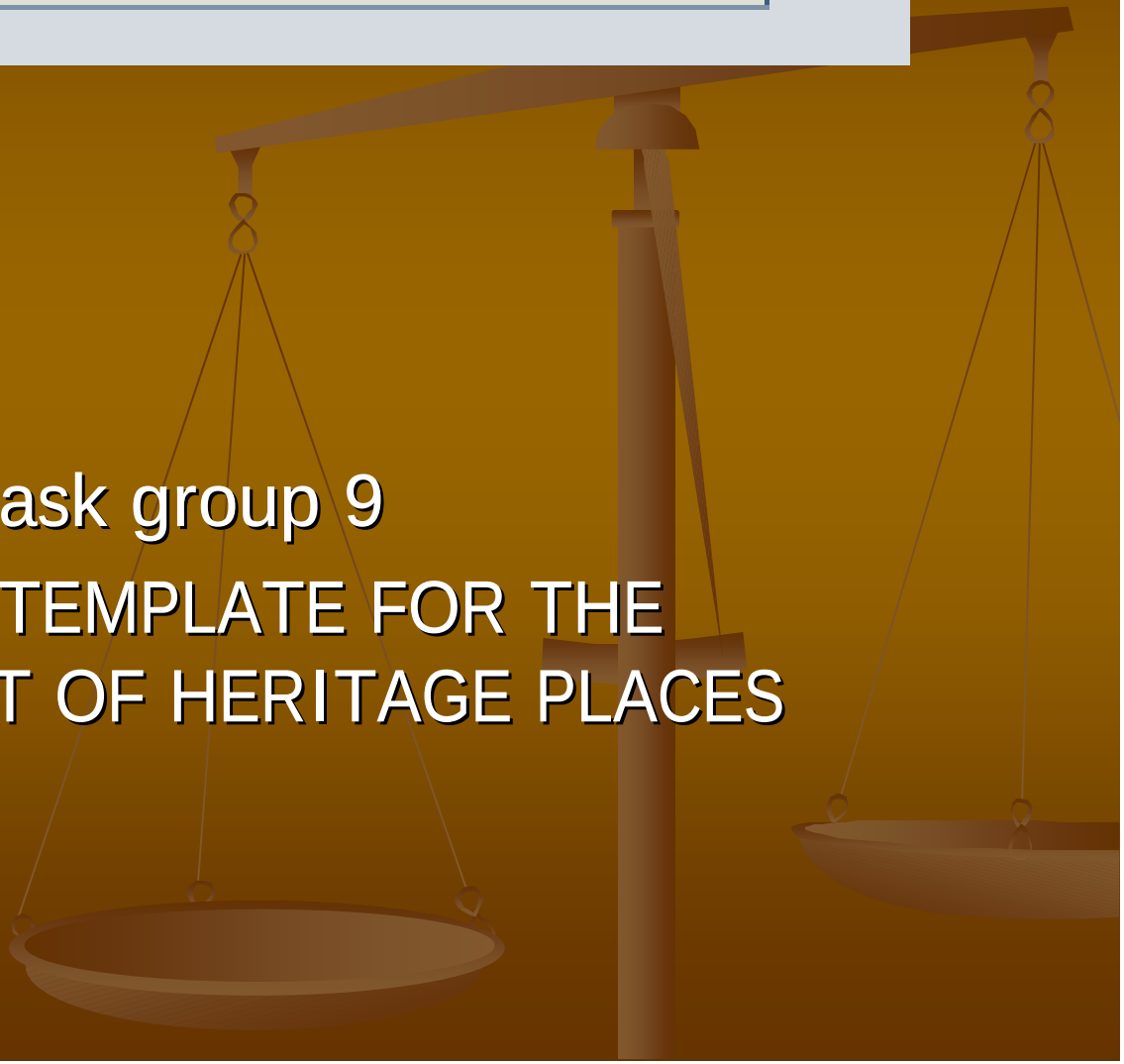
RecorDIM



Task group 9

GENERIC TEMPLATE FOR THE MANAGEMENT OF HERITAGE PLACES

INVOLVED

- USER:

