Practices of "Local" Repositories of Legally Protected Immovable Monuments - A Global Scheme for 'Designation – Significance' Information

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Abstract: *The existence of historic building records in "paper fiches" is a reality and constitutes a rich store of information about the past, some of it unique. In this article we present the results of a survey aimed to discover the current practices for recording historic buildings, mainly from services of the Greek public sector. At the same time this work focuses on metadata elements used for the description of "designation"[69] information of legally protected monuments. In order to reduce syntactic and semantic heterogeneity for this type of information that revealed from the above survey we developed a metadata schema that enables efficient (and global) descriptions for designated monuments.*

Keywords: *Historic building records, Immovable monuments, Metadata standards, Monument, inventories, Architectural heritage, Designation information, Protected monuments, Metadata schema, Semantic interoperability.*

I. INTRODUCTION

The investigation and documentation of the built heritage is central to our understanding of our historical evolution. Historic buildings, especially, form a conspicuous component of the urban and rural scene, and constitute a rich store of information about the past, some of it unique (English Heritage, 2006). These structures of our culture usually have documentation in form of so-called: paper fiches (Kepczynska-Walczak, A., 2005), inventory cards - forms, white cards and are dispersed in a number of various Greek public services and institutions.

In order to explore this type of documentation, that remained until nowadays unexplored, we conducted a survey, from April 1, 2010 through March 15, 2011 involving a sample of 43 services of public sector (90%), mostly of the Greek Ministry of Culture and Tourism and 5 non-profit organizations and institutions in Greece[70]. Most of the participants working in the field of the built heritage play an important role on local level as their authorities refer to all matters concerning mainly the safeguard and protection of Hellenic heritage as the conservation, reconstruction, study and publication of the monuments. Objectives of this survey was to explore - at a national level - the methodology used for documenting historic buildings and generally immovable monuments, the existence of building records in "paper fiches", the degree of syntactic and semantic interoperability regarding their compilation methods, as well as to identify and highlight common descriptive needs among these organizations.

Participants were requested to complete a questionnaire, contained a total of 17 questions and to return it with a completed example of their form (if used such a form). Among many interesting findings we collected 31[71] different forms including a total of 135 elements

II. EXPLORING THE PRACTICES

Participants were asked if they compile or use forms in "paper fiches" for the recording of historic buildings and generally for immovable monuments, research reveals that 31 Organizations (65%) produce or use such forms. About 77 percent (24 Organizations), said that forms had been produced by their own staff, while 7 Participants (23%) use forms from cognate services. The compiler is always a member of the staff, either archaeologist or architect engineer or a working group composed of archaeologists and architects.

Moreover we asked to mention the basic purpose and objective of these forms: The responses reflect their needs to record, inventory or identify immovable monuments located within the jurisdiction of the Organization, making thus a "local" inventory for "local" use, while institutions embrace research as a basic purpose. The survey also reveals that the majority of these records are limited to legally protected buildings complemented by the minimal information necessary to identify the name, the protection type and its date as any official act or decision, which provides legal protection to the monument.

The most basic question in this research was about the method of preparation of that forms. The participants also were asked if they had followed or advised a guidance or a standard for the preparation of their forms (without any particular mention), as an interesting finding from the 25 organisations responded to that question only 8 (26%) followed an official guidance or schema. Sspecifically two Organizations prepared their form based to CIDOC–CRM (ISO 21127:2006), another two followed general guidance's

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[69] Term "designation" refers to legal protection of a monument.
[70] The list of participants is available at:
http://www.ionio.gr/~agathos/survey_immovable_GR

[71] All the Participants keep in store a total of 900,000 forms.

for recording historic buildings, 2 participants use forms for international Organizations and Committees (UNESCO- DO.CO.MO.MO.) and finally 3 organizations followed specific guidelines of Hellenic Ministry of Culture and Tourism. The findings of this question were expected as there is no legally binding standard for the built heritage recording in Greece

Moreover Organizations were requested to rate, whether the elements recorded on these forms satisfy their needs. A likert scale (from 1 - 10 with 10 being the highest) revealed a moderate satisfaction (mean: 5, 33) with no variation in satisfaction level, while only 28 percent of those responding to the question declare satisfied with the recorded elements (rating more than 7).

Furthermore, research gave space to participants to record their needs for additional elements that they would like to be included in their forms: The most common requirements was for elements that will record: documents related to the buildings, correspondence with other services, regular photography, marking on digital maps, recording of dimensions, analysis on materials, information about conservation and restoration status, interventions, delimitation of buffer zones. Not quite as many, but still a large number of organizations asked for: Land Registry info, documents of ownership titles, drawings, description of decoration and recording of morphological elements.

A disappointing finding of the survey, was that just over half of these forms (52%) are available only to officials (members of the staff), and only 48 percent of this information is available to the public.

