Anbauwerk und Arbeitssatz

Operazione completa

Result set

ECIO Prototyp 3 Web Service - Microsoft Internet Explorer

Find Item
as of unlimited
in archive *

show 100
sorted by Relevance
in ascending order

Hit: 19

AV-Document

Version
Media
Storage

Work Title: Bergkinder fliegen
Duration: 00:02:29:16
Date of Ingest: 22.11.2001-19:05:50
Material: video
ECHO Model Entry

Expressed by: Bergkinder fliegen (Version object)
Genre: Newsreel
Description: Text: 1300 Bergkinder // Film über Besuch von Kindern aus den Bergen in Zürich, CH Vals: Gräber von Leinenoeplem / Verpacken von Reiseproviant / Kinder in Busse steigend, La Brevine, Schüler im

ECIO Prototyp 3 Web Service - Microsoft Internet Explorer

Find Item
as of unlimited
in archive *

show 100
sorted by Relevance
in ascending order

Hit: 19

Word "train" found

Barakinder fliegen
2. Internationale Modellbauausstellung
MFS.DOC Bleedkontrolle
CH Chasso, T.I. Italienischer Zöllner-Steak, leat Gütenverleht, lehm
Anbauwerk und Arbeitssatz

Operazione completa

ECIO Prototyp 3 Web Service - Microsoft Internet Explorer

Find Item
as of unlimited
in archive *

show 100
sorted by Relevance
in ascending order

Hit: 19

Word "train" found

Expressed by: Newsreel
Genre: Newsreel
Description: Text: 1300 Bergkinder // Film über Besuch von Kindern aus den Bergen in Zürich, CH Vals: Gräber von Leinenoeplem / Verpacken von Reiseproviant / Kinder in Busse steigend, La Brevine, Schüler im Schulzimmer stehend, Zürich: Einkehr im Bahnhof / Kinder Flugzeug besichtigend / Rundflug für Kinder / singende Kinder
Keywords: Luft, Weltbaum, Jugend
Thematic Keywords: Elementary education
Themes: 4-Daily Life
Subphrases: 4.3 - Daily Life - Education
English Abstract: Mountain children flying. Text: 1300 mountain children // Film about mountain children in Zürich, CH Vals: graves of avalanche victims / children getting on a bus / Zürich, arrival at station, children looking at aircraft / night for children / singing children
Description: DE
Language: DE
Production Date: 1951-05-18
Locations: Vals, La Brevine, Zürich

ECHO Prototype 3 Web Service - Microsoft Internet Explorer

Find Item: show 100 hits of type sorted by Relevance in ascending order. Hits: 19

Work Title: Bergkinder fliegen
Duration: 00:02:23:16
Date of Ingest: 22.11.2001-19:05:50
Material: mpeg
ECHO Model Entity

Diagram: AV-Document (arrow to) Version (arrow to) Media (arrow to) Storage (arrow to) Video (arrow to) Audio (arrow to) Transcript (arrow to)

Available as (Storage object)
Manifested from (Version object)

Manifested by (Media object)
Has Video (To Video object)
Has Transcript (To Transcript object)
Has Audio (To Audio object)
Expressed from (AVDocument object)

Search results: Bergkinder fliegen, 2. Internationale Modellausstellung, MFS.DOC Bleibkonste, CH Chasso, T.I. Ibernischer Zöhrer, Steak, leat, Güterverkehr, lahm, Anbauwerk und Arbeitssatz, Operazione complessiva

ECHO Prototype 3 Web Service - Microsoft Internet Explorer

Find Item: show 100 hits of type sorted by Relevance in ascending order. Hits: 19

Work Title: Bergkinder fliegen
Duration: 00:02:23:16
Date of Ingest: 22.11.2001-19:05:50
Material: video
ECHO Model Entity

Diagram: AV-Document (arrow to) Version (arrow to) Media (arrow to) Storage (arrow to) Video (arrow to) Audio (arrow to) Transcript (arrow to)

Manifested by (Media object)
Has Video (To Video object)
Has Transcript (To Transcript object)
Has Audio (To Audio object)
Expressed from (AVDocument object)

Search results: Bergkinder fliegen, 2. Internationale Modellausstellung, MFS.DOC Bleibkonste, CH Chasso, T.I. Ibernischer Zöhrer, Steak, leat, Güterverkehr, lahm, Anbauwerk und Arbeitssatz, Operazione complessiva

ECHO Prototype 3 Web Service - Microsoft Internet Explorer

Find Item: show 100 hits of type sorted by Relevance in ascending order. Hits: 19

Work Title: Bergkinder fliegen
Duration: 00:02:23:16
Date of Ingest: 22.11.2001-19:05:50
Material: video
ECHO Model Entity

Diagram: AV-Document (arrow to) Version (arrow to) Media (arrow to) Storage (arrow to) Video (arrow to) Audio (arrow to) Transcript (arrow to)

Manifested by (Media object)
Has Video (To Video object)
Has Transcript (To Transcript object)
Has Audio (To Audio object)
Expressed from (AVDocument object)

Search results: Bergkinder fliegen, 2. Internationale Modellausstellung, MFS.DOC Bleibkonste, CH Chasso, T.I. Ibernischer Zöhrer, Steak, leat, Güterverkehr, lahm, Anbauwerk und Arbeitssatz, Operazione complessiva

ECHO Prototype 3 Web Service - Microsoft Internet Explorer

Find Item: show 100 hits of type sorted by Relevance in ascending order. Hits: 19

Duration: 00:02:23:16
Date of Ingest: 22.11.2001-19:05:50
Material: video
ECHO Model Entity

Diagram: AV-Document (arrow to) Version (arrow to) Media (arrow to) Storage (arrow to) Video (arrow to) Audio (arrow to) Transcript (arrow to)

Manifested by (Media object)
Has Video (To Video object)
Has Transcript (To Transcript object)
Has Audio (To Audio object)
Expressed from (AVDocument object)

Search results: Bergkinder fliegen, 2. Internationale Modellausstellung, MFS.DOC Bleibkonste, CH Chasso, T.I. Ibernischer Zöhrer, Steak, leat, Güterverkehr, lahm, Anbauwerk und Arbeitssatz, Operazione complessiva

ECHO prototype 3 Web Service - Microsoft Internet Explorer

File | Modifica | Visualizza | Preferiti | Strumenti | ?

Indietro | Avanti | Home | Cerca | Preferiti | Multimedia

Inglese | <http://pc-schizo.8080/Modifiche/serve/ids/artView>

Co: g | c | Iran

Browser | Modifica Editor | Export | Import | Delete

Find Item
as of: unlimited
in active: *
show: 100
sorted by: Relevance
in ascending order
Hits: 19

Submit
Hits of type: []

Entity

Work Title: Bergkinder fliegen
Duration: 00:02:23.16
Date of Ingest: 22.11.2001-19:05:50
Material: video

ECHO Model Entity

Diagram: AV-Document → Version → Media → Storage. Video, Audio, and Transcript are shown as sub-entities of Version.

Title: Bergkinder fliegen (To: Version object)

Has Version: (To: Version object)

Has Audio: (To: Audio object)

Has Transcript: (To: Transcript object)

Unit: Whole

Indication: No

Description: Text: 1300 Bergkinder // Film über Besuch von Kindern aus den Bergen in Zürich, CH Vals: Graber von Lawenopfern / Verpacken von Reiseproviant / Kinder in Busse steigend: La Brevine, Schüler im Schulzimmer sitzend: Zürich: Entfährn im Bahnhof / Kinder Flugzeug beschichtigend / Handlung für Kinder / singende Kinder

Silent: No

Color: BW

Operazione completa

ECHO prototype 3 Web Service - Microsoft Internet Explorer

File | Modifica | Visualizza | Preferiti | Strumenti | ?

Indietro | Avanti | Home | Cerca | Preferiti | Multimedia

Inglese | <http://pc-schizo.8080/Modifiche/serve/ids/artView>

Co: g | c | Iran

Browser | Modifica Editor | Export | Import | Delete

Find Item
as of: unlimited
in active: *
show: 100
sorted by: Relevance
in ascending order
Hits: 19

Submit
Hits of type: []

Entity

Work Title: Bergkinder fliegen
Duration: 00:02:23.16
Date of Ingest: 22.11.2001-19:05:50
Material: video

ECHO Model Entity

Diagram: AV-Document → Version → Media → Storage. Video, Audio, and Transcript are shown as sub-entities of Version.

Title: Bergkinder fliegen (To: Version object)

Has Version: (To: Version object)

Has Audio: (To: Audio object)

Has Transcript: (To: Transcript object)

Unit: Whole

Indication: No

Description: Text: 1300 Bergkinder // Film über Besuch von Kindern aus den Bergen in Zürich, CH Vals: Graber von Lawenopfern / Verpacken von Reiseproviant / Kinder in Busse steigend: La Brevine, Schüler im Schulzimmer sitzend: Zürich: Entfährn im Bahnhof / Kinder Flugzeug beschichtigend / Handlung für Kinder / singende Kinder

Silent: No

Color: BW

Operazione completa

Video player

Informatica Umanistica

The multimedia metadata

ECHO prototype 3 Web Service - Microsoft Internet Explorer

File | Modifica | Visualizza | Preferiti | Strumenti | ?

Indietro | Avanti | Home | Cerca | Preferiti | Multimedia

Inglese | <http://pc-schizo.8080/Modifiche/serve/ids/artView>

Co: g | c | Iran

Browser | Modifica Editor | Export | Import | Delete

Find Item
as of: unlimited
in active: *
show: 100
sorted by: Relevance
in ascending order
Hits: 19

Submit
Hits of type: []

Entity

Work Title: Bergkinder fliegen
Duration: 00:02:23.16
Date of Ingest: 22.11.2001-19:05:50
Material: video

ECHO Model Entity

Diagram: AV-Document → Version → Media → Storage. Video, Audio, and Transcript are shown as sub-entities of Version.

