

# **Intelligent preservation of media art works in museums: the importance of metadata**

©2006 by Tommy Lavallée, Research Assistant, Cataloguing Structure Committee. This paper was prepared within the framework of the DOCAM project – Document and Conservation of Media Arts Heritage.

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## **Table of Contents**

Introduction .....	2
Introduction to Potential Sources of Metadata .....	3
Functions of Metadata in Museums .....	4
Descriptive Metadata .....	5
Levels of description of media art .....	5
Cataloguing Structures .....	6
Appendices .....	9
Bibliography .....	11

## Introduction

In the autumn of 2006, I had the opportunity to work as a research assistant with the Cataloguing Structure Committee of the DOCAM project “Documentation and Conservation of Media Art Heritage” at the Musée d’art contemporain de Montréal for the collections archivist, Anne-Marie Zeppetelli. We had to develop a methodology, based on case studies, for cataloguing media art that could provide the groundwork for a practical guide for the museum community. We were thus led to think about the importance for museums of documentation for the intelligent preservation of media art. This report is a reflection on the various issues that emerged from this work.

Documentation (interviews with artists, analytical texts about works, lists of elements of works, technical dossiers, specifications, etc.) serves to bring together informational details about works – these are metadata. We will thus try to examine metadata in greater depth by analyzing the various elements that must be taken into account in order to manage them well.

The sources and function of metadata will be identified through raising issues and providing examples to illustrate the role of metadata. In addition, a section of the paper will deal more specifically with the question of descriptive metadata by outlining levels of description of media art. The report concludes with an overview of cataloguing structures currently used in some museums and the fields that we feel should be further developed. Lastly, some standards will be defined in order to present new approaches to consider.

### *Metadata: a definition*

We begin by describing what we mean by the term “metadata”. Generally speaking, the term is used to describe a structured set of information that describes a resource. In the context of this paper, we will consider details about the physical objects in museum collections (like the information gathered together in a collections management file) such as metadata. Our approach will thus be more comprehensive than that of the Canadian Heritage Information Network according to which metadata can be of three kinds (CHIN, 2006):

1. Descriptive metadata (about the content) that serve to locate and identify a work. They provide information on resources including the name of the author (creator), title, materials, date of creation, etc.
2. Administrative metadata that contain legal or storage information.
3. Technical metadata with details about materials and the structure of a work.

## Introduction to Potential Sources of Metadata

Works themselves are probably the best sources of information, or at least the most reliable ones, for technical details such as physical dimensions, the duration of audio or visual elements, and many others. We should ask, however, whether it is really necessary to document everything. Is it, for example, relevant to photograph every element of a work, even those components not integral to it but only there for functionality? Our answer is that ideally we should really document everything. Indeed, contextual elements become metadata, information that tells us about the structure of data, their relationships and their content.

We thus need to know about and to document the state of a work of art at the moment of its creation on conceptual as well as technical levels. For example, we could note which technologies were used to create a work and to update it later if that were relevant. We could document the various components of a work by describing their features (degree of variability, visibility of equipment, whether hand-made or of commercial manufacture, etc.) and how they work (interactive, transformational, action, movement, etc.).<sup>1</sup> In fact, each version should be documented when a work varies from one exhibition to another or when each expression of the work is different from a preceding one. Each change must thus be dated and described in detail (authority, type of change, reason, impact).

In the case of works that are constantly moving, it becomes even more difficult to preserve its authenticity or to determine at which point different versions, mutations or transformations should be captured. For example, an interactive work that changes in reaction to visitors does not have an ideal and authentic static form. As Duranti notes (2004, 2):

To generate preservable works in such systems, we need to ascertain a) how user input affects the creation and form of electronic materials, and b) if and when the interactive system and its inherent functionality need to be preserved for those works to remain meaningful and authentic.

This would not allow us later to recreate a copy of the work but rather to create an environment (behaviour and features) faithful to the one in which the work was originally experienced. This information will thus enable us to preserve a work's performance intentionality.

In this, artists and their assistants are important sources of information. Artists are best placed to tell us about the artistic intention of a work, the way it was constituted, its various components, details about an exhibition as well as the impressions they want to leave with spectators. There are several possible forms of dialogue between museums and artists.

