

Section 7: Resource Discovery#

7.2 Metadata and virtual reality projects

7.2.1 Introduction to metadata

Metadata is often described as data about data. It is information that helps a user or system to organise, access and use a resource. Metadata may serve various roles including: cataloguing and archiving, preservation, resource discovery and content description. These roles are often combined. For example, a library catalogue contains information that helps librarians to manage their collections (such as accession dates and the identity of the donor) as well as information (such as author names, titles, subject classification and shelf location) that supports resource discovery for library users.

Metadata has long been used in computer-based information systems. It provides information from the data dictionaries and 'system catalogues' in database management systems necessary for systems to locate individual items. Such metadata also provides structural information to aid users in understanding the contents of the database.

To be useful in resource discovery on the Internet, metadata must comply with a standard that provides a common descriptive format for diverse resources. The Dublin Core is an example of a simple metadata framework for the outline description of a wide range of resource types. It comprises fifteen basic elements: title, creator, subject, description, publisher, contributor, date, type, format, identifier, source, language, relation, coverage (spatial and temporal) and rights (see [Miller and Greenstein 1997](#); [Wise and Miller 1997](#)). These elements are sufficient for simple resource discovery tasks, but they are not intended for detailed descriptions of complex resources. There are, however, many specialised metadata schemes for describing more complex resources. For example, the various MPEG standards address both technical specifications and content description.

Dublin Core descriptions are sufficient to determine that a resource deserves closer inspection, just as the author, title and abstract may suggest that a paper or book is worth reading. However, just as we read the arguments presented in a written work and follow up its references, we also need ways of examining the structure, content, sources and methods behind a virtual reality presentation. For virtual reality archives both basic descriptive (Dublin Core) metadata and more detailed descriptive metadata may be required.

7.2.2 Core metadata

The Arts and Humanities Data Service has been instrumental in promoting and exploiting the use of Dublin Core metadata to describe and enable access to digital resources. For example, the ADS catalogue currently contains about 400,000 metadata records describing resources that are either archived by the ADS or held by other institutions. A web-interface, ArchSearch, provides ways for users to search this metadata.

The following is an example of a metadata record based on a virtual reality project for [Canterbury Museum](#).

Table 3: AHDS Core metadata for virtual reality models

Information type	Scope note
Title	Quest for Canterbury's lost Roman temple
Creator	Nick Ryan, University of Kent http://www.cs.ukc.ac.uk/people/staff/nsr/index.html
Subject.discipline	Archaeology
Subject.type	Temple
Subject.period	Roman
Subject.type	Excavation

Subject.type	Reconstruction
Description	A multimedia presentation for Canterbury Museums
Publisher	Canterbury Museums http://www.cs.ukc.ac.uk
Depositor	Nick Ryan, University of Kent
Date	20 October 1998 - 21 February 2001
Type	Interactive resource
Format	application/vnd.ms-powerpoint
Identifier	Not given
Source	Plans and excavation data
Language	English
Relation.archive	Plans and excavation data, Canterbury Museums 1980-2001
Coverage	Canterbury
Coverage. administrative area	Kent
Coverage.country	England
Rights.copyright	Museum display: Canterbury Museums 2001
Rights.copyright	Plans and excavation data: Canterbury Museums 1980-2001
Rights.copyright	Computer model: Nick Ryan 1998-2001

Relationship to the resource components

Virtual reality worlds are multimedia resources that comprise a number of component elements (program files, sound clips, images and so on). For such resources, the relation element of the Dublin Core metadata set may be used to record the component elements as follows:

Table 4: Metadata describing the resource components

Information type	Scope note
Relation.Has part	Video clip - Aerial fly in
Relation.referenced by	http://www.cs.ukc.ac.uk/people/staff/nsr/va/des/fly_in.html

These fields can be repeated to identify all of the elements in a virtual reality application. However, it may be necessary to provide a core metadata record for each component resource and then gather them together in a collection level metadata record. In some cases the component elements may be maintained by different individuals or organisations. In such cases, the owner of each component would be responsible for maintaining its metadata. The project manager would be responsible for maintaining collection level metadata.

7.2.3 Educational metadata

Many virtual reality resources are developed for an educational audience. The Dublin Core education working group has proposed that the following additional metadata elements may be recorded for such resources:

Table 5: Dublin core educational metadata elements

Information type	Scope note
Audience	Museum visitors
Mediator	Canterbury Museums
Education standard	This resource does not conform to an established education or training standard
Interactivity type	Point and click presentation
Interactivity level	Low

Typical learning time

30 minutes