Title: Bergkinder fliegen (To: Version object)

Has Version: (To: Version object)

Has Audio: (To: Audio object)

Has Transcript: (To: Transcript object)

Unit: Whole

Indication: No

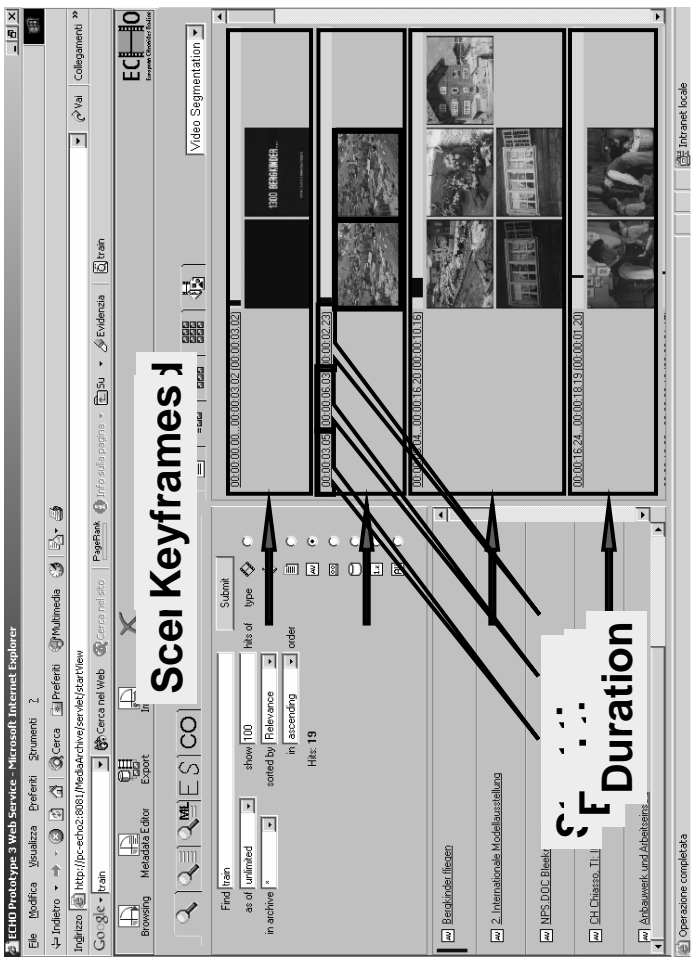
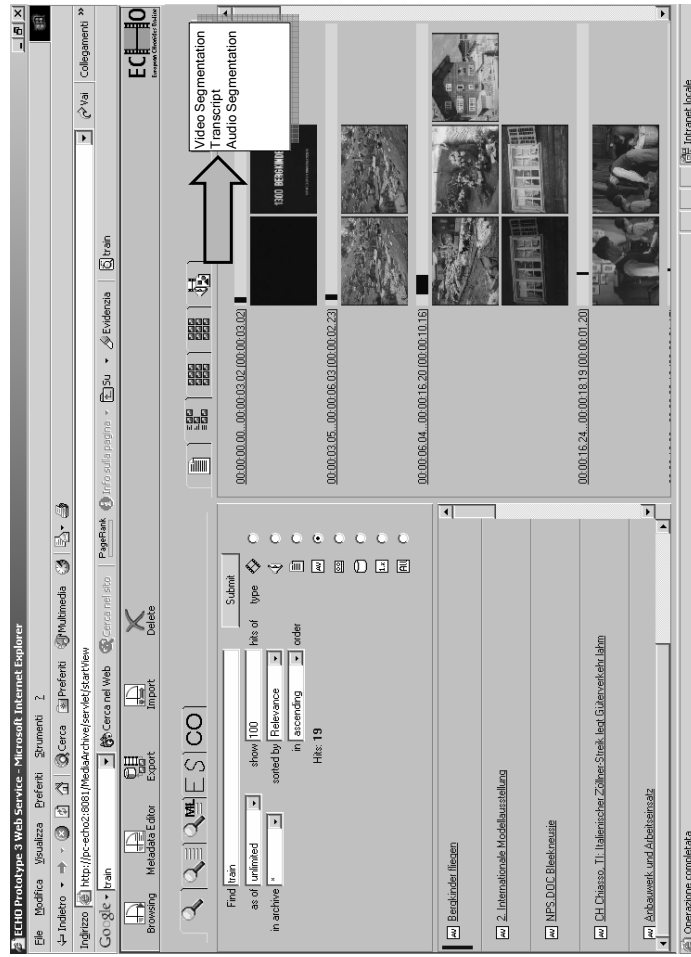
Description: Text: 1300 Bergkinder // Film über Besuch von Kindern aus den Bergen in Zürich, CH Vals: Graber von Lawenopfern / Verpacken von Reiseproviant / Kinder in Busse steigend: La Brevine, Schüler im Schulzimmer sitzend: Zürich: Entfährn im Bahnhof / Kinder Flugzeug beschichtigend / Handlung für Kinder / singende Kinder

Silent: No

Color: BW

Operazione completa

Video player



EC10

Find Item
as of unlimited
in active *
show 100
sorted by Relevance
in ascending
order
Hits: 19

Submit
Hits of type

Beurkunden Illusen
2. Internationale Modellbauausstellung
MFS.DOC Bleikontakte
CH Chassio, TI. Italienischer Zöllner-Strahl-keil Güterverkehrsbahn
Abbauwerk und Arbeitssatz
Operazione completa

Video Segmentation
Transcript
Audio Segmentation

EC10

Find Item
as of unlimited
in active *
show 100
sorted by Relevance
in ascending
order
Hits: 19

Submit
Hits of type

Beurkunden Illusen
2. Internationale Modellbauausstellung
MFS.DOC Bleikontakte
CH Chassio, TI. Italienischer Zöllner-Strahl-keil Güterverkehrsbahn
Abbauwerk und Arbeitssatz
Operazione completa

Keyframes

Audio Segmentation

EC10

Find Item
as of unlimited
in active *
show 100
sorted by Relevance
in ascending
order
Hits: 19

Submit
Hits of type

Beurkunden Illusen
2. Internationale Modellbauausstellung
MFS.DOC Bleikontakte
CH Chassio, TI. Italienischer Zöllner-Strahl-keil Güterverkehrsbahn
Abbauwerk und Arbeitssatz
Operazione completa

Transcript

1300 Bergkinder... In Vals, wo der zurückweichende Schnee die Türmner aus der Lawnenmacht freilibt, schmecken frische Kranze die aber in manchen der sonnenbräunten Häuser war in den ersten Matlageln ein freudiges, erlebvolles Pochen und V. Berlein, 3 Meter steige die oberste Mier, stieg die in die Kammer, wo die Vornste für Jahre hangen, frisngliche Hande bereiten. Reisproviant zu, Rucksäcke wurden prall gefüllt, freudig war der Abschied. Die Zürcher Schul Kinder hatten 1300 Bergkinder in die grosse Stadt am See geladen. Und während wir dem Abschied der Valskinder zusehen, während aus anderen Bergelern, grabrätischen und lessnisoten, Hunderte von Kir- fern eine langgültige Botschaft, stehen im Juraort La Brevine

Text detected

EC10

Find Item
as of unlimited
in active *
show 100
sorted by Relevance
in ascending
order
Hits: 19

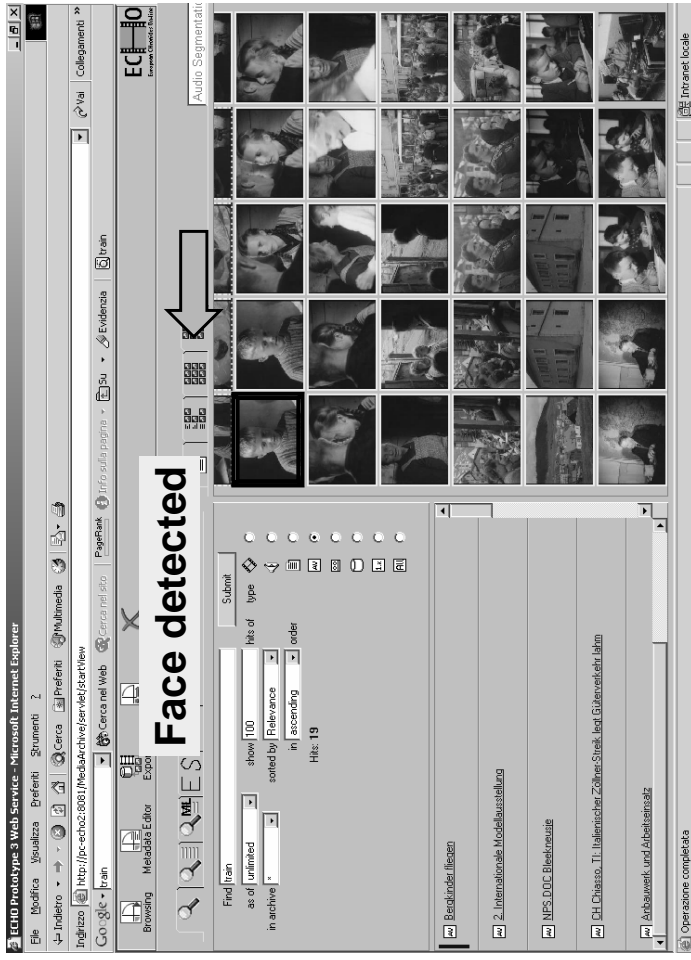
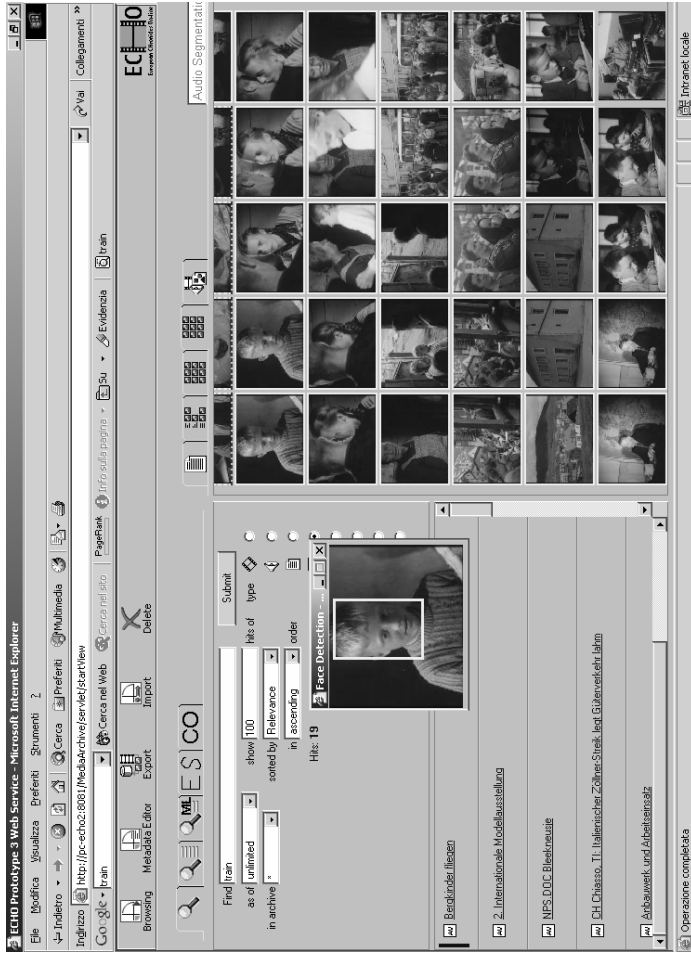
Submit
Hits of type

