Integrated Access to Cultural Heritage Information Pieces in Iran Astan-Quds Razavi's Organization of Libraries, Museums and Documents center: A Theory of Unionization Disparate Information Assets over Imam Reza's Zarih

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Abstract*: Information systems preserve and provide access to primary information sources, scientific information and literature. Among these systems libraries, museums and archives are known as memory institutions, which preserve cultural heritage information and objects. These systems overlap some duties in preparing information sources. Libraries hold a number of museums objects and archives documents such as manuscripts or engraving plates and museums or archives hold a number of library objects such as typical books or DVDs that may be about museum objects or archive documents. Such an interrelationship should definitely be integrated in common information storage or at least virtually integrated through mediation devices that allow a query to be simultaneously launched on distinct information depositories which again requires common semantic tools. Mediation tools and semantic web activities require an integrated, shared ontology for the information accumulated by libraries, museums and archives for all the collections that they hold from highly standardize products such as books, DVDs, etc to raw materials such as stones, plants or draft manuscripts. In this paper, we will present the interrelationship of multidisciplinary information sources gathered in Astan Quds Razavi organization of libraries, museums and documentation center which is included among the most important art and cultural heritage center in Iran and Islamic world.*

Keywords: *Memory institute, Cultural heritage preservation, Object oriented ontology, Accessibility integrated information, Astan Quds razavi organization of libraries, Museums and documentation center.*

I. INTRODUCTION

Around the world, there is both increasing demand and unprecedented funding available for high quality digital cultural content from trusted information providers such as museums, libraries and archives.(Gill 2004) Also, we have Heterogeneity which is one of the main characteristics of cultural heritage collections. It means that such collections may be composed of text written on different materials, paintings, photographs, 3D objects, sound recordings, maps or even digital objects. Furthermore, the objects are strongly related with the social and historical events that take place over time. Consequently, it is quite justifiable to expose the composite structure, diverse semantics and multiple kinds of relationships between the objects of these collections.(Kakali, Lourdi et al. 2007)

It is becoming clear that there is much conceptual overlap between the descriptive approaches used by museums, libraries and archives, and significant resources are available for leveraging those similarities in order to make digital cultural content more accessible online.

The CIDOC Conceptual Reference Model as an ontology, which allows for creating global networks of related knowledge(Gibson, Morris et al. 2007) offers an alternative solution to the challenge of providing meaningful integrated access to heterogeneous cultural heritage information.(Gill 2004) It facilitates the controlled exchange of the information between various memory institutions like archives, libraries and museums. The usage of CIDOC CRM ontology enhances accessibility to museum-related information and knowledge and provides an important information standard and reference model for Semantic Web initiatives.(Lourdi and Papatheodorou 2008) Although the CIDOC CRM originated in the museum community, it has been designed from the outset to promote rich information exchange between museums, libraries and archives (Le Boeuf 2003)

A. About Imam Reza's Holy Shrine

Imam Reza's Holy shrine (Persian:(ع)رضا امام حرم) in Mashhad, Iran is a complex which contains the mausoleum of Imam Reza, the 8th Imam of Twelve Shi'ites and is one of the oldest and most beautiful religious and historical monuments in the world.In the middle of 10th century, a burial chamber was built on the grave of Imam Reza (A.S.). This square-shaped building (today called Zarih) constitutes the center of the Shrine.The Holy Shrine of Imam Reza(A.S.) is administered by an organization known as Astan Quds Razavi which is a chartible foundation in Mashhad. It is considered as the most long-lasting organization which exists since the martyrdom of Imam Reza about 1200 years ago.

The organization of libraries , museums and document center of Astan QudsRazavi is considered as one of the most important treasures of the recorded knowledge of Iran and the world of Islam.It consists of 3 parts as follows:

1. The museums of the Astan Quds Razavi are among the richest museums of Islamic Republic of Iran, and are included among the most important art and cultural centres of the Islamic world. The first museum of A.Q.R. constructed in 1937 CE. It has several active museums as follows: Central museum wich contains the oldest tomb stone (epitaph) on the holy grave of Imam Reza, and the collections of art (painting); sea shields, snails; astrological instruments, clocks; weapons; porcelain,etc. (A.S). Quranic treasure Museum, Stamps Museum, Carpets Museum, etc.

2. Astan Quds Razavi Central Library is among the most important and the largest libraries in the Islamic world. This historical library was founded in 363 A.H./973AD., about 1027 years ago. Today, the Central Library of Astan Quds Razavi and all of its branches contain over 1.1 million volumes of work, including books, newspapers, manuscripts and other important documents. The available books are in 46 currently spoken languages including 32485 rare manuscripts, 1000 albums and 36000 microfilms from the rare manuscripts of home and abroad.

