



# e-Dvara design and pragmatics

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# Cultural dissemination

- Make contents **available**: digitalize
  - nowadays easy and cheap (scanners, digital cameras...)
  - digital contents can be easily transmitted and shared

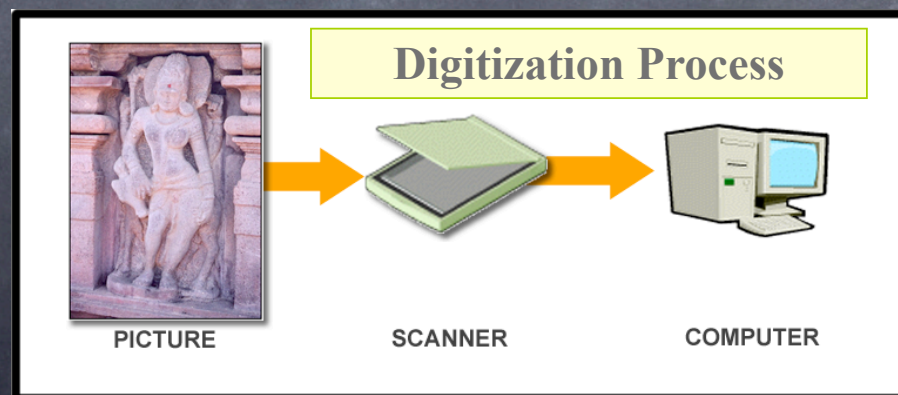


- Make contents **effectively usable**:
  - no information overload
    - add **semantics** to data
    - add **search tools**
  - **web**
    - overcome bounds of time, space



# E-Content (an example)

- Goal: disseminate culture and make artworks more effectively utilizable
- Is digitization sufficient? No





# E-Content (an example)

- It is necessary to **describe** the artwork



PICTURE

‘This sculpture represents  
Lord Ardhanarishwara.  
It dates 8th C.A.D. and it is  
located in Alampur (A.P).’

- Still not sufficient (for example you cannot search all items made in a specific period of time)
- It is necessary to add **SEMANTICS** to the data
- **Metadata**



# E-Content (an example)

## • METADATA



PICTURE

**Title:** *Ardhanarishwara*

**Period:** 8th c.a.d.

**Location:** *Alampur*

## • XML representation

```
<title>ardhanarishwara</title>  
<period>8th c.a.d.</period>  
<location>Alampur</location>
```

- This type of e-content representation allows a flexible
  - storing in a digital archive
  - showing on WWW and searching



# Designing a digital archive

## The traditional approach



# Designing a digital archive

## The traditional approach

- Problem **analysis**



# Designing a digital archive

## The traditional approach

- Problem **analysis**
- Designing the **data structure**



# Designing a digital archive

## The traditional approach

- Problem **analysis**
- Designing the **data structure**
- Designing a **specific** solution:
  - Specific data set
  - Specific data base architecture
  - Specific procedures and interfaces for the data entry
  - Specific interfaces for the utilization of the contents



# Pros & cons of the traditional approach

## • Pros:

- Effective personalization of interfaces for the entry and utilization of contents

## • Cons:

- Difficult application of the solution to archives of materials of different nature
- Difficult integration with other archives with different metadata sets



# Our approach



# Our approach

- Employment of an **online** digital archive
  - To **store various types** of materials relating to **different types** of cultural heritages
  - To allow an **effective utilization** (browsing, searching, visiting a virtual museum,..) of contents independently of user location
  - To ensure **compatibility** and allow **integration** with other archives



# A web-oriented platform for cultural dissemination

- **Quick**: in a couple of clicks it is possible to define digital contents
- For a **large class of materials** (texts, photos, videos...)
- **Easy to use**: no need of technicians
- **Accessible** and **multi-user**: multiple user around the world can simultaneously contribute to add contents
- **Extensible** and **customizable**
- **Open** to international **standards**



# Functional requirements

## • Storage



- Flexibility and personalization of the storing process
- simplicity and effectiveness of
  - Procedure of the definition of the metadata structure
  - Procedure of data entry
- Personalization of interfaces of data entry and contents utilization
- Open to standards and possibility of integration with other archives



## 👁 Search



- 👁 Search effectiveness: (personalized search forms)
- 👁 A single platform allows transversal types of searching across different archives

## 👁 Utilization



- 👁 Web Portals, Virtual museum, hands on museum,...
- 👁 Increase the knowledge and cultural awareness particularly of the youngsters
- 👁 Effective utilization of contents by final user