Beurkunden Illusen
2. Internationale Modellbauausstellung
MFS.DOC Bleikontakte
CH Chassio, TI. Italienischer Zöllner-Strahl-keil Güterverkehrsbahn
Abbauwerk und Arbeitssatz
Operazione completa

Audio Segmentation

Speech

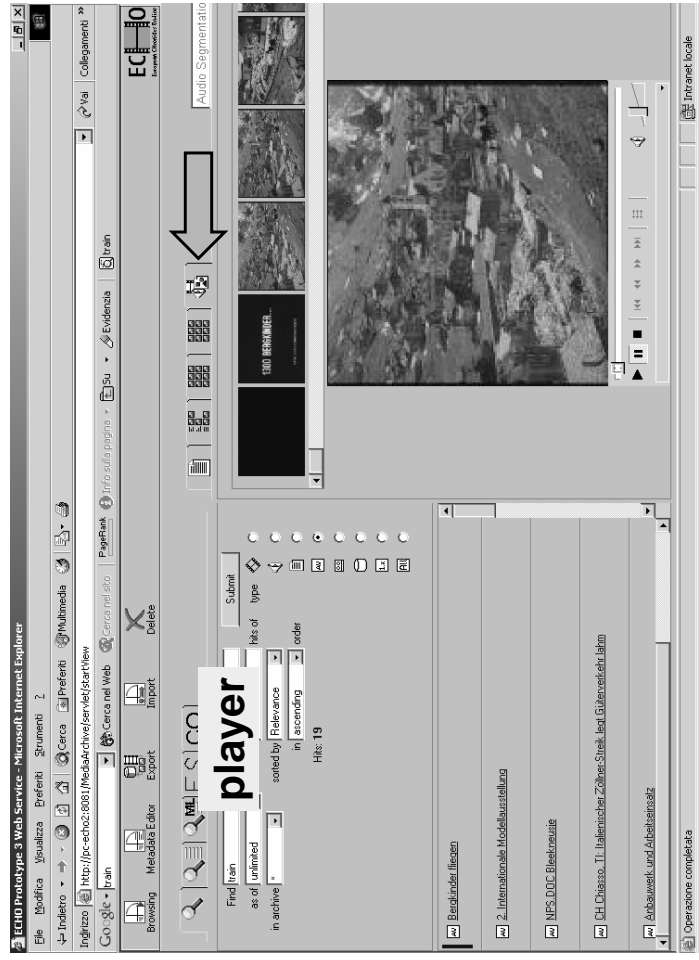
Audio segment

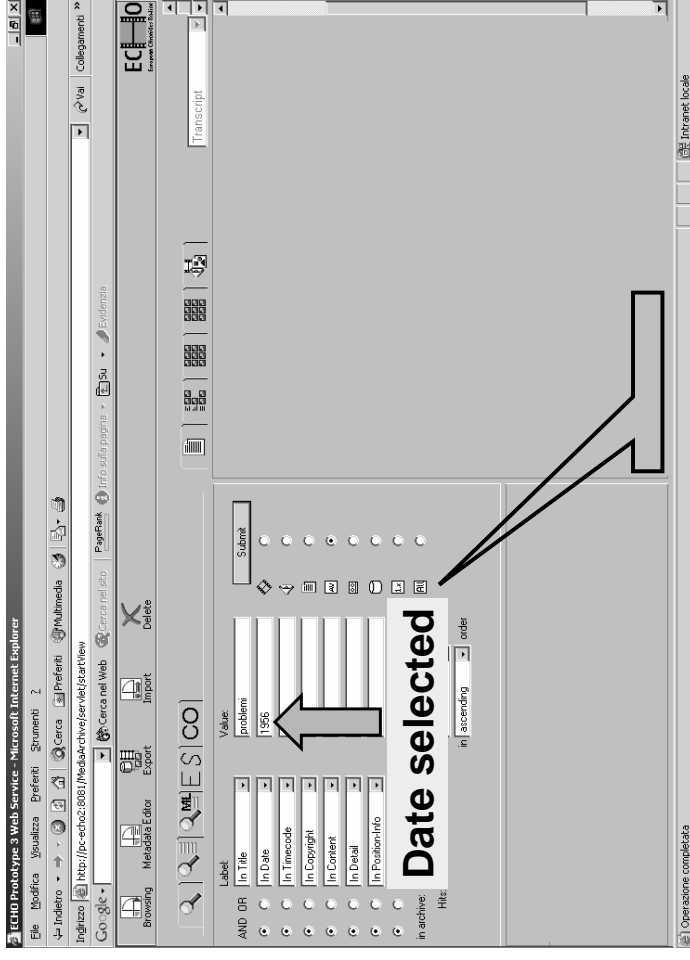
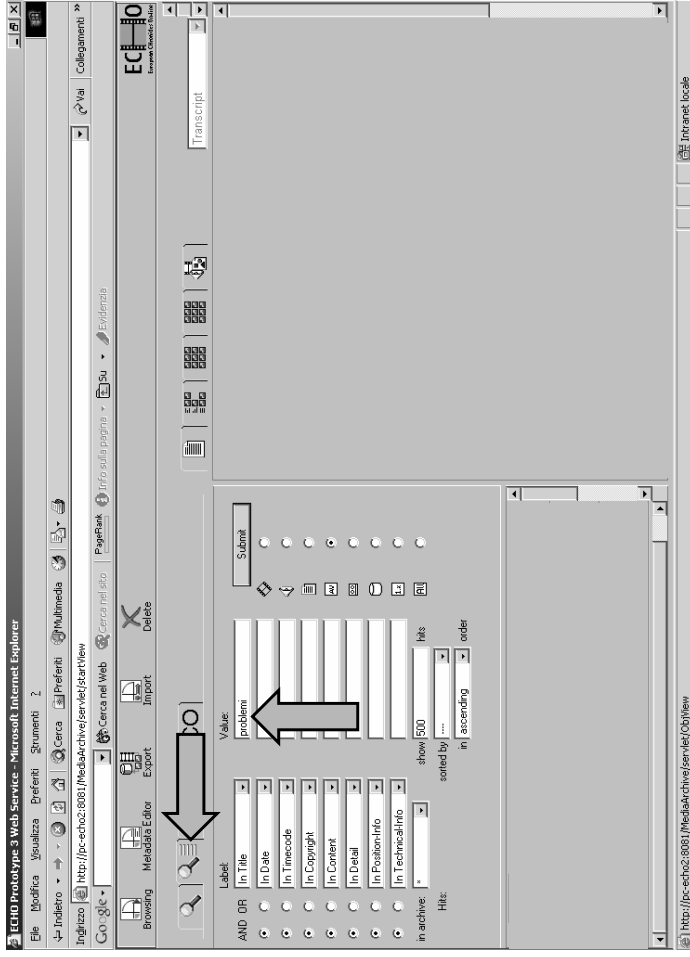