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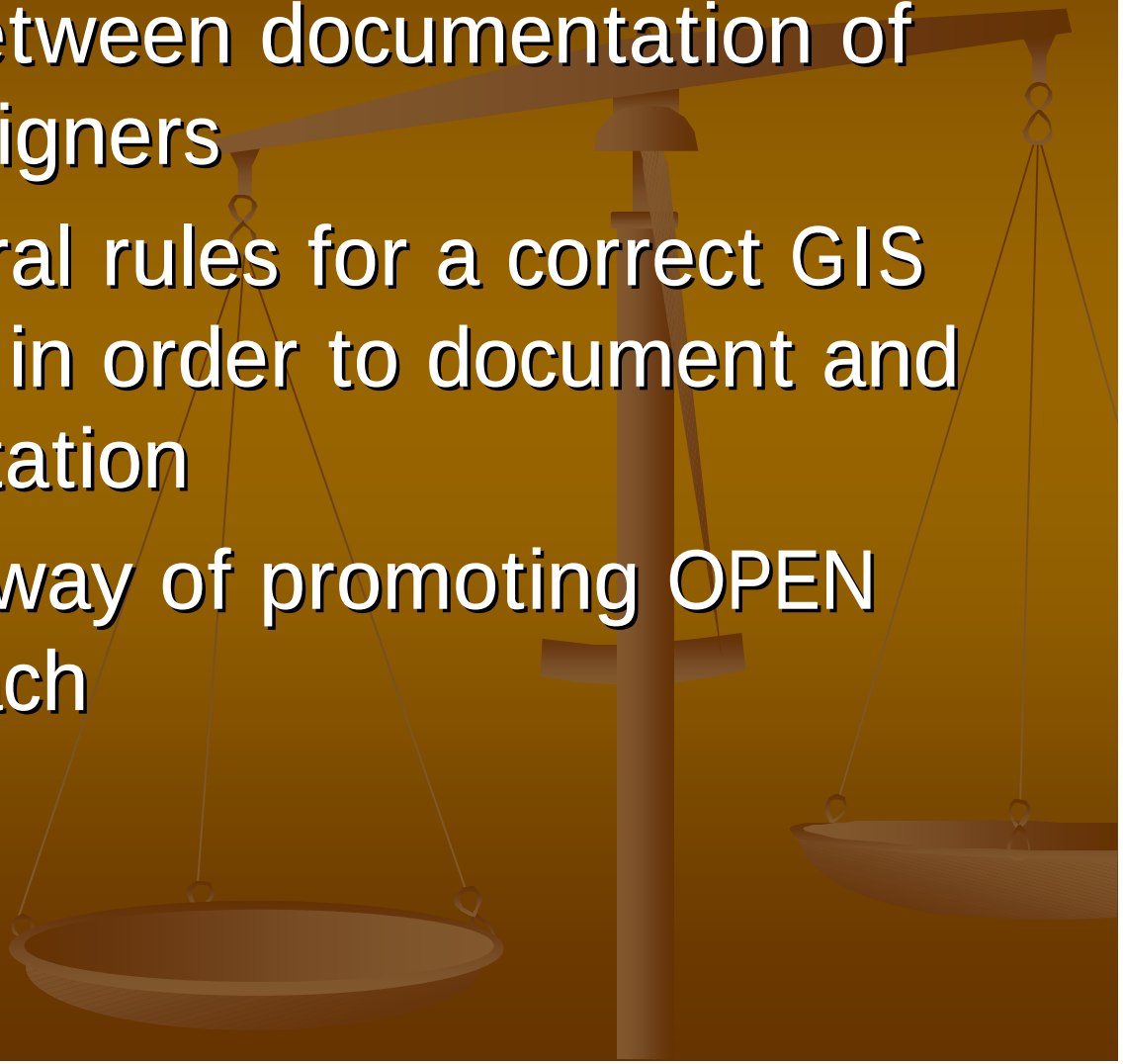
Objectives