# Technological choices

- Storage:
  - XML schema or DTD to define data structures
  - XML for data storage
- Search:
  - XML and XSLT to produce automatically the search forms
- Utilization:
  - XML and XSLT
    - Web interfaces
    - Flash interfaces
    - 3D interfaces



# Why XML & XSLT?



# Why XML & XSLT?

- Main idea: separate **contents** from **presentation**



# Why XML & XSLT?

- Main idea: separate **contents** from **presentation**
- XML:
  - Define data structure
  - Represent data



# Why XML & XSLT?

- Main idea: separate **contents** from **presentation**
- XML:
  - Define data structure
  - Represent data
- XSLT:
  - generate personalized interface to show and utilize data



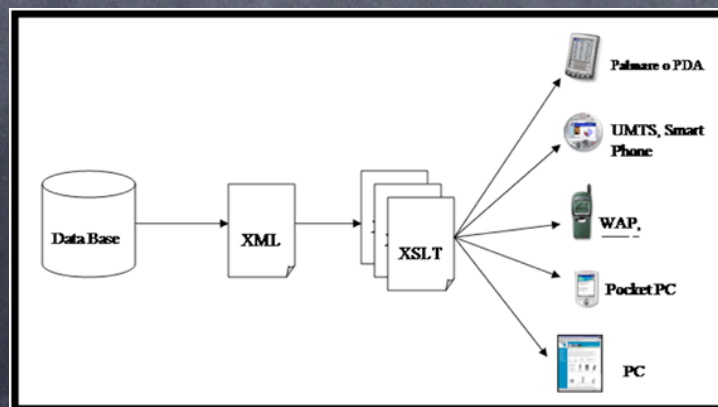
# XML

- XML (eXtensible Markup Language) is now the most **powerful** and **used** tool for data description.
- Allows **hierarchical data structure** definition: digital information could be rich, detailed and precise
- Easy **data interchange** between Institution Archives without complex **conversion procedures**
- Operating systems **independence**, high data **portability**
- Availability of open source **software** and **tools** to develop xml-driven applications
- **International Standard** are defined using DTD or XML Schemas



# XSLT

- XSLT is a powerful **transformation** language
- Using XSLT is possible:
  - to **transform** XML to obtain xHTML, WML, Pdf, etc...
  - to **view** XML data in different ways using different **devices**
  - to obtain different and personalized **interfaces** to access to the data or add other contents to the archive