Although all of these records co - exist in digital and print format, 20 organizations (65%) register these forms in a computer system and only 35 percent of these exist only in print format. As a follow-on from the question above, participants were asked if they had developed a relevant application in order to register these forms, a small number of responses (13) showed that public services create and maintain their own computerised record systems, their own "local database systems". Specifically 9 participants said that they have created a local database system, another 3 use web applications and 1 participant indicates "other" application, without specifying any particular. At this point it is worth to comment that, there is no lack of computerised heritage documentation system[72] in Greece, but public sector lacks the financial resources to maintain these information systems and there is a shortage of staff and of essential skills. This is a common problem, as 95 per cent of all cultural heritage institutions in Europe in 2002 were not in the position to

participate in any kind of digital cultural heritage venture (Mulrenin, 2002)

Furthermore organisations were asked if they produce digital content relative to historic buildings, more than half of the respondents (53%) replied positive: This is mainly: photographic material, drawings, scanned maps/plans, and in a small percentage: orthophotograpies - digital orthophoto mosaic and topographic backgrounds. After being informed of the existence of this digital content, participants were asked again about the format of this content. Survey records 6 types of formats (see Table 1 bellow):

	Format	Percentage
1	jpeg/tiff	42%
2	db	29%
3	cad	11%
4	xml	7%
5	xls	7%
6	doc	4%

Table 1. Formats of digital content

Finally, one of the most interesting statistics in this survey was that 46 participants (96%) thought that there is a need for encoding and standardization for information in the domain of immovable monuments, however only 2 (4%) thought that encoding of such information is not feasible and would be difficult to standardized.

The survey also contained a section for general comments. The following comment highlights that: "The documentation, with a systematic way, is the basis of any serious scientific research, but also the basis for monitoring the history and interventions for the protection of any historic building. Unfortunately, this approach is not addressed with the expected serious way, of the protection bodies[73]".

The most frequently voice requests (5 respondents) suggested the creation of a common schema for immovable monuments. The following comment is representative:"It would be desirable to have a form common to all, in which will be recorded in addition to the historical and architectural data and maintenance data, response and recovery. Occasionally there were some attempts with no avail so far".

Also there were also a small number of comments that demonstrated that: "Historic buildings - monuments, appears a set of unique characteristics, therefore, a coding would be quite limited only to few general elements".

III. STUDYING THE METADATA ELEMENTS FROM THE VARIOUS SCHEMAS
As mentioned bellow each organization prepares and uses its own form. The lack of a binding common schema for common building types has as a result same

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[72] «POLEMON» is the official information system of Hellenic National Archive of Monuments and was designed to meet the needs of the various units and services of the Hellenic Ministry of Culture providing an integrated set of tools for Monuments and Collections Management.

[73] Hellenic ICOMOS.

building types being described with a different informal element set (schema) each time.

Specifically from the total of 135 metadata elements harvested from the forms, which used to describe and illuminate a building, in this work we focused only on metadata that deals with the description of the legal status of an historic building and its significance. A total of 14 elements picked over and clustered in to a compound element set titled "Protection – Legal Status".

In their majority, the above forms accommodate metadata elements that allow only for statements concerned the type of protection *(Type of Declaration, Under Declaration)*, the date at which it was granted *(Characterization Date)* and if so, the relevant number of any official act by which the monument have been designated and listed as such in the Government Gazette *(Gazette Number, Number of Ministerial Decision)*. To a lesser degree additional elements provided about the government body whish is responsible for the building *(Inspected by, Protection Body)*, the grade of protection *(Protection Grade)* as specific elements for the type[74] of a buffer zone that serves to provide an additional layer of protection to the monument *(Buffer Zone Type)*. Several other records cite only the Gazette Number and its date, without providing additional information.

Specificity and exhaustivity is a major issue for these records. As emerged from the study, there is a terminological confusion, as organizations do not use a controlled list of terms for the various elements. Moreover elements of each schema, even when used to describe the same concept, differ. In order to give a typical example organizations use many non synonymous terms (f.e. *Type of Declaration / Characterization / Under Declaration*) in order to describe the protection status of a historic building.

IV. EXPLORING METADATA STANDARDS

In order to answer the question which official and widely used metadata standard for the description of material of our culture, would cover semantically the above described elements, a crosswalk practice was adopted and a switching mechanism was created[75]. The collected from the survey metadata elements, which describe designation information, are used as the switching mechanism among each of following

individual schemas (targets): MIDAS Heritage, CDWA, CDWA Lite, VRA Core 4.0 and Core Data Index to Historic Buildings and Monuments (CDI)[76].