- To FILL gaps between documentation of CH and GIS designers
- To STATE general rules for a correct GIS implementation in order to document and share documentation
- To DEFINE the way of promoting OPEN SOURCE approach



STATE OF ART: May 2006

ACTIVITIES FROM OCTOBER 2005 UNTIL APRIL 2006

- During the last months the provider has completed the analysis of the technical literature and prepared some short notes in order to define the contents of the manual.
- A draft index was prepared and some proposals about general contents of the manual will be proposed to RecorDim partners for discussion, correction and/or acceptance.
- In the same period the provider has chosen some practical example able to explain the concepts and the recommendations of the manual. The examples show a comparison between commercial and Opens Source solution, a comparison between desktop and WEBGIS solution.
- In next months the provider will finish the first draft of the manual in order to start the close discussion with the user.
- Provider and user will test the manual recommendations in one ore more practical examples and will discuss the results.

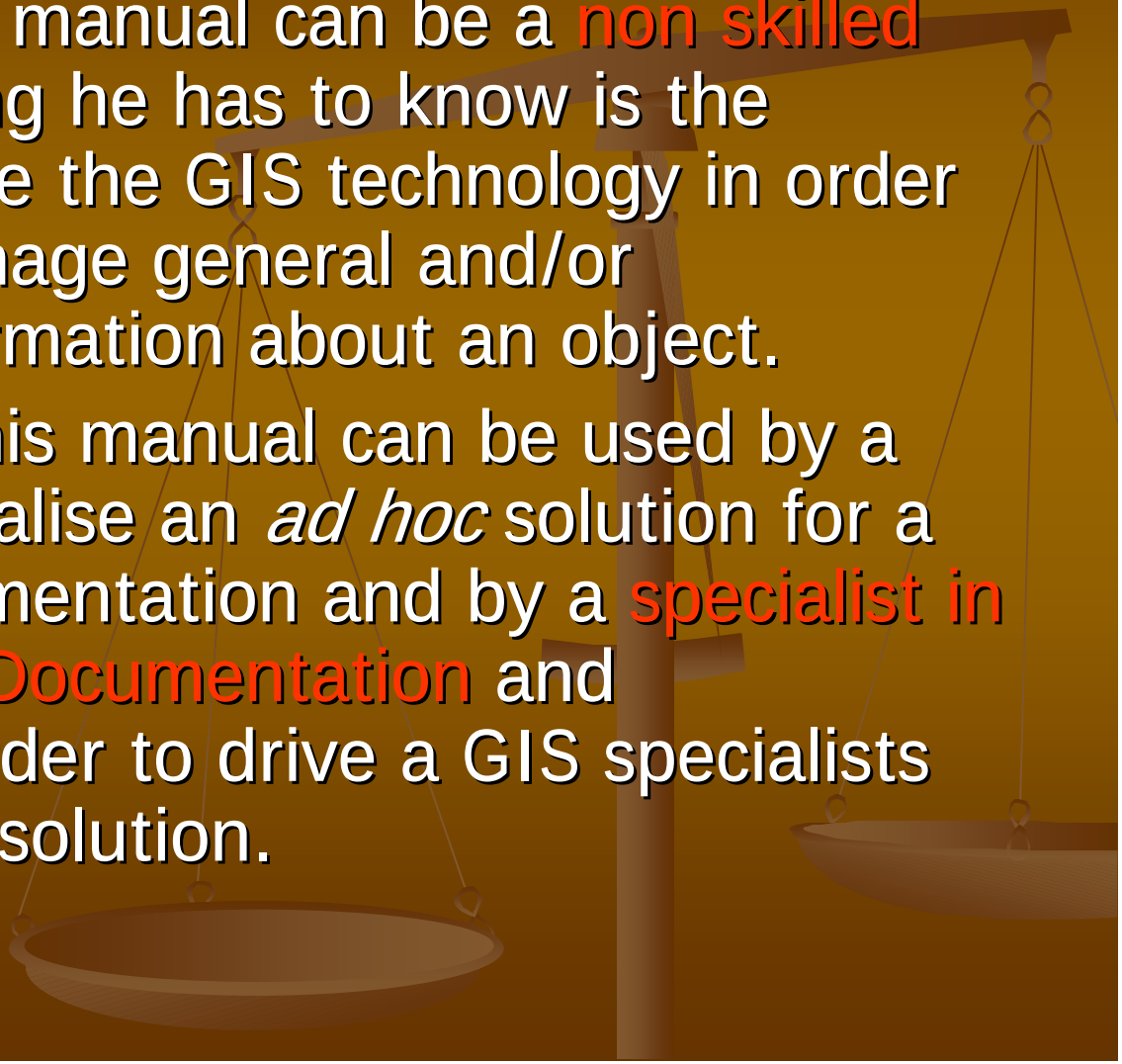
Proposed index

INTRODUCTION:
what is this manual and what is not

- This manual is not a GIS manual but a challenge to define how it can be possible to use GIS technology in Cultural Heritage Documentation and Management considering the achieved experiences well documented in the last twenty years.
- Therefore no technical aspects of GIS are described (many books and manual can provide today this information) but the specific ways to plan and realise an Information System for Cultural Heritage are underlined.

INTRODUCTION:
who can be the reader?

- The reader of this manual can be a non skilled user: the only thing he has to know is the possibility of to use the GIS technology in order to record and manage general and/or sophisticated information about an object.
- The contents of this manual can be used by a GIS provider to realise an *ad hoc* solution for a correct GIS implementation and by a specialist in Cultural Heritage Documentation and Management in order to drive a GIS specialists towards a correct solution.



INTRODUCTION:
CH Documentation and management

- Cultural Heritage Documentation is an intelligent tool able to inquire the collected data in order to give to the specialists new suggestions and helps for the interpretation of the data themselves.