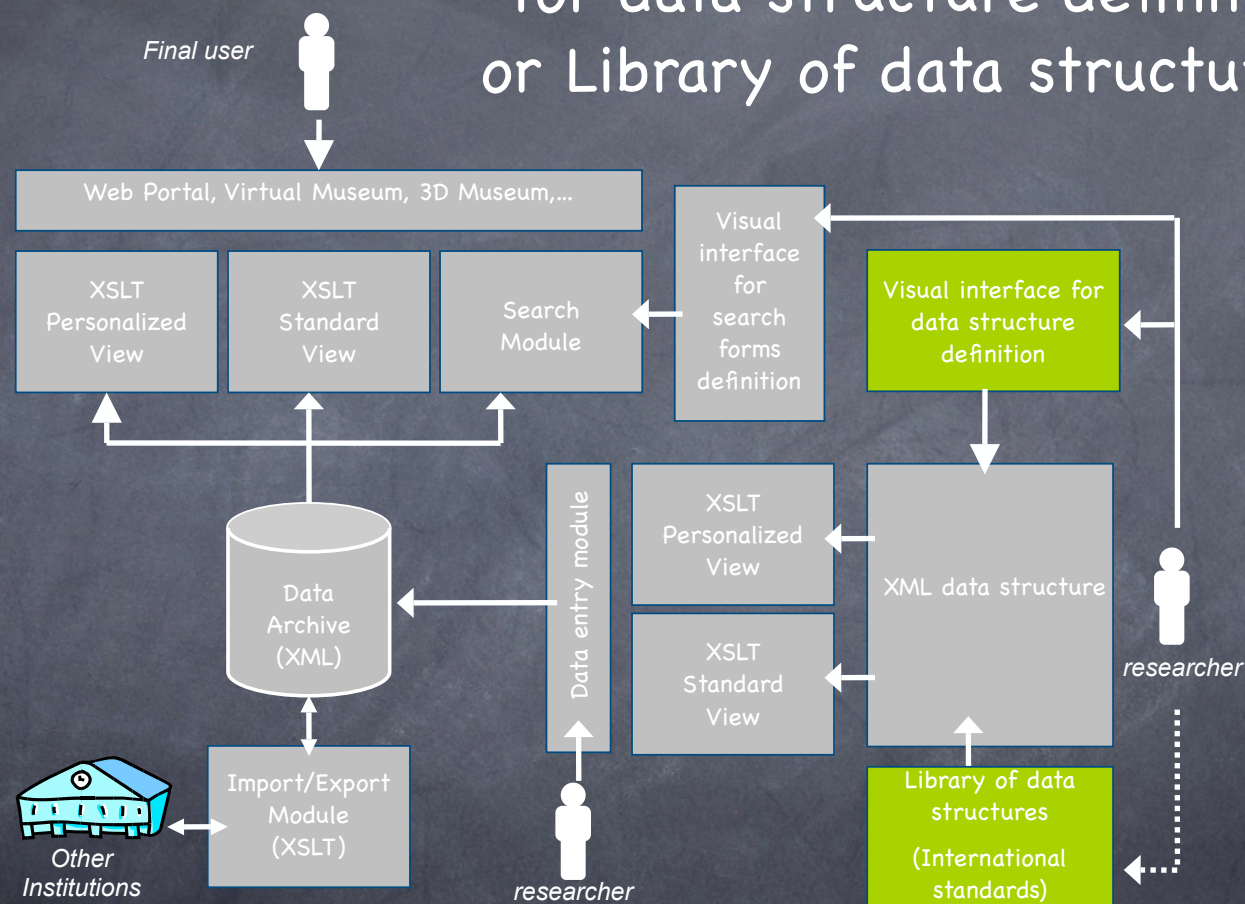








# Visual Interface for data structure definition or Library of data structures





# Visual interface for data definition

ICT for EU-India Cross Cultural Dissemination

**E-Contents Platform**  
Heritage and Science

home | project | news | search in archives | virtual museum | contact us

**XML Data Structure Definition**  
Project: Indian Sculpture  
Card: Sculpture description

**Step 1 : specify the name of each field**

|             |
|-------------|
| Title       |
| Period      |
| Image       |
| Measurement |
| Stone       |
| Dynasty     |
| Provenance  |
| Details     |

Submit

PROJECTS LIST  
XML CARDS LIST  
CREATE NEW PROJECT  
CREATE NEW XML CARD  
HELP



# Visual interface for data definition

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**XML Data Structure Definition**  
Project: Indian Sculpture  
Card: Sculpture description

**Step 2 : specify the type of each field**

| Field       | Type   |
|-------------|--|
| Title       | Short Text   |
| Period      | Date   |
| Image       | Image  |
| Measurement | STRUCTURED   |
| Stone       | Short Text   |
| Dynasty     | Short Text   |
| Provenance  | Short Text   |
| Details     | Long Text<br>Short Text<br>Long Text<br>Date<br>Value<br>Image<br>File<br>STRUCTURED |

Submit

PROJECTS LIST  
XML CARDS LIST  
CREATE NEW PROJECT  
CREATE NEW XML CARD  
HELP



# Visual interface for data definition

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**XML Data Structure Definition**  
Project: Indian Sculpture  
Card: Sculpture description

**Step 2.1 : the field measurement is a structured field**

Specify the **name** of each field subject of measurement

width  
height

Submit

PROJECTS LIST  
XML CARDS LIST  
CREATE NEW PROJECT  
CREATE NEW XML CARD  
HELP



# Visual interface for data definition

## Automatic generation of DTD or XML Schema

```
<!DOCTYPE indianSculptures [
<!ELEMENT indianSculptures (sculpture*)>
<!ELEMENT sculpture (title, image, period, measurement, stone,
dynasty, provenance, details)>
<!ELEMENT measurement (width, height)>
<!ELEMENT title (#PCDATA)>
<!ELEMENT image (#PCDATA)>
<!ELEMENT period (#PCDATA)>
<!ELEMENT width (#PCDATA)>
...
<ATTLIST title type CDATA #FIXED "shortText">
<ATTLIST image type CDATA #FIXED "image">
<ATTLIST period type CDATA #FIXED "date">
...
]>
```

**Step 1 : specify the name of each field**

|             |  |
|-------------|--|
| Title       |  |
| Period      |  |
| Image       |  |
| Measurement |  |
| Stone       |  |
| Dynasty     |  |
| Provenance  |  |
| Details     |  |