Informatica Umanistica

The fielded search

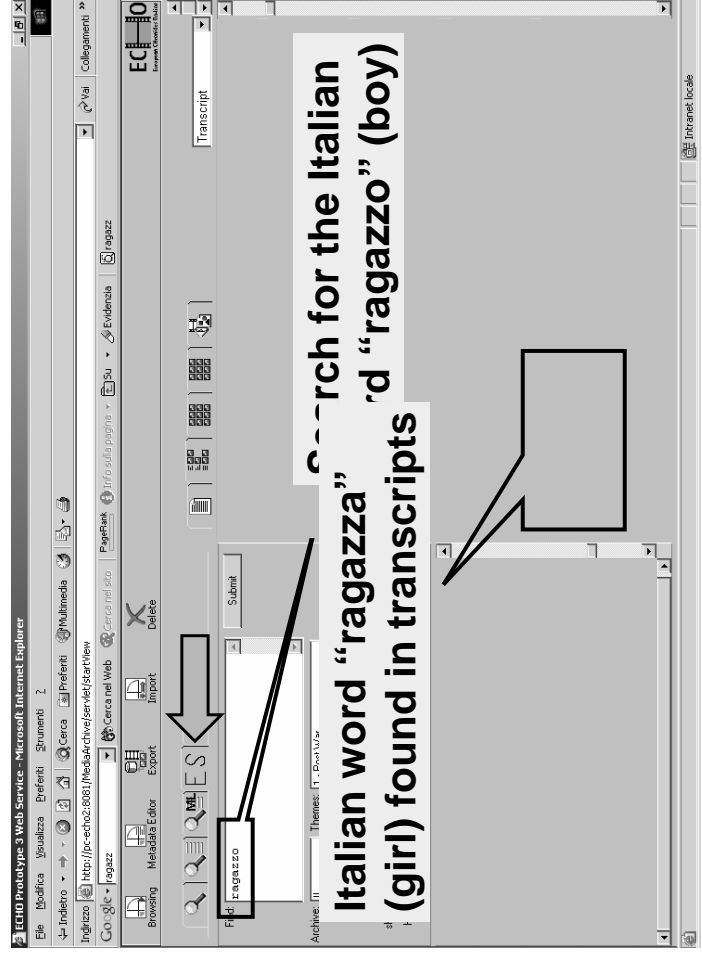
Università di Pisa

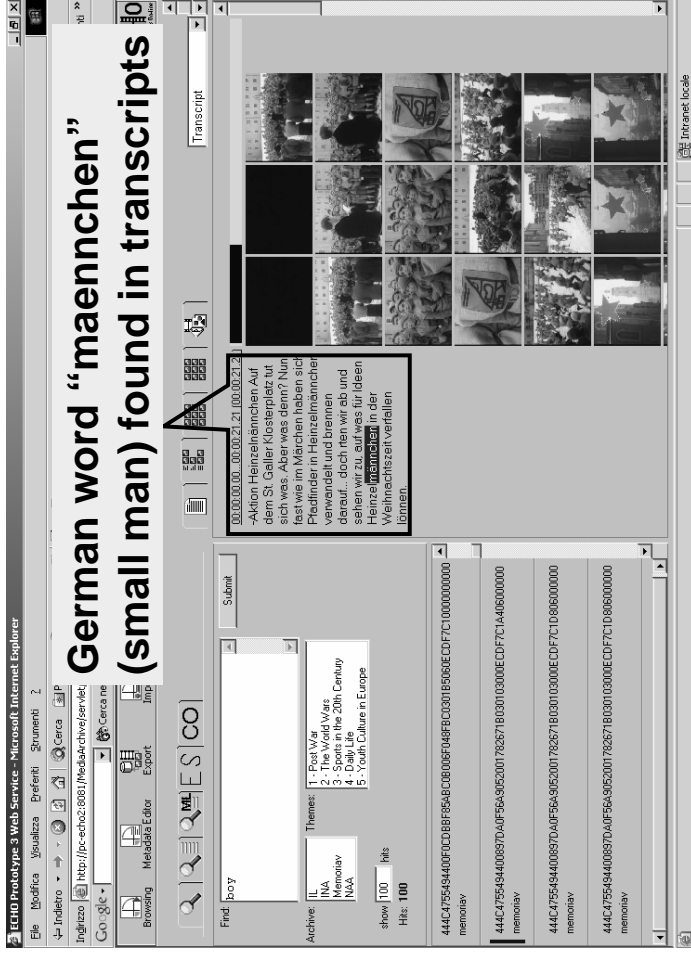
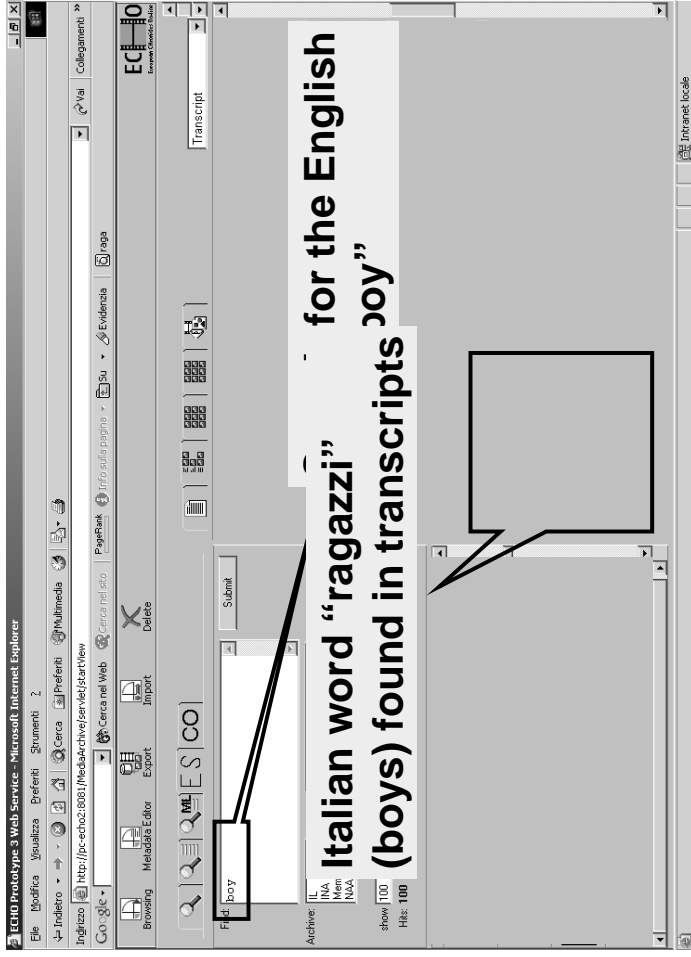




The (Eurospider) CrossLanguage Retrieval on Transcripts

- ◆ The transcript of a video can be in Italian, French, German, or Dutch.
- ◆ The CL retrieval allows to search the transcripts using any of these 4 languages, and the English language.

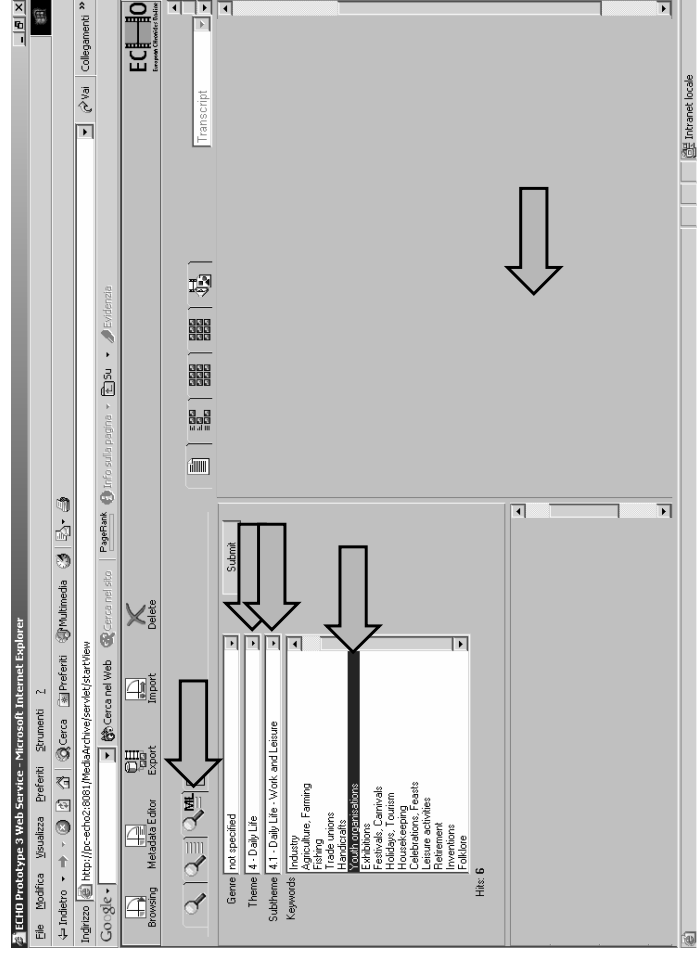




Informatica Umanistica

The MultiLingual Classification

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The Image Similarity search

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Editing metadata with the standard strata-based metadata editor of tecmath

- ◆ It is the standard metadata editor provided with the retrieval interface of the tecmath commercial system.

ECI 10

Problemi e soluzioni dell'urbanistica - media archive Cataloging Client

File Edit State View Options Help

Address: http://pc-sch26283/mediachive/services/startView

PageRank info sulla pagina Go Evidenziato

LESICO

Find in archive

show 100 items of relevance

sorted by Relevance in descending order

Hits: 100

Submit list of type

Les. formazioni su IRI.101.cvu

Les. formazioni su IRI.102.cvu

Mostra corrispondenze a Moracco

Esibizioni e soluzioni idel

Transcript

00:00:00.00...00:00:03.20 (00:00:03.20)

00:00:03.20...00:00:27.14 (00:00:23.94)

Il numero delle auto a Palermo è più che triplicato nel dopoguerra naturale che sia sotto parallelamente all' incremento della motorizzazione all' incremento della motorizzazione stradale questo non è più uno degli aspetti della complessa questione urbanistica che l' amministrazione comunale ha affrontato con energia e con chiarezza. I problemi più acuti non si risolvono nei quartieri popolari non saranno più di un triste ricordo si potrà rimedio ed assurde situazioni come quella della

Problemi e soluzioni dell'urbanistica - media archive Cataloging Client

File Edit State View Options Help

Default Statusum

Intranet locale

Ready

Problemi e soluzioni dell'urbanistica - media archive Cataloging Client

File Edit State View Options Help

Default Statusum

Music

Speech, Male, m_0

Il numero delle auto a Palermo è più che triplicato nel dopoguerra naturale che sia sotto parallelamente all' incremento della motorizzazione stradale questo non è più uno degli a...

Ready

Keyframes

Videosegments (strata)

Problemi e soluzioni dell'urbanistica - media archive Cataloging Client

File Edit State View Options Help

Default Statusum

Music

Speech, Male, m_0

Il numero delle auto a Palermo è più che triplicato nel dopoguerra naturale che sia sotto parallelamente all' incremento della motorizzazione stradale questo non è più uno degli a...