- Cultural Heritage Management is the set of activities aimed to shared the knowledge about a specific object to different users (e.g. scientists, tourists, curious, etc.) and to allow practical decisions about maintenance, restoration, etc. So the management requires a complete knowledge of the object and easy methods to inquire the data in order to extract the needed information.

INTRODUCTION: GIS or SIS?

- The term GIS has been used mainly in Land management application. The term “geographic” is traditionally connected to an international cartographic reference system. Considering the geometric deformation of the geographic reference systems, the different kinds of cultural heritage objects (e.g. as defined in the Convention for the protection of Cultural Property in the Event of Armed Conflict, The Hague, 1954) the term “geographic” can be misinterpreted, so it is a better choice to talk about Spatial Information Systems (SIS) for Cultural Heritage applications of GIS technology. This assumption means that usually local reference systems (both continuous or discrete ones) are used in order to locate the acquired data; geographic coordinates (or global reference systems) can be used as ancillary information in order to locate the objects in a more general context.
- *The SIS is a virtual space were every kind of information can be referred to a specific point in a known spatial reference system. Beside this location of the data, the data themselves are connected in a logical environment (the Database) in order to allow an “intelligent” reading of the data.*

INTRODUCTION:
why a SIS for Cultural Heritage?

- Since 1990 SIS has been considered as an ideal instrument for the management of the knowledge on Cultural Heritage.
- First examples are from US, above all for their predictive capacity and, furthermore, from England and Europe. Starting form that period all the organisations involved in the preservation and management of cultural heritage accepted the SIS as the natural evolution of the more traditional databases.
- Here the four points which justify this trend:
  - significance of the spatial component of the collected data;
  - easy accessibility to SIS technology;
  - cultural heritage importance in the land planning strategies;
  - need of a modern way to distribute the results of the investigations (usually forced by donors and/or financial supporter both private and public)

GUIDELINES FOR SIS IMPLEMENTATION

The SIS implementation for a Cultural Heritage object is not an easy work. We can state that no general solutions can be offered in terms of data logical structure, investigation tools.