**Step 2 : specify the type of each field**

| Field       | Type       |
|-------------|------------|
| Title       | Short Text |
| Period      | Date       |
| Image       | Image      |
| Measurement | STRUCTURED |
| Stone       | Short Text |
| Dynasty     | Short Text |
| Provenance  | Short Text |
| Details     | Long Text  |

**Step 2.1 : the field measurement is a structured field**

Specify the name of each field subject of measurement

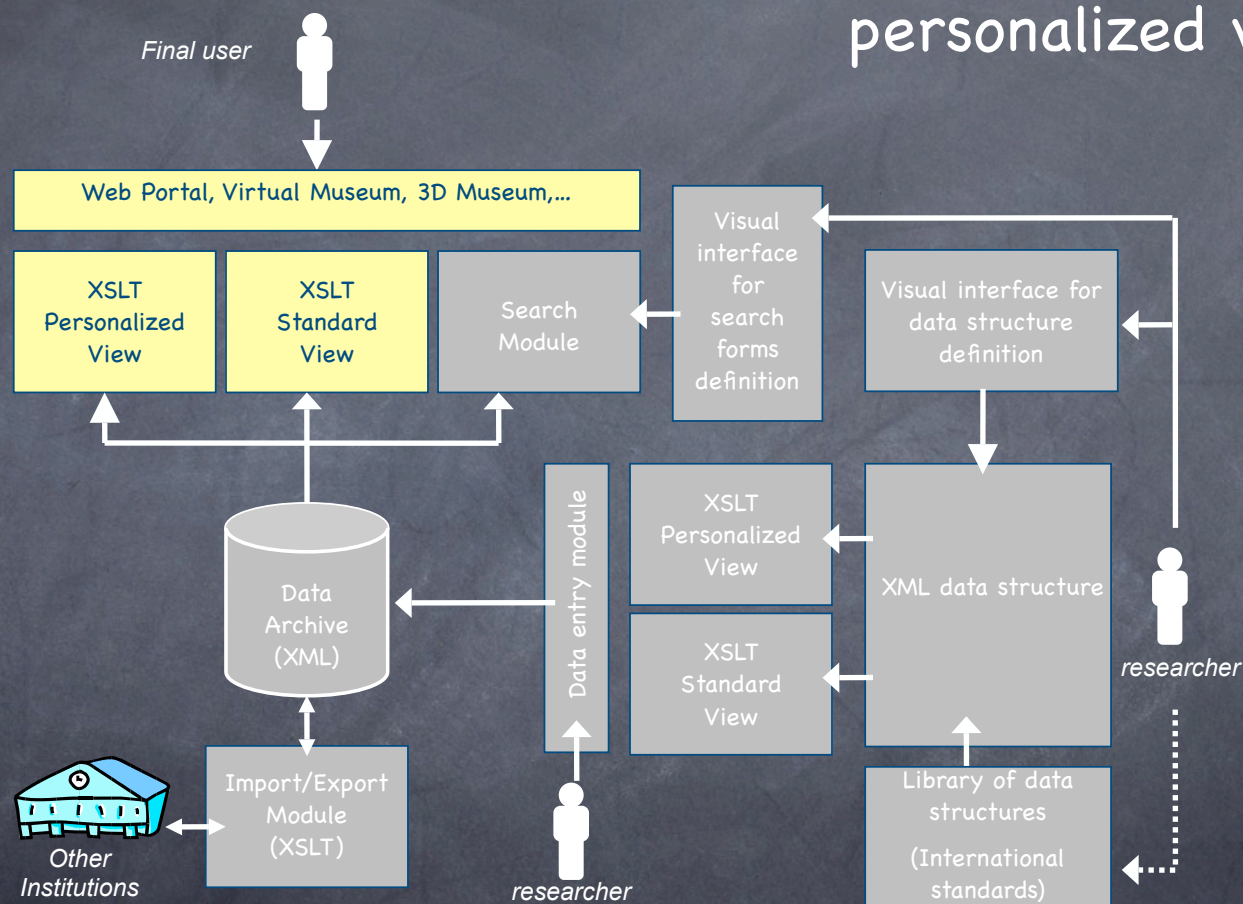
|        |  |
|--------|--|
| width  |  |
| height |  |







# Standard and personalized view





# E-Dvara

## E-Content Platform for Heritage and Science



You are in: [Home](#)



### What is an E-Content Platform?

We analyze how to address portability of existing cultural dissemination assets such as Science and Heritage museums on a digital platform. In particular, we address the problem of e-contents for Science and Heritage popularization, i.e. of making accessible on the net the kind of experiences which can raise the awareness of the youngsters and the laymen in these areas. Special emphasis goes also in the direction of experimenting with existing solutions for enhancing digitally the fruition of cultural artifacts.