Ready

Scenes detected

Problemi e soluzioni dell'urbanistica - media archive Cataloging Client

File Edit State View Options Help

Audio track

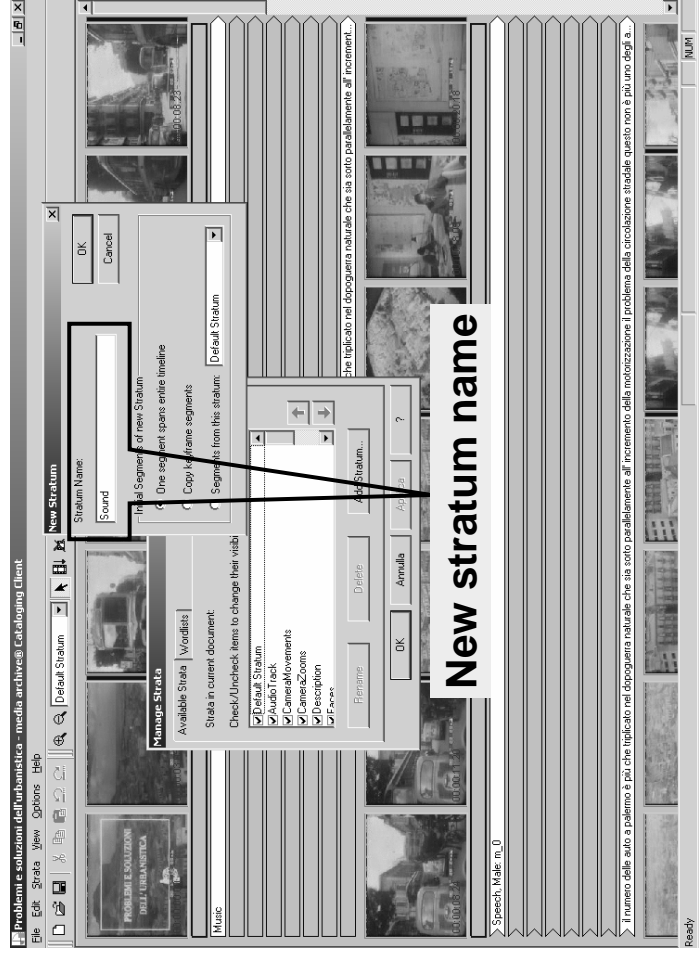
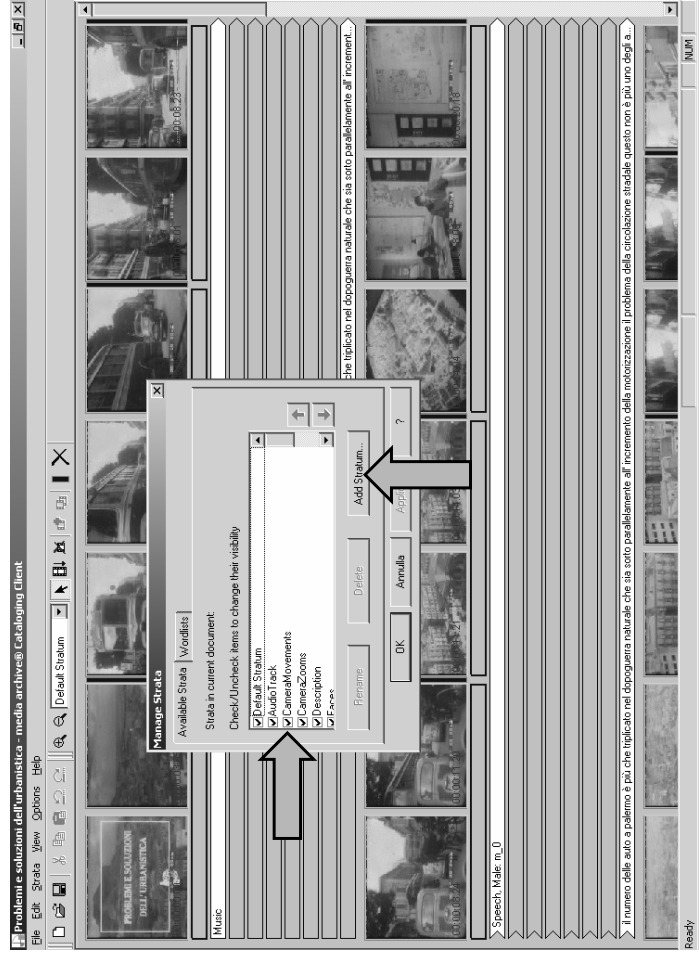
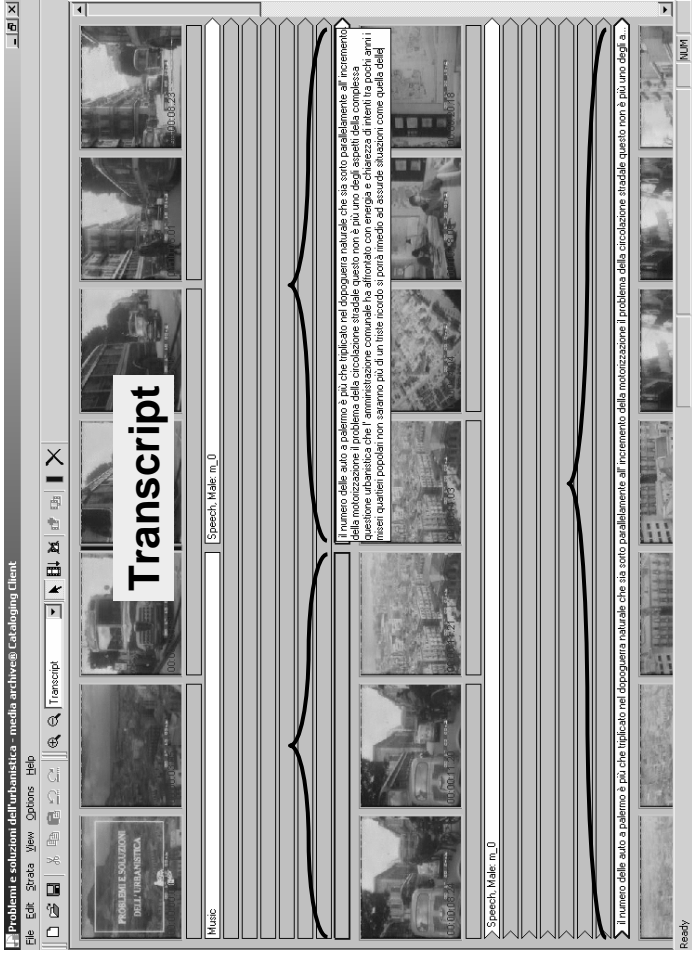
Music

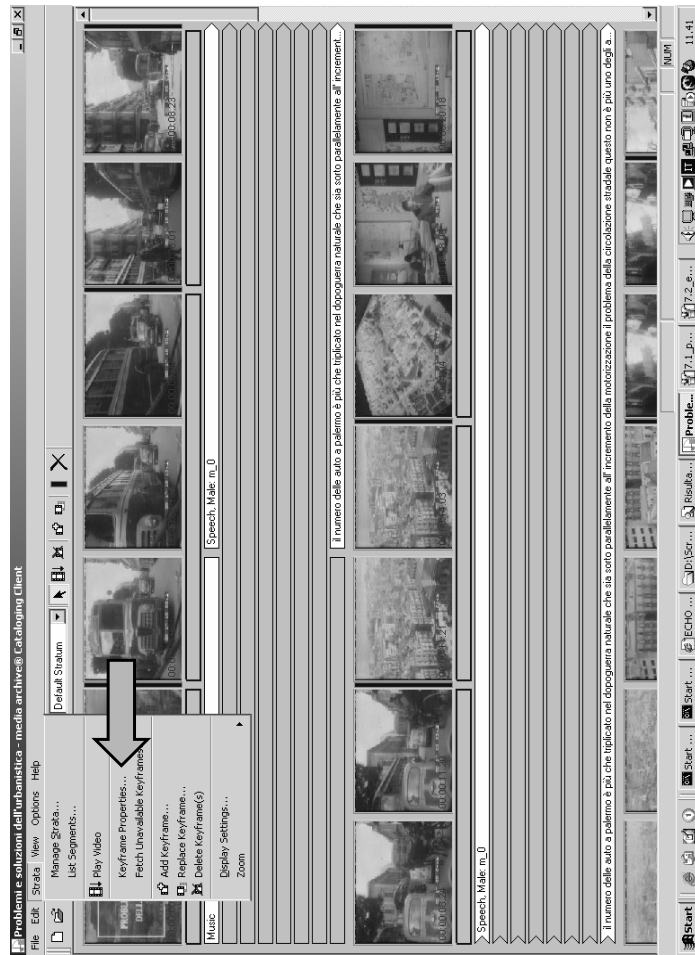
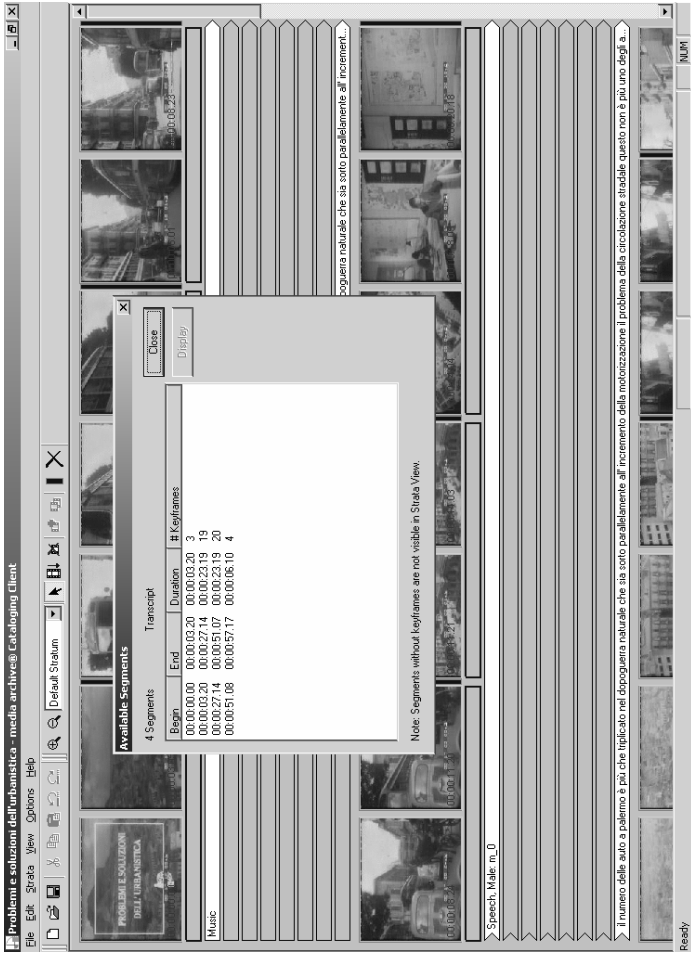
Speech, Male, m_0

Il numero delle auto a Palermo è più che triplicato nel dopoguerra naturale che sia sotto parallelamente all' incremento della motorizzazione stradale questo non è più uno degli a...