3. Documents Center of Astan Quds Razavi with more than 7 million pieces of historical documents such as official documents, decrees & edicts, photos, video tapes, etc. and more than 1 million copies of ancient and precious periodicals is one of the glorious and worthfultreasures in Iran. (Brakker and Kujbyshev 1999) (Wikipedia 2011)

II. METHODOLOGY AND RESULTS

In this paper we offer an example, how an ontology like CIDOC can be turned into a format from the perspective of an object. This is not a proposal for a standard for a documentation format, but it illustrates the possible semantic analysis of an object description into a view neutral machine-interpretable form. Our aim in presenting this example is to show that a museum object located in museum can be describes in details and even more can be related to other information objects located in other memory institutions such as library and archive.

In this work we selected the Imam Reza's 4th Zarih (burial chamber) as a museum object located in the museums of Astan Quds Razavi.

First of all, a studing different document, all the informations about Imam Reza's Zarih4th was derivated. Then the most important of them was represented in details according to CIDOC CRM enteties and was related with their relevant properties.(figure1)

The next step was finding relevant information objects regardless of its form for different enteies in the other information institutions such as library and archive of Astan Quds Organization. Finally, description of Zarih 4th accompaning with all this relevant information was represented and semantically organized according to CIDOC CRM model. (figure2)
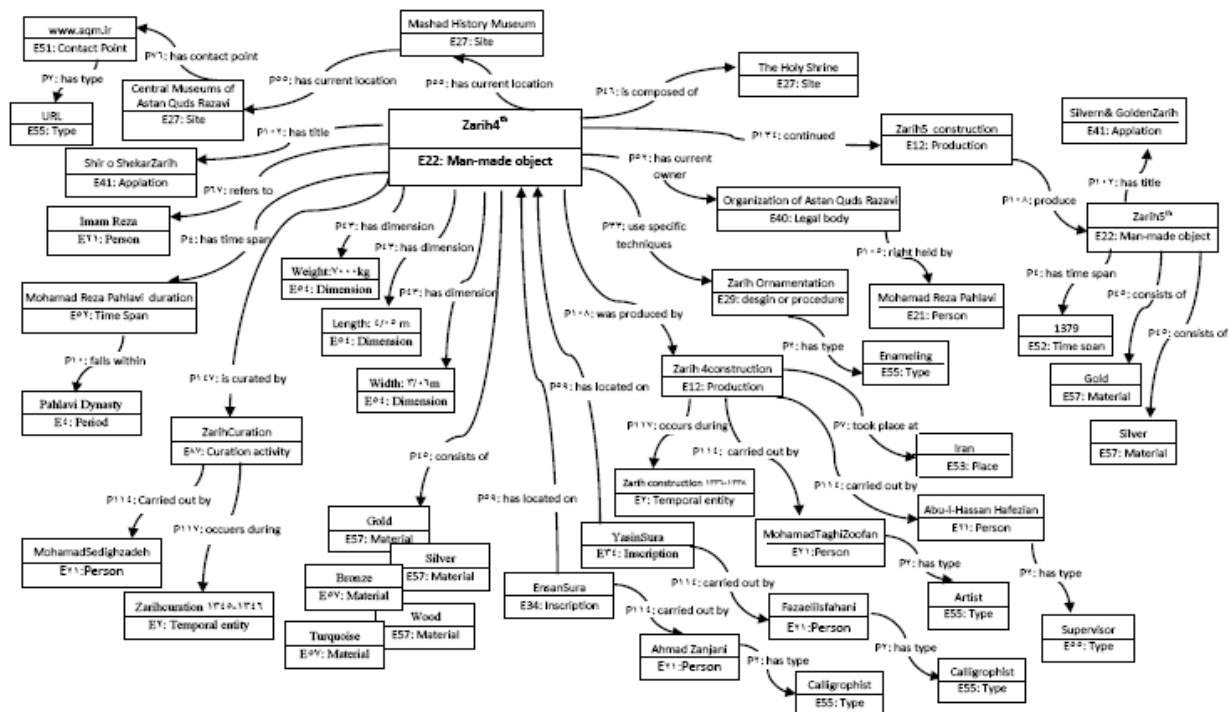