This platform is an archive of cultural and scientific contents in digital format. In particular it includes some samples from the Archeological Museum Hyderabad, Modern collection and more.

### Access to archives

- ➔ **L'archivio dell'indianista Luigi Pio Tessitori (1887-1919)**  
L'archivio comprende il materiale fotografico e i documenti inediti dell'indianista Luigi Pio Tessitori conservati oggi a Reana del Rojale nella residenza del nipote dr. Guido Peano.
- ➔ **E-Vidya - The Indian Contribution to Modern Science**  
The project deals with the contribution of the most significant Indian sciences to the formation of modern science. The project includes a database with an updated bibliography and a digital archive with transcriptions and images of the most relevant manuscripts kept in the European and Indian libraries.
- ➔ **Tessitori and India**  
The main part of the project consists of materials from the archives of the Italian indologist Luigi Pio Tessitori (1887-1919) conserved at the "Vincenzo Joppi" Civic Library in Udine and at the residence of the Tessitori's nephew, Dr. Guido Peano, at Reana del Rojale.
- ➔ **Birla Archaeological & Cultural Research Institute Art Collections**  
Filing and cataloguing cards of the art works belonging to Birla Archaeological & Cultural Research Institute - Hyderabad (Andra Pradesh, India).

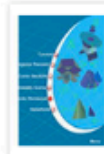
### Virtual museum



#### Birla Archeological Museum

It is possible to access to the collections of the Birla Archeological Museum and find several information about each item.

AVAILABLE SOON



#### Kurnool Museum

It is online the "Kurnool Museum" where you can find virtual experiments in several fields, including mechanics, optics, mathematics, etc.

AVAILABLE SOON

### News

- 04-07-2005  
More archives of INDIA projects will be available on this platform soon.
- 01-07-2005  
Is under construction a new 3D virtual museum including the collections of Birla Modern Art Gallery.

### Link

- ➔ University of Udine
- ➔ LIDA University of Udine



EU-India  
Economic  
Cross  
Cultural  
Programme



# E-Dvara

E-Content Platform for Heritage and Science

[home](#) | [project](#) | [news](#) | [search in archives](#) | [virtual museum](#) | [contact us](#)



## Indian Sculpture



(click for enlarge)

**Title:** Veerabhadra

**Period:** 16th C.A.D

**Measurement:** H:141cms W:74

**Stone:** Dolerite

**Dynasty:** Kakatiyan

**Provenance:**

Munnanoor (Mahaboobnagar Dist.) Telengana Area – A.P

**Details:**

Veerabhadra, eight handed in standing posture. He carries in his left hands a trident, bow, shield and a mace. The mace is rested to the ground. The right hands carry a sword, damaru, arrow and a sword. He is well ornamented with makuta, kundalas, haras, keyuras, valayas, kankanas, yagnopavita, katibandha, long mundamala going down the knees, ardhoruka, manjiras and high heeled foot wear. There is a prabhavali (?) behind with a central kirtimukha. At the base Daksha and his consort are depicted one on either side. A well carved and preserved sculpture.

## Contents



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# E-Dvara

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8 Meera Mukherjee Bronze

(click for enlarge)

**Title:** Meera Mukherjee

**Period:** Contemporary

**Location:** Hyderabad

**Material:** Bronze

## Contents

Somnath Hoare

Tarak Gharai

Sunil Kumar Das

Next list ->



ICT for EU-India Cross Cultural Dissemination

# E-Dvara

E-Content Platform for Heritage and Science

You are in: [Home](#) > [Archives](#) > [Tessitori and India recordings](#)

## Access to archive: Tessitori and India

There are currently 10 items in this archive.