Ready

Audio segments

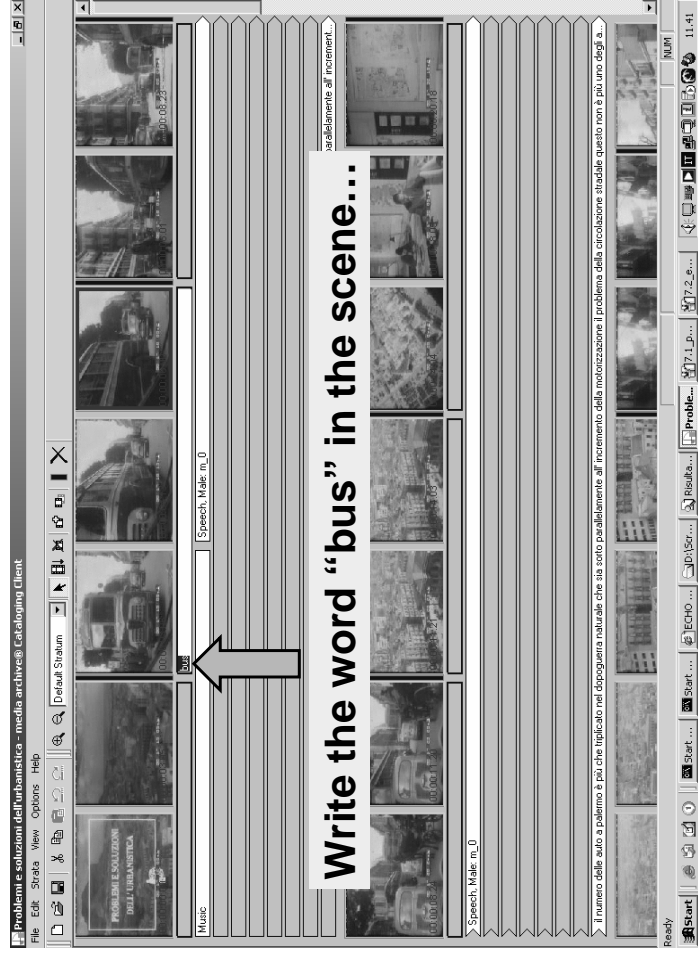






Informatica Umanistica

Editing text associated with
detected scenes



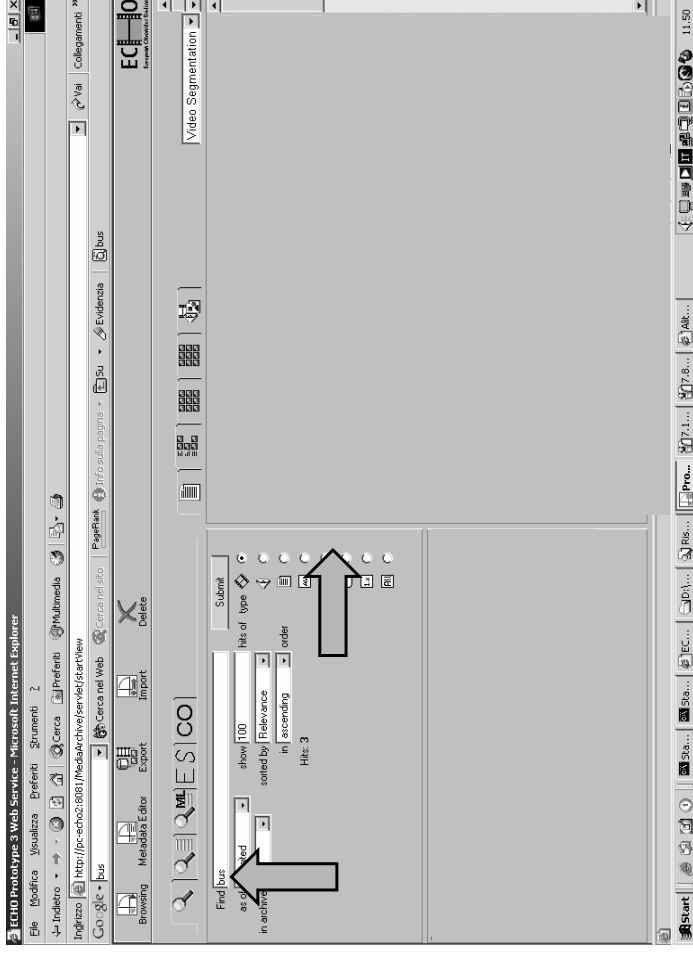
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Informatica Umanistica

Regia: A Metadata Editor for
AV Digital Libraries

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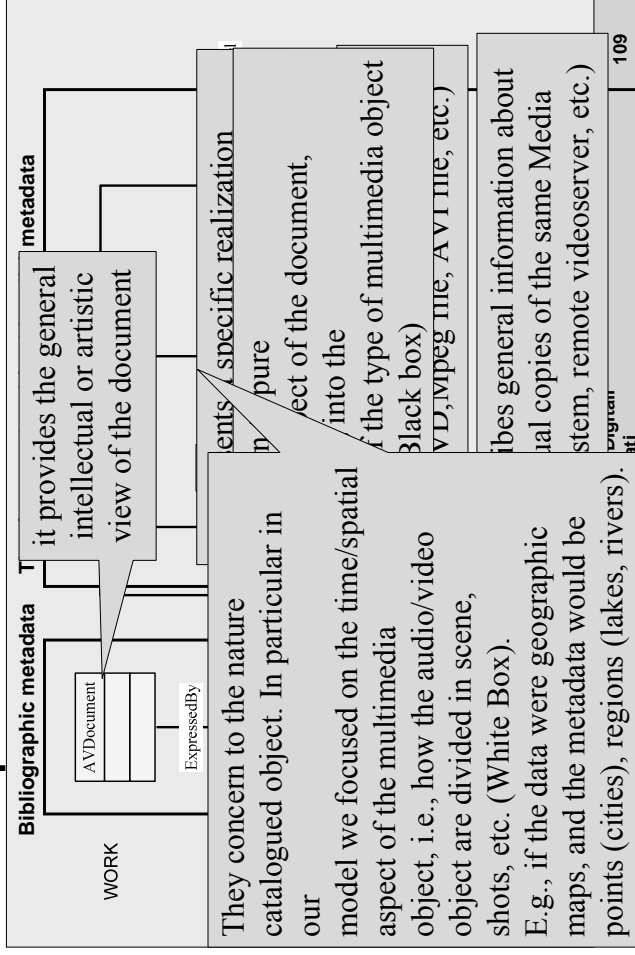


Informatica Umanistica

Regia

Università di Pisa

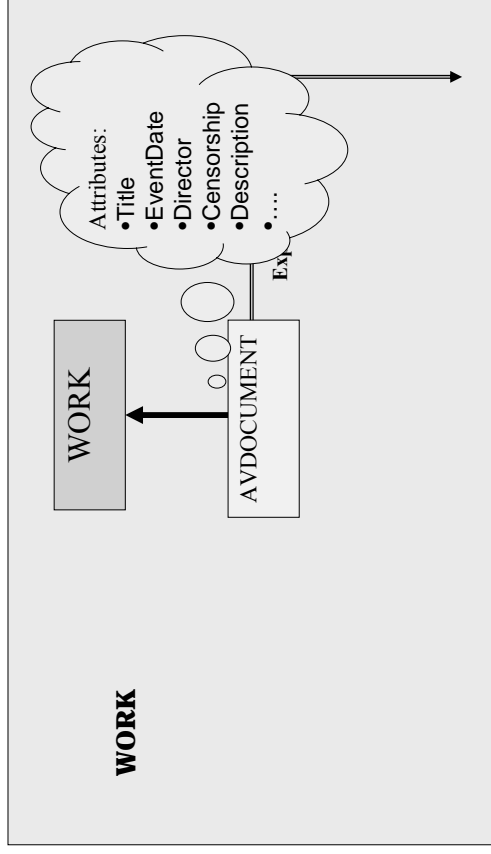
Implemented ECHO metadata model



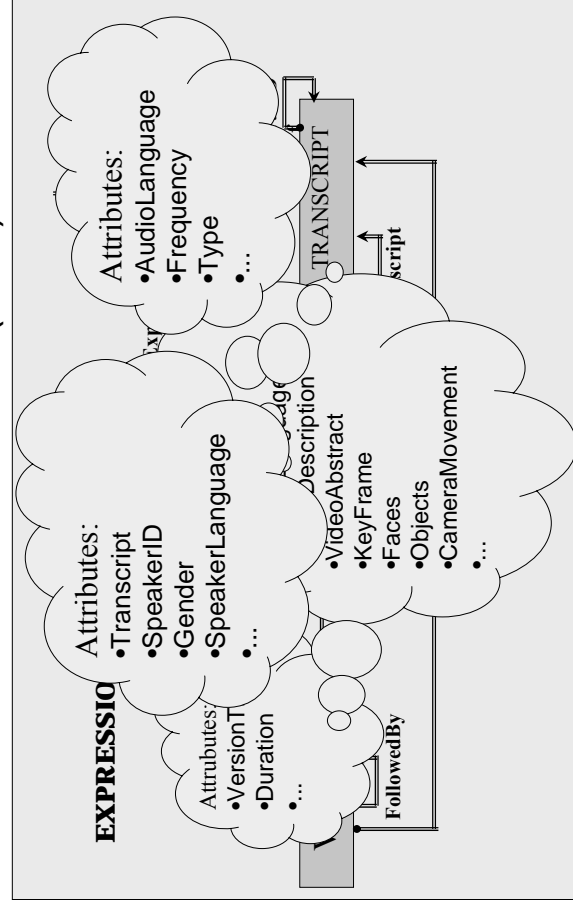
109

110

The ECHO Model

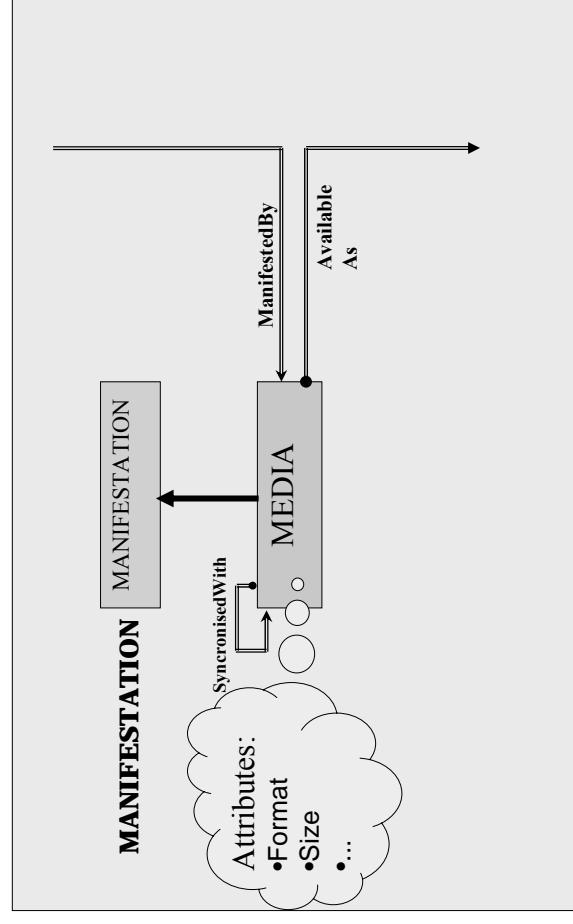


The ECHO Model (cont.)