Cultural Heritage Documentation and Management strictly depends on the author's culture, specific goals of the intervention, epoch of the object, etc

GUIDELINES FOR SIS IMPLEMENTATION: The project team for the conceptual and logical assessment of the SIS

- The correct implementation of a SIS for Cultural Heritage Documentation and Management can be performed only by a multidisciplinary team: the project team.
- The project team is formed by a SIS manager and one responsible for each kind of investigation performed or to be performed on the investigated object. Each responsible has to coordinate the team of the specialists in only one field of investigation and has to report the decisions to the project team.
- Each responsible has to be able to accept or reject the proposals of the SIS manager in order to preserve the integrity of the inquiry to be performed.
- Today, most of the SIS implementations require the recovering of old data and studies performed in the past by different specialists usually checked, integrated and/or completed by other specialists.
- All the involved specialists have to participate in the comprehension of the data and of their interpretation. In case of new data to be collected the specialists have to discuss with the SIS manager on order to organise the collection of the data considering not only the goals of the investigation but also the practical rules which allows a quick and protected input of the data inside the systems.
- Each documentation specialist has its own criteria to collect data: tables, symbols, key words, etc. Each of these argument has to be discussed before with the SIS manager.

GUIDELINES FOR SIS IMPLEMENTATION: key words

- Some aspects of the object can be recorded by different specialists. So a common key words list, or at least an intermediate translation list, must be defined. As an example if the specialist A uses the term “date” to record a specific temporal event and the specialist B uses the term “epoch” to record the same information the possible solutions are: A and B decide to use a unique attribute, A and B use two different terms but, inside the database, these terms are grouped in the same attribute (e.g. the intermediate list says that “date” and “epoch” are the same attribute of the element).
- This is not an easy goal to reach. Each specialist usually do not like to change a consolidated tradition.
- A possible solution can be the use of some accepted Thesaurus (e.g. British Museum Materials Thesaurus, Art and Architecture Thesaurus from Getty).