From the crosswalking, we observed that there are exist important missing elements for "designation-significance" information: Specifically MIDAS Information Units as: *Statutory Name, Statutory Description, Protection Type, Protection Grade, Protection Start/ End Date*, could cover most of the 14 collected elements described above, but not all. Moreover MIDAS, it is the only from the examined schemas that is able to accommodate information about the government body *(Authorisation Required* unit of MIDAS) which is responsible for the building, as the radius or width of a Buffer Zone around the monument.

Protection/Legal Status section of CDI, is quite limited to record information's such as if the building is listed on a statutory list and the Grade of Protection to show their relative architectural or historic interest, and the date at which this protection was granted.

Description for the legal status and protection of a building in CDWA is limited to *Legal Status* subcategory that allows for general statements as "public property" "scheduled property" "registered property". As a shortcoming there are no equivalent elements in CDWA Lite and VRA Core for the elements of the source schema in this category.

Given the results of the crosswalking and the fact that most of the official examined standards, have been designed for general collection description of material of our culture (except *CDI*, which provides core information for historic buildings) emerged the need for an element set that fits exactly with real needs and requirements for this type of information.

V. A DERIVED ELEMENT SET (SCHEMA) FOR "DESIGNATION' INFORMATION

Based on the above analysis, we develop a schema, which integrates elements from different metadata standards and is enriched by new local domain elements, combined into a compound element set suitable for describing "designation/significance" information.

The schema introduce new unified (global) concepts for this information category such as any identifier *(Statute Identifier)*, title *(Statute Title)* and type *(Statute Type)*, of a decision or legal act under which the building is protected, element for the recording of the category of heritage protection *(Significance)* resulting from *Criteria* that could be given and explained, citing in parallel the appropriate *Legal System*. Any changes on the protection type and levels of the building could be recorded in *Alteration* element of the schema. Moreover schema accommodates elements that allows for statements like which part (section) of the building is under protection *(Protected Section)* as details for the authority which propose its protection and details for

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[74] The type of the Buffer Zone according to Greek Archaeological Law LAW 3028/2002 (Official Gazette: A 153 20020628)

[75] The switching mechanism is available at:
http://dlib.ionio.gr/standards/immovable_crosswalks.htm (*see catefory 11. Protection/Legal Status*). The mapping includes all the elements harvested from the survey. Results of this study have been accepted to Special track on Metadata & Semantics for Cultural Collections & Applications, Part of the Fifth International Conference on Metadata and Semantic Research (MTSR 2011), Yasar University, October 12-14, 2011, Izmir, Turkey.

[76] For brevity's sake will be referred as *CDI*

this proposal (*Nomination Proposal*). Also the schema amplify details on characteristics and authorized uses of a protected zone around the building (*Buffer Zone Type*) as well as the recording of its precise boundaries (*Buffer Zone Border*). Any owner's right, powers of local bodies or agreements could be recorded in a *Rights Note* element.

The above described elements could be considered primary information, and are of a wider general public interest.

THE PROPOSED SCHEMA

Name of Building (cdi)	**Nomination Proposal** (local)
Protection Type (cdi)	**Ownership Status** (cdi)
Grade of Protection (cdi)	**Protection Body** (local)
Statute Title (local)	**Buffer Zone Type** (local)
Statute Type (local)	**Buffer Zone Border** (local)
Statute Identifier (local)	**Buffer Zone Width** (midas)
Significance (local)	**Rights Note** (midas)
Criteria (local)	**Alteration** (local)
Legal System (local)	**Protected Section** (local)

Table 2. The proposed metadata schema

VI. ACHIEVING FORMAL SEMANTIC INTEROPERABILITY FOR THE PROPOSED SCHEMA

Having provided a vocabulary of concepts with natural-language definitions our goal is to extend it to a second level of formal semantic interoperability. Semantic interoperability is based on a precise and correct use of the formal RDF semantics embodies in the RDF graph data model (Nilsson et al., 2009). All metadata terms of the proposed schema described above will be identified with URIs and a conformance will be achieved with formally specified domains, ranges and sub-properties, in order to have formally stated relationships between terms and rules for using such statements. At this sense a normalized documentation will be prepared[77] in which the above elements will identified as precisely as possible (*Principle of Appropriate Identification* such in the case of DCAPs), including enough description in order to be of optimal usefulness for the intended audience of the schema (*Principle of Readability*).

VII. CONCLUSION

The nature of the information required for legal protection for the built heritage varies from country to country and from time to time. It may also vary in depth in the same country according to circumstances. Although it is recognised that "local" practices, and methods for the documentation of information, deals with designation procedures for historic buildings, will vary from organisation to organisation and country to country, and that each will define its own specific requirements, since the diversity of the legislation and the differences in national inventorisation traditions,(Council of Europe; Nantes, 1992), nonetheless, standardization will help moderate this chaos, especially with the help of metadata standards that focused distinctly on works of architecture, providing content and representation rules for this information as allowable content values.

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[77] The document will be available at:
http://dlib.ionio.gr/standards/Designation_Immovable.htm