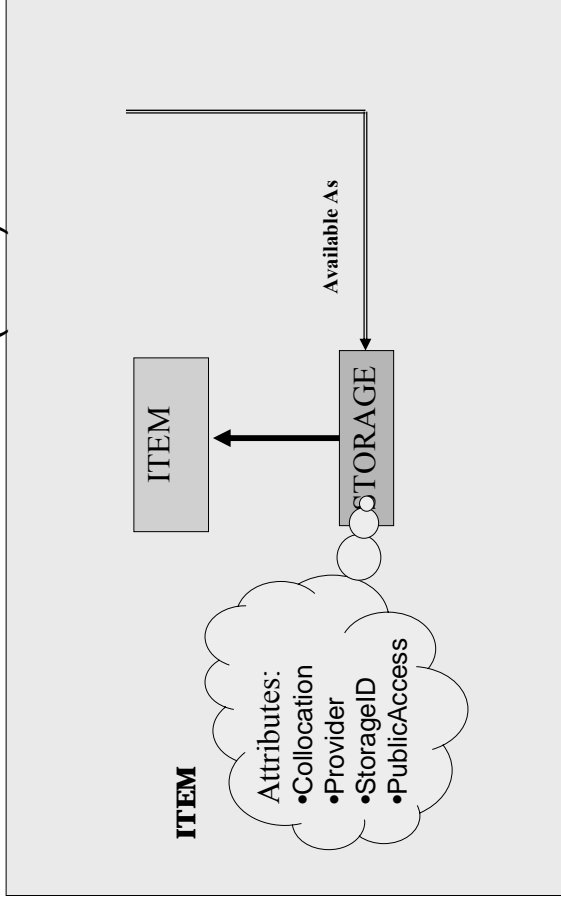
111

The ECHO Model (cont.)



112

The ECHO Model (cont.)



Browsing/Editing the Bibliographic section AVDocument

Each entity us associated to a different icon:



◆ Root of the AVDocument



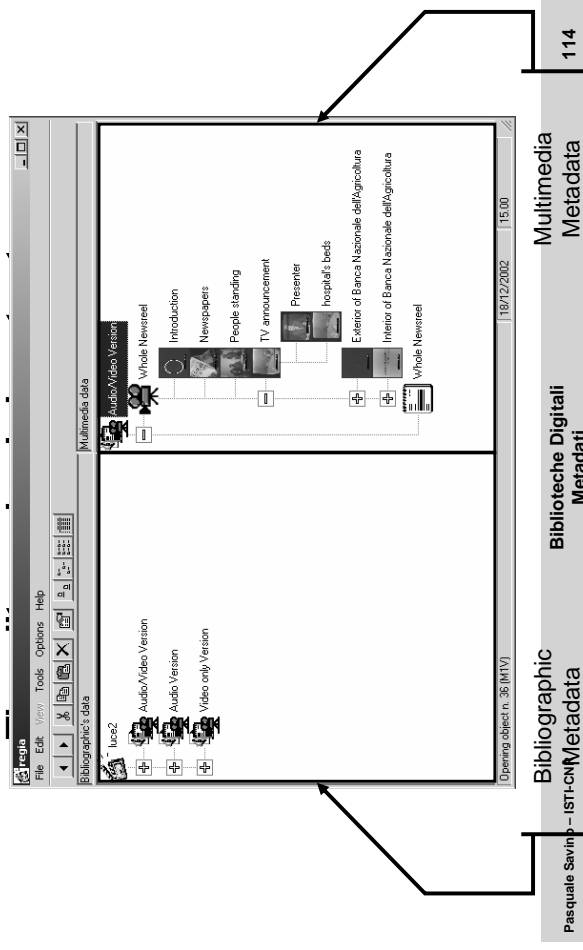
◆ Version



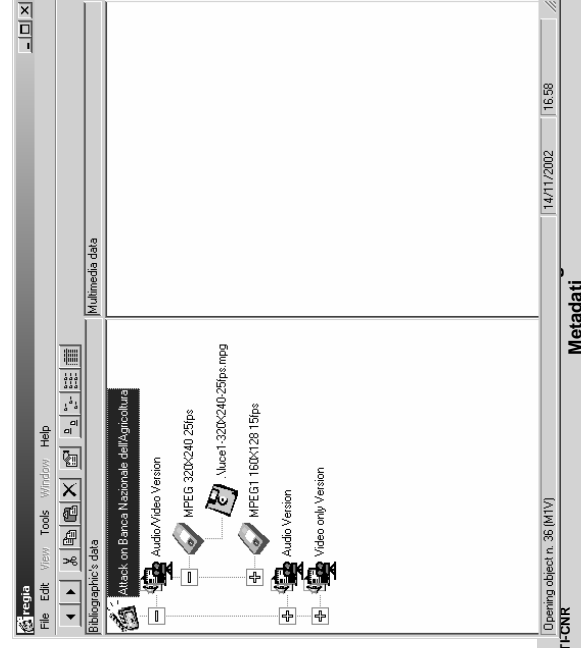
◆ Media



◆ Storage



The bibliographic metadata structure



Editing the metadata

Unassigned and Assigned fields

Some type of metadata fields do not have null values:

- ◆ Boolean (true/false)
- ◆ Date
- ◆ Closed Lists

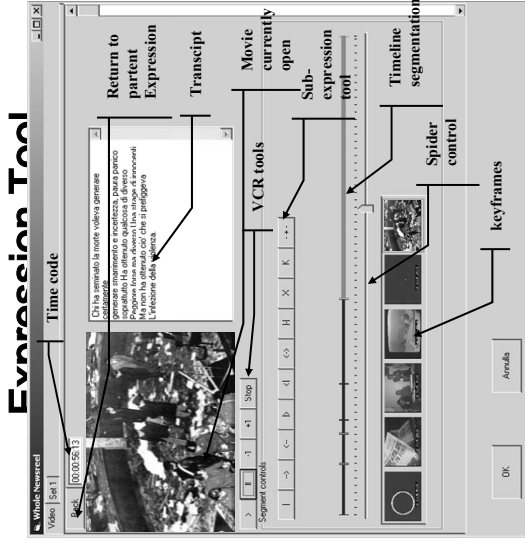
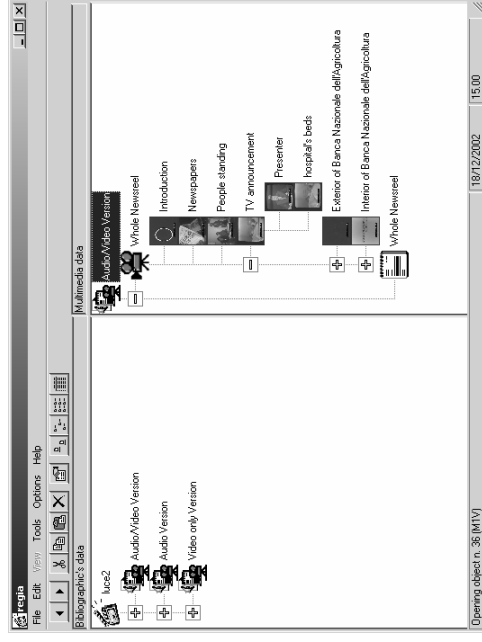
Unassigned and Assigned fields

Valid	Attribute Name	Type	Comment
<input checked="" type="checkbox"/>	AVDocGUID	String	GUID of the ...
<input checked="" type="checkbox"/>	Title	String	Title of the av...
<input checked="" type="checkbox"/>	Series Title	String	Title of the set...
<input checked="" type="checkbox"/>	Series Number	String	Number of the...
<input checked="" type="checkbox"/>	Genre	String	Genre of the ...
<input checked="" type="checkbox"/>	Description	String	Description of...
<input checked="" type="checkbox"/>	Person	SetOfStrings	Person names...
<input type="checkbox"/>	Organization	SetOfStrings	Organisation...
<input type="checkbox"/>	Locations	SetOfStrings	Location nam...
<input type="checkbox"/>	OtherProperN...	String	Names of e.g...
<input type="checkbox"/>	Period	SetOfStrings	Names of peri...
<input type="checkbox"/>	Keywords	SetOfStrings	Free terms de...
<input checked="" type="checkbox"/>	Themes	String	ECHO themes...
<input checked="" type="checkbox"/>	Subthemes	String	ECHO subthe...
<input checked="" type="checkbox"/>	ThematicKey...	SetOfStrings	Exploited for ...
<input checked="" type="checkbox"/>	EnglishAbstract	String	Short descript...

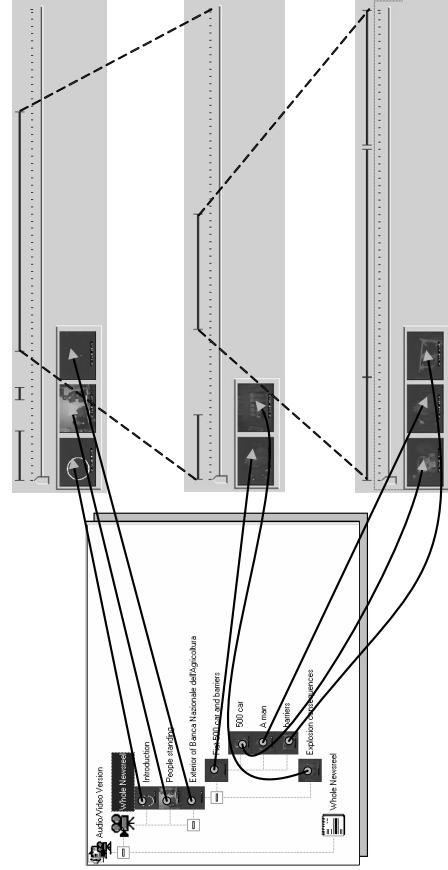
Delete/Add objects

- ◆ *Deleting an object and its children*
 - By selecting an object icon and typing the “Del” keyboard it is possible to delete an object and its children.
- ◆ *Adding a new child entity*
 - It is possible to add a new child object by selecting its parent, clicking on the right button of the mouse, and clicking on “Add child...”. It will appear an input box asking for the title of the new object. Note that, for the Storage entity the title corresponds to the “collocation” field of its metadata.