GUIDELINES FOR SIS IMPLEMENTATION:
data management common criteria

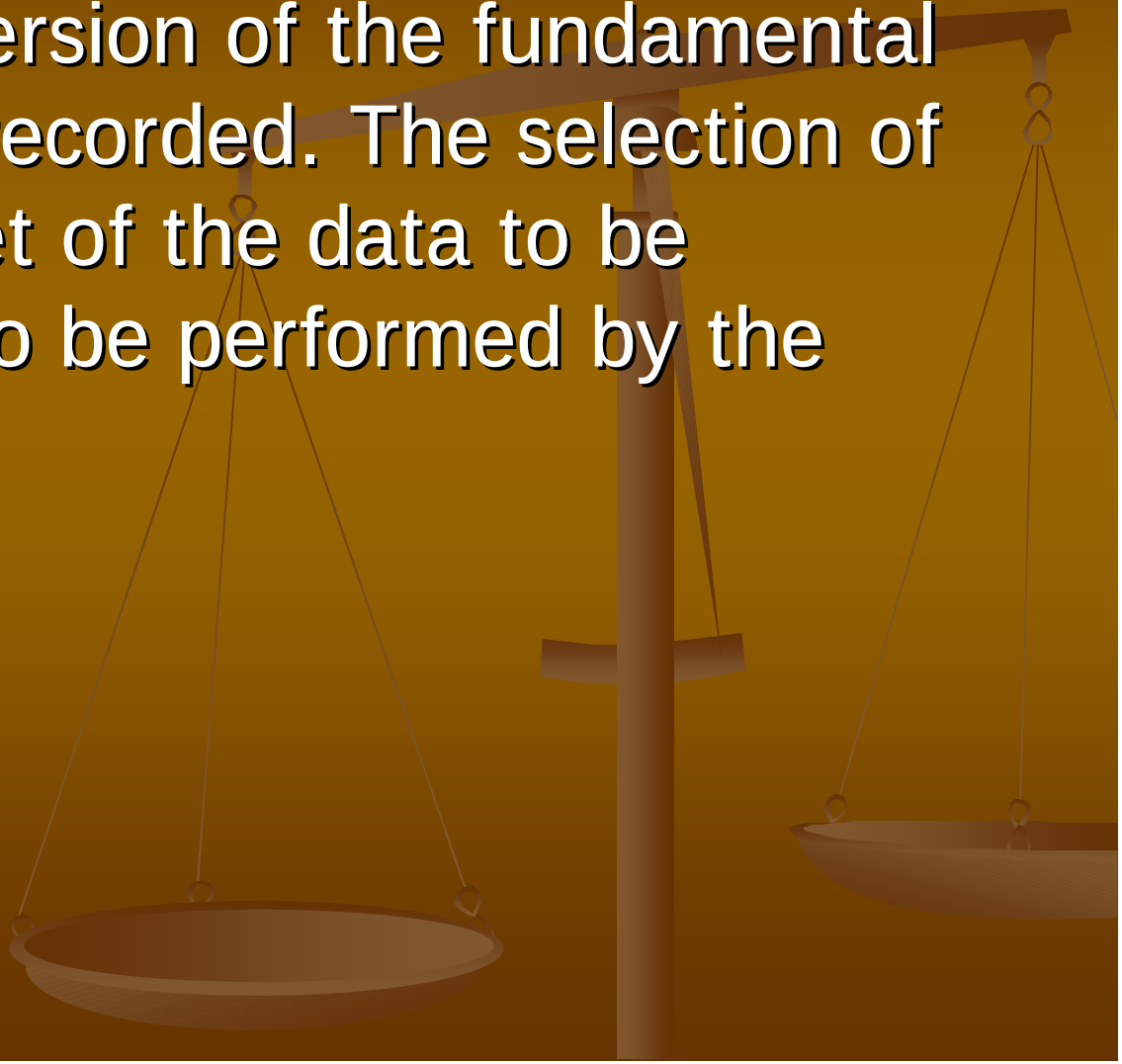
- Usually many researchers are involved in investigation. So common rules in order to acquire the information have to be defined also between specialists of the same field.
- Common rules for bibliographic lists, date recording, image acquisition, etc have to be decided before to start with the data collection.
- These rules can be modified during the work but in these cases all the acquired data have to be converted into the new structure each time.

GUIDELINES FOR SIS IMPLEMENTATION:
data quality parameters

- A multidisciplinary environment and the international standards require that each information has to be evaluated in terms of accuracy, completeness and consistency or, in a unique word, in quality.
- A general attribute (e.g. a date, an author, etc.) can be correct with different degrees of confidence (e.g. I am sure, I am quite sure, I think it is right, I hope so, some friends say it to me, some enemies say it to me, I've not idea, etc.). Sometimes is not possible to give a value to the attribute. All kind of information about a defined attribute is important, also the "null" result.
- The quality estimation allows different values for the same attribute and a critical and truthful reading of the collected information. A "null" value or a low quality value of an attribute is not an error.

GUIDELINES FOR SIS IMPLEMENTATION: languages

At least English version of the fundamental data has to be recorded. The selection of the minimum set of the data to be translated has to be performed by the project team.



2.2 Spatial data management

- **2.2.1 Coordinate reference systems**
- **2.2.2 Precision and accuracy**
- **2.2.3 Scale and resolution**
- **2.2.4 The "space component" of the attributes**

2.3 Sharing and reuse of the data and the system

- **2.3.1 Digital data format (text, manual sketches and drawings, photographic images, digital images, metric survey results and representations, analysis results, etc.)**
- **2.3.2 Data Interoperability and relocation**
- **2.3.3 Metadata structures**

2.4 General rules

3. SIS TECHNOLOGY FOR CULTURAL HERITAGE

3.1 Desktop and WEB oriented solutions

3.2 Commercial solutions

3.3 Open Source solutions

4. PRACTICAL EXAMPLES

4.1 Royal Park of Racconigi (UNESCO LIST): desktop and WEB solution, commercial and Open Source approach for documentation and management

4.2 Archeological applications: Elaiussa Sebaste and Arslantepe (Turkey)

4.3 Urban applications

4.4 .....