Page 1 of 2 [next](#)

| Title  | Description   |
|--|---|
| <p><b>AP/V/1/01 - Naples, March 1914</b></p>     | Dr. Luigi Pio Tessitori and Dr. Riccardo Nobile in the garden of the Royal Observatory in Capodimonte |
| <p><b>AP/V/1/05 - Calcutta, Summer 1914</b></p>  | Dr. Tessitori in his study in Dr. G.B. Rocca's residence, Esplanade 8                                 |
| <p><b>AP/V/1/33 - Mandor, 2 August 1914</b></p>  | Devala  |
| <p><b>AP/V/1/35 - Mandor, 10 August 1914</b></p> | Nagapañcami mela: Devala with people  |
| <p><b>AP/V/2/28 - Kolu, 23 February 1915</b></p> | The twin temples of Pabuji  |

Page 1 of 2 [next](#)

### Search

In order to search digital e-contents in this archive insert some keywords.

Title

Photographer

Collection (name or place)

Places



# E-Dvara

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## Vase gallery

### COPPA LACONICA



Material: Clay

Origin: Laconia

Period: VI century B.C.

Notes:

### KYLIX



Material: Ceramics

Origin:

Period:

Notes:

## Instructions for 3D Visualization



For visualising objects in three dimensions, please use the CORTONA VRML CLIENT.

You can download it from [this page](#).

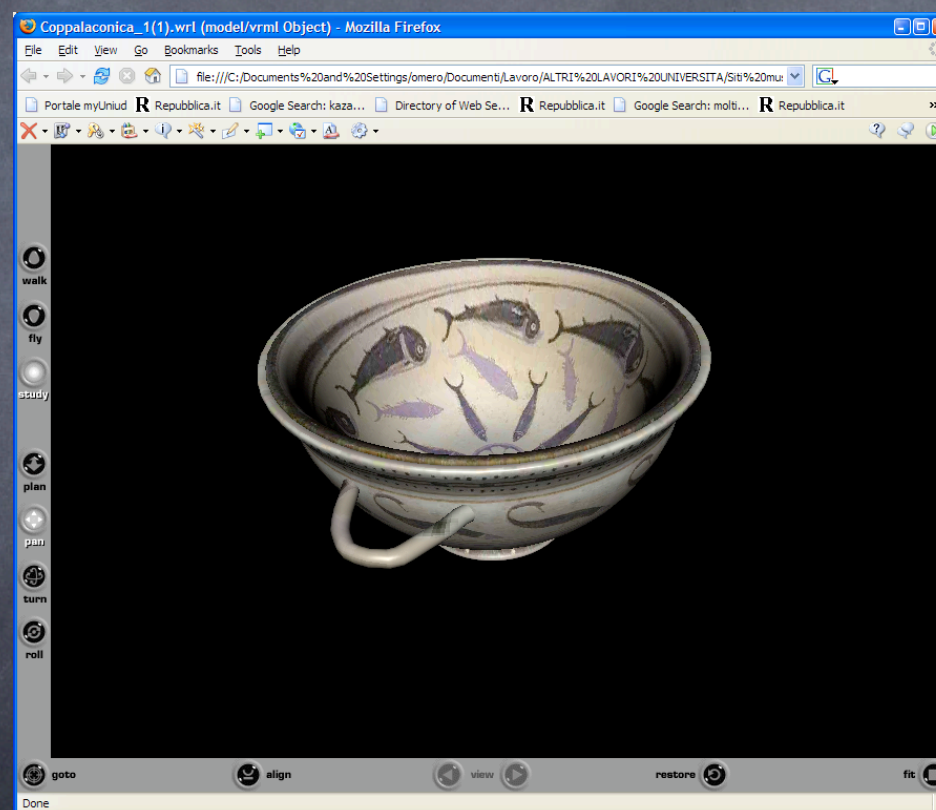
Have a Good Navigation!