Multimedia section of AVDocument



Browse the Expression



Create, update and delete

- ◆ Create
 - move the cursor of the slider and place it at the start time of the shot you want to create, push the button "I". The timecode and a small line on the timeline start blinking. Move the cursor and place it at the end time of the new segment, push again the button "I".
 - Push the button "I-I". A dialog box will allow you to select the start/end timecodes boundaries of the new segment.

Create, update and delete (2)

- ◆ **Modify**
 - Push the button ">" ("<"). This will change the end (begin) of the selected segment to the begin (end) to the (preceding) succeeding segment.
 - Push the button "<->". A dialog box will allow modifying the start/end timecodes boundaries of the selected segment.
 - By selecting the segments by means of the mouse button and pressing shift button, it is possible to select more than one segment. The selected segments are highlighted by means of a thicker line on the sliding bar, and their keyframes are contained in a coloured frame. By pushing the button "-+>" all the segmented will be merged together. Note that, the new merged segmented will hierarch the textual metadata of the selected segment that appeared in green.
- ◆ **Delete**
 - Select a segment and push the button "X" or the key "Del" of the keyboard.

- ◆ **Updating the keyframes**
 - Clicking on the button "K" the keyframe of the current video is updated by the frame currently shown.

Creating a new AVDocument

- ◆ **In order to create a new AVDocument from scratch, click on the menu item File→New. A new AVDocument will be created. Proceed creating the other entities of the AVDocument.**

Cross Language features

- ◆ **Some of the metadata fields of the root of the AVDocument are treated as Cross Language by the editor. The metadata fields involved are:**
 - Themes
 - Subthemes
 - Thematic Keywords

Regia Demo

- ◆ Bibliographic structure browsing
- ◆ Add/Removing children to the tree
- ◆ Editing metadata (AVDocument ex.)
- ◆ Theme, Subtheme, etc. switching language
- ◆ Tips
- ◆ Activate an “unassigned” field (ex. EventDate)

Regia Demo (cont.)

- ◆ **Multimedia metadata structure**
 - Video, audio, and transcript segmentations
- ◆ **Video segmentation tree structure**
- ◆ **Audio segmentation tree structure**
- ◆ **Video segmentation editing/browsing**
 - Double representation: keyframe/timeline
 - Tooltip
 - Moving/Playing/Transcript
 - Browsing
 - Editing scenes: merge, remove, extend, add.
 - Textual metadata
- ◆ **Video jumping from tree-view**
- ◆ **Audio segmentation editing/browsing**
- ◆ **Find**

Informatica Umanistica

VideoAnnEx Annotation Tool

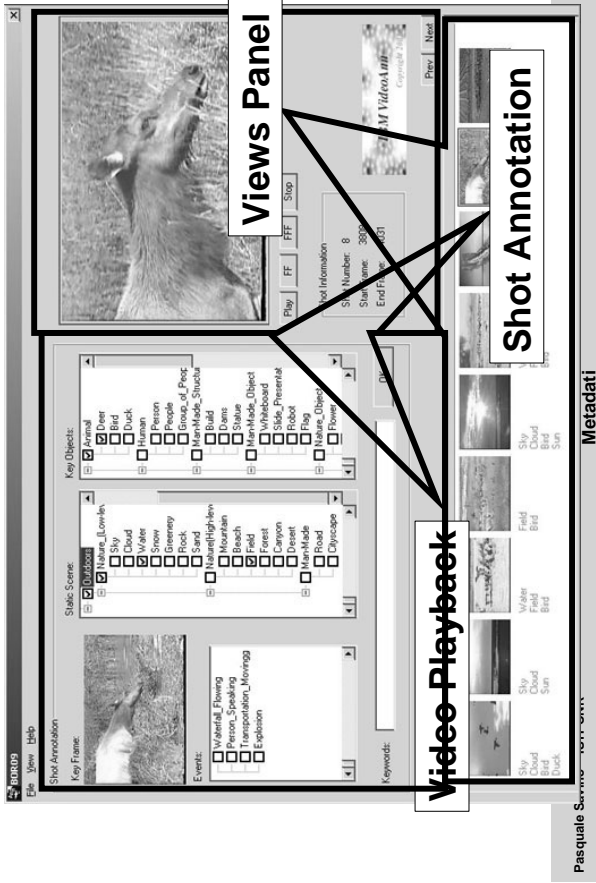
DEMO

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VideoAnnEx Annotation Tool

- ◆ The *VideoAnnEx* annotation tool assists authors in the task of annotating video sequences with MPEG-7 metadata.
- ◆ Each shot in the video sequence can be annotated with static scene descriptions, key object descriptions, event descriptions, and other lexicon sets.
- ◆ The annotated descriptions are associated with each video shot and are stored as MPEG-7 descriptions in an output XML file.
- ◆ The annotation tool also allows customized lexicons to be created, saved, downloaded, and updated.

Graphical User Interface



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DEMO

1. Opening an mpeg file: shot detection
2. Video Playback window
3. View Panel:
 - Frames in the shot
 - Shots in the video
4. Shot Annotation:
 - Events
 - Static Scene: background static
 - Objects
 - Keywords

DEMO

5. Region Annotation
6. Lexicon editing
7. Categories editing
8. Saving annotation
9. Saving lexicon
10. Saving shot keyframes
11. Load complete example
12. Generated xml files:
 - foo.mpeg
 - foo.mp7.xml
 - foo.lex.xml

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Download site

- ◆ [http://www.research.ibm.com/VideoAnnEx/download.h](http://www.research.ibm.com/VideoAnnEx/download.html)
tml

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Informatica Umanistica

Osservazioni

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Segments representation

- ◆ Simple mono-dimensional



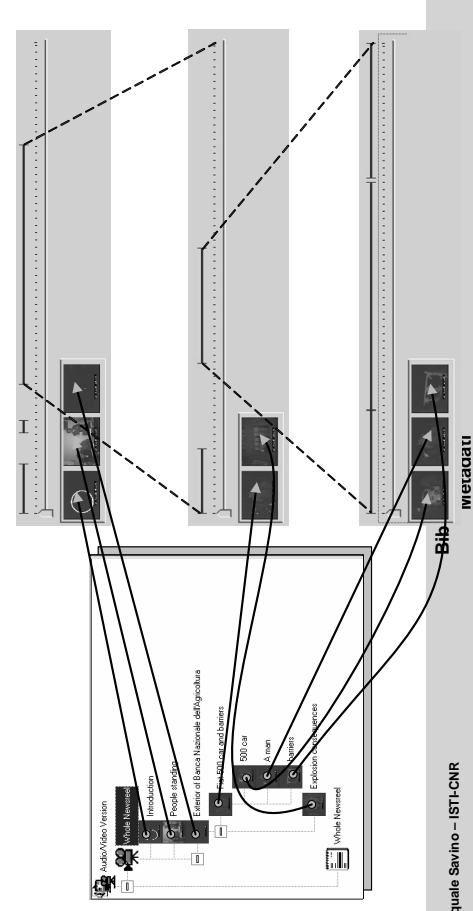
Segments representation(2)

- ◆ Multi-dimensional



Segments representation(3)

- ◆ Hierarchical



Importance of the analysis tools

- ◆ More sophisticated software can aid the cataloguers during the editing phase:
 - Intelligent tool of cut detection, which do not produce masses of scenes (tunable: camera movement, fade, etc.)
 - Face and object detection tools are very useful
 - Audio analysis and speech recognition

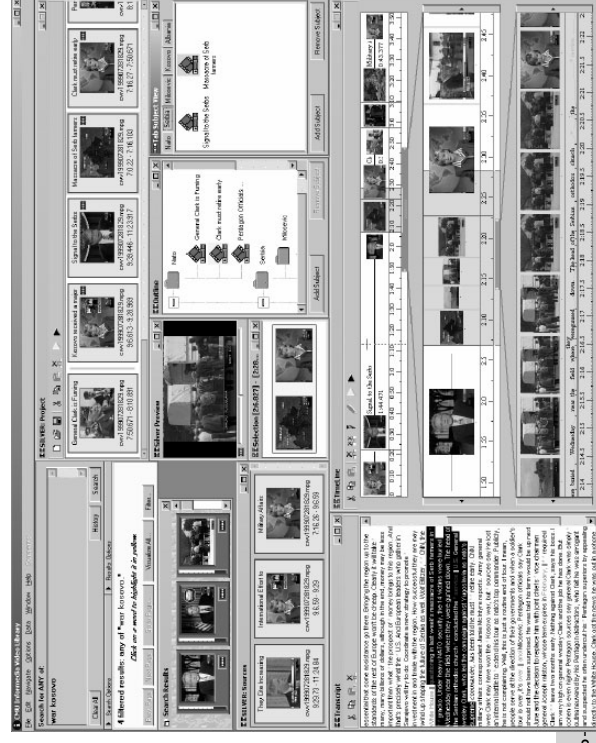
Model or meta-model?

- ◆ Sometimes editing tools allow the user to modify the model
- ◆ IBM editor allows to modify the lexicon, or
- ◆ the tecmath editor allows to add/remove strata
- ◆ There must be a separate tool for maintaining the metadata model
 - Confusion
 - Inconsistence, adaptation of other interface (eg., the retrieval interface)

Usability

- ◆ In this talk we did not talk about the user interface usability
- ◆ However this issue is very important in audio/video metadata editing tools
- ◆ Silver editor of the Informedia project of the Carnegie Mellon University faces this problem
- ◆ This tool is more a video editing tool rather than a metadata editor, however the problem faced are similar

Silver tool user interface



Riferimenti

- ◆ <http://www.ifla.org/>
- ◆ C. Ghilli, M. Guerrini, Introduzione a FRBR, Editrice Bibliografica, 2001
- ◆ The ECHO metadata model, ECHO Technical Report, <http://pc-erato2.iei.pi.cnr.it/echo/documents/>
- ◆ "A Metadata Model for Historical Documentary Films", Giuseppe Amato, Donatella Castelli, Serena Pisani **4th European Conference on Digital Libraries, ECDL 2000, Lisbon Portugal, 2000, LNCS 1923, pp. 328-331**