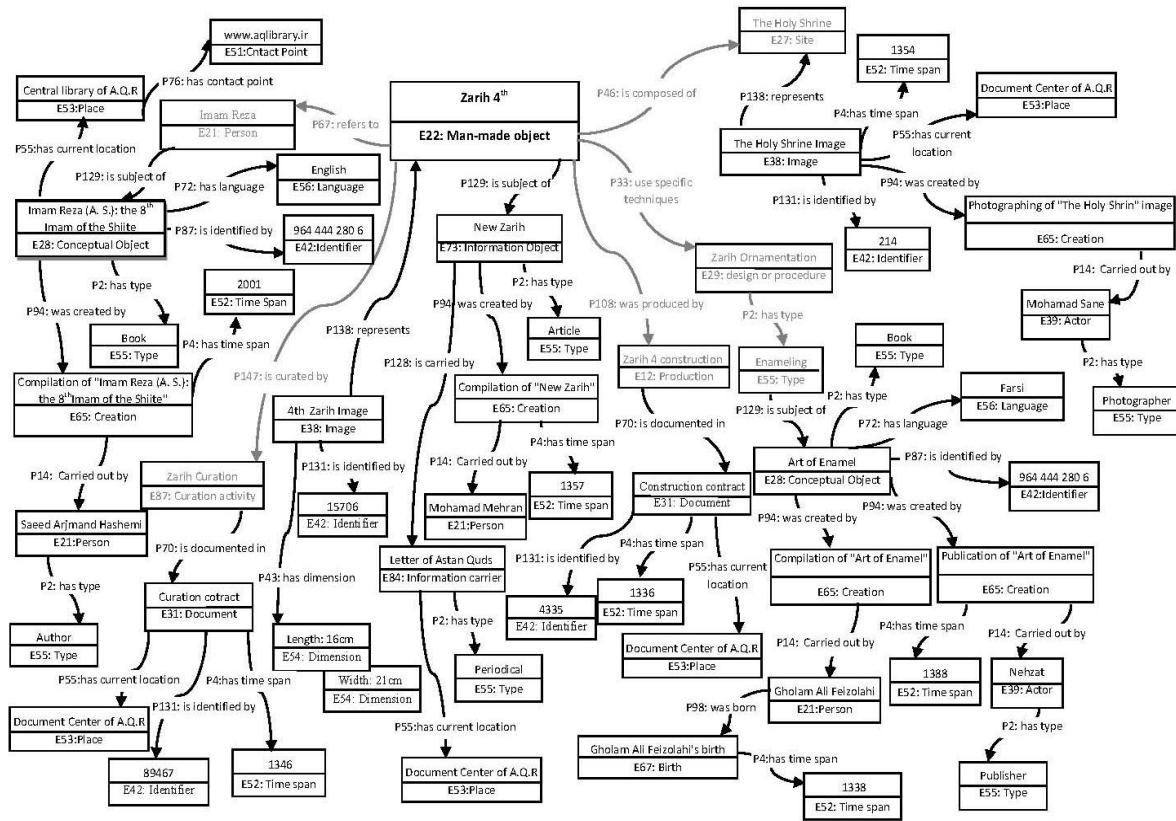**Figure 1:** A graphical representation of "Imam Reza's Zarih 4th"using CIDOC CRM

Figure 2: A graphical representation of Imam Reza's Zarih 4th" accompanying with relavant information objects

So, if we are interested in searching every part of information on burial chamber of Imam Reza so called "Zarih" and search information in the integrated cultural heritage network we should consider data on Imam Reza's bibliography, every artists, architects, legal bodies, kings and other persons which has a role in the object construction, destruction, reconstruction as well as ornamentation, renovation of Zarih, and books, internet sites, CD-ROMs and movies about Zarih. There would be full information on the object regardless of kinds. To have this possibility in a structured way, a program oriented to this aim should be planed.

III. CONCLUSION

In this paper we proposed an implementation example using an integration mechanism that provides unified access to collection-level information. The most important prerequisite in this effort was to model cultural heritage collections as CIDOC CRM paths which is an object- oriented semantic model aiming to solve the problems of semantic interoperability between museum data of various kinds and their relations to archive library material.(Doerr 2000)

As a finding of the Zarih project we could approve Le Boeuf's conclusion that since CIDOC CRM is a rich ontology with general semantics related with cultural objects and covers all the facets of the life of a physical object and core ontologies provide rich semantics,

therefore it should be preferred as mediating schemas.(Le Boeuf 2006)

In order to enrich the potential for information integration on Zarih, as Le Boeuf also mentioned, we still have to map thesauri, classification schemes and subject authority files to CIDOC CRM. (Le Boeuf 2006)

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