# 3D VRML object



# 3D VRML object





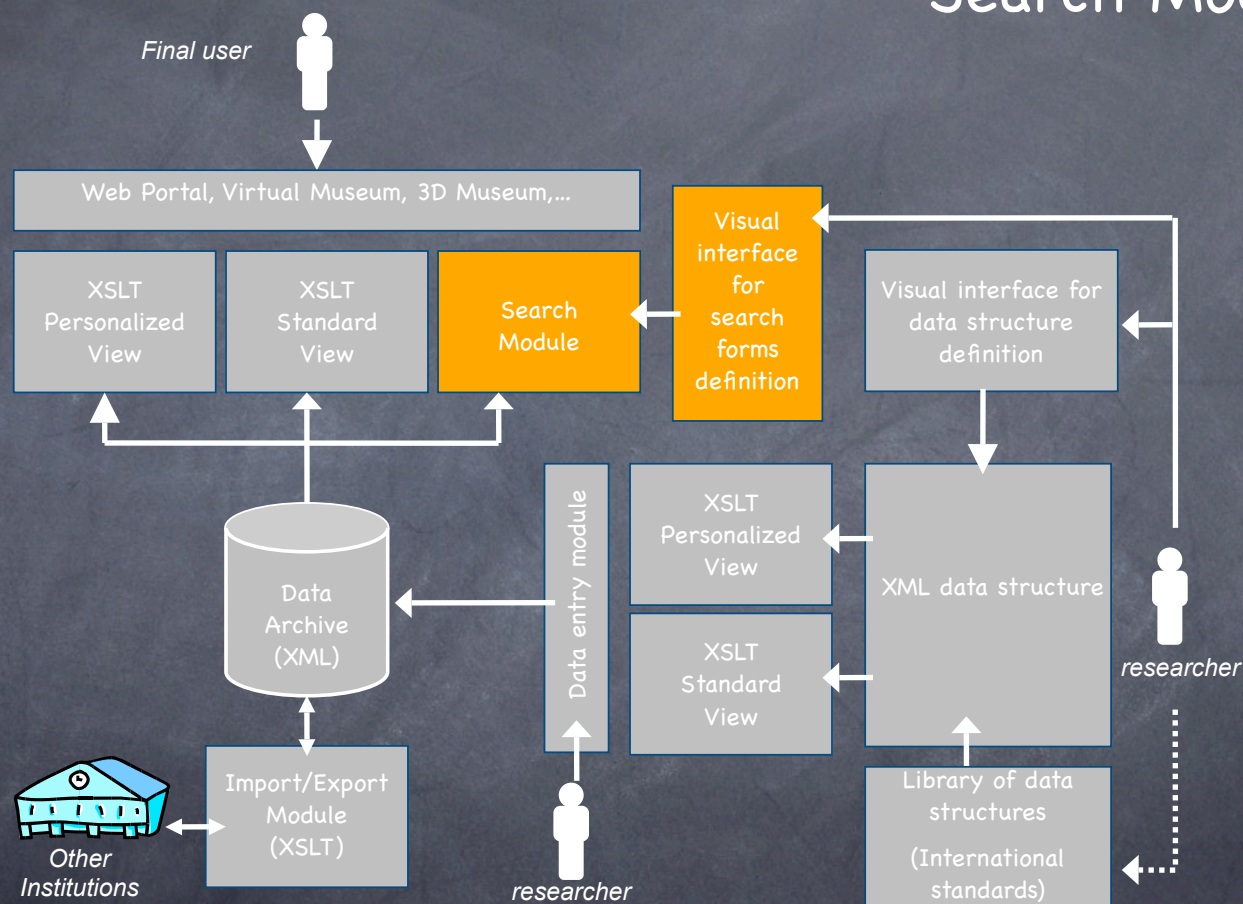
# 3D Virtual Museum



(dott. Roberto Ranon)



# Search Module





# E-CONTENTS PLATFORM



Records publishing

Projects management

PROJECTS LIST

CREATE A NEW PROJECT

ADVANCED SEARCH ADMINISTRATION

CARDS LIST

CREATE A NEW CARD

PROJECT: Tessitori and India

## List of the advanced search forms

Sequence of steps

| STEPS | DESCRIPTION                              |                                 |
|-------|--|---------------------------------|
| 1     | List of the advanced search forms        | current                         |
| 2     | Creation of an advanced search form      | <a href="#">go to this step</a> |
| 3     | Modification of an advanced search form  | -                               |
| 4     | Creation of an advanced search field     | -                               |
| 5     | Modification of an advanced search field | -                               |

It's possible to request the enabling or the disabling of a search form, its removal or its modification.

Form name: DEFAULT



ENABLE



MODIFY



REMOVE

MODIFY

Title [ Title (T&I Citation Style) Shelfmark (T&I Citation Style) Subject (T&I Citation Style) Places (T&I Citation Style) Date (T&I Citation Style) ]

MODIFY

Photographer [ Photographer (T&I Citation Style) ]

MODIFY

Collection [ Collection (T&I Citation Style) Place (T&I Citation Style) ]

MODIFY

Places [ Places (T&I Citation Style) ]

DEFINE A NEW search FIELD



VALID



# Searching features



# Searching features

- The system **automatically** generates a search form from the data structure definition

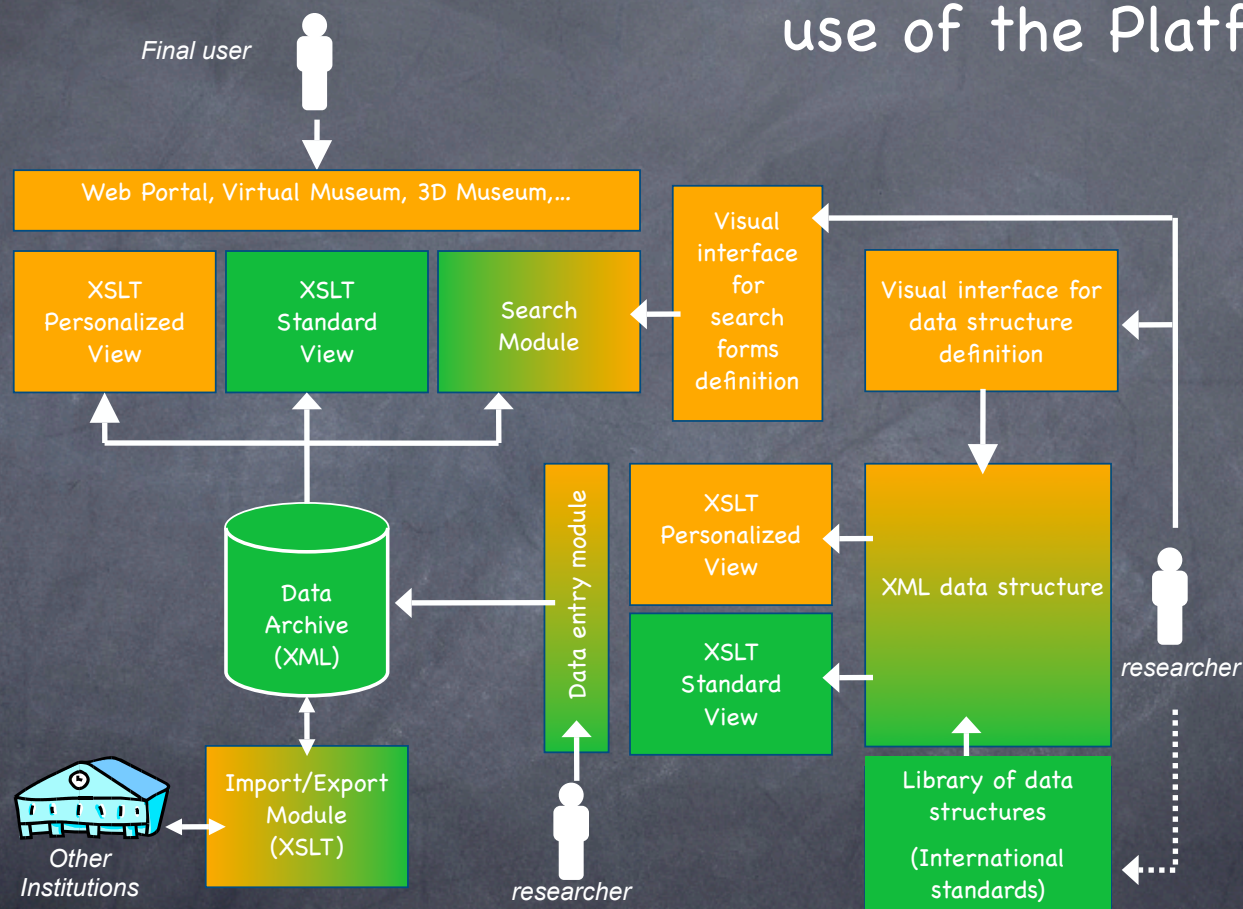


# Searching features

- The system **automatically** generates a search form from the data structure definition
- It is possible to define personalized forms **grouping** set of fields that will be searched in OR.



# Standard and Personalized use of the Platform





# User interaction

- Hands on museum
  - **virtual experiments** (attachment of flash file)
  - Physics, Computer science
- Contributes of visitors
  - Save **comments** and info provided by users about items exposed in virtual museum
  - Other visitors can read comments and write other **opinions** or provide other info
  - **Rating** quality/contents of museum



# Innovative elements

- The **generalized approach** allows to solve the problem of storing materials of different nature
- The platform can be used in a **personalized way** according to the user needs
- Open to **international standards** of data definition
- High **interactivity** with users



# Extendibility

- Data set definition
- Interface for the utilization
- Searching capabilities
- Import/Export of data
- Interoperability with other archives



# Questions?



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