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<sup>1</sup> This information has been adapted from the typological grid produced by the DOCAM Conservation Committee.

In its way, the *Variable Media* questionnaire is intended to be a structure for the collection of information on media art. It is comprised of “a matrix of preferences translated into fluid digital format that creators and those who preserve works of art will be able to freely share” (Depocas, Ippolito and Jones 2003, 52). The ultimate objective of the questionnaire is to integrate this information in a multi-institutional database that will allow institutions that bring together a collection to share or to compare data beyond genres and works (Depocas, Ippolito and Jones 2003, 47-48).

Even though a few institutions may have set up structures for formatted dialogue like the questionnaire that is usually filled in at the time a work is acquired, we should not ignore the many more informal exchanges that often take place during the life of a work. E-mail, fax and other forms of rapid communication should be preserved in the same way as official documents because they often contain information on problems encountered and solutions agreed to. We believe that relevant information should be extracted and formatted in order to integrate it into museum collection management files to better reflect reality.

Furthermore, documents about the installation and maintenance of a work, for example a technical file, are also essential sources of information. Thus designs, diagrams, illustrations and other visual documents about a work should be digitized, identified (authority, date, description), and integrated into the database. The aim here is to centralize information to make timely retrieval easier.

Specialized literature is also a potential source of metadata. Exhibition catalogues, scholarly art journals, criticism, reports of exhibitions and other review articles often contain descriptions of a work by specialists in the field. Moreover, they can sometimes reveal impressions of a work and thus reflect the experience of spectators, providing iconographic and iconological analyses of a work.

## **Functions of Metadata in Museums**

The functions of metadata presented here are not only limited to the distinctive features of media art. As CHIN has indicated (CHIN 2006), metadata can serve to manage collections (whether they are available for loan, conservation treatment, etc.), to describe or identify objects for security purposes or research in databases (metadata on the creator or the title of a work, the physical description of an object, etc.) and to document the use of an object by the museum (metadata on exhibitions in which the object has been shown, etc.).

There is thus no doubt about the usefulness of metadata about works of art. Metadata help to produce catalogues of works in a collection. Moreover, if information is detailed enough about each work and integrated in a collections management system, it thus becomes possible to search for works within a collection using a variety of points of entry. In this way, a museum could index all works with a particular specific element. For example, if we learn that slide projectors are no longer being manufactured, a curator

could identify the number of works affected by this situation and decide on the best solution to the problem and quickly calculate related costs.

Metadata also play a role in the restoration and reinstallation of a work. Proper documentation of works ensures their longevity as long as information is complete and up-to-date. In this respect, technical dossiers play a key role. Moreover, the disappearance or loss of documentation as a result of mismanagement of a work may mean that it would be impossible to recreate it as Duranti notes (2004, 3):

Inadequate record management practices have already precipitated the disappearance of many records pertaining to art that depended upon now obsolete software and hardware for their continued existence, including interactive musical materials, art works situated in virtual environments, and other performance works whose essential parameters were insufficiently documented to allow for their recreation.

Thus the action of documenting a work is closely related to any media art conservation strategy. Moreover, besides helping to maintain, reinstall, restore and even recreate a work, comprehensive documentation also serves as evidence of a work when it is no longer functional. As Alain Depocas notes (2001), “given the huge volatility of many new media and digital art projects, this documentation may often be the only remaining trace of the work.”

## **Descriptive Metadata**

### *Levels of description of media art*

Having attempted to show how important it is to collect information on the context of the creation and presentation as well as of the elements of works of media art, we will now tackle why it is important not to overlook their content.

Media art, although made up of disparate elements like CRT displays, multiple cables, electronic circuits and other elements not normally associated with so-called traditional art, may still be indexed by content and thus by subject.

That said, an analysis by subject presents a real difficulty since a work of art may have a number of different meanings. The artist Erwin Panofsky groups these meanings in three categories: pre-iconographic, iconographic and iconological.

The pre-iconographic level, often described as *ofness* (Turner 1998, 13), corresponds to the description of objects or the action represented in the work. This first level answers the question: What is the work? The next, the iconographic level *aboutness*, concerns the interpretation of objects or the actions represented in a work. At this level, one needs to know about social conventions in order to determine the meaning of what is represented in relation to what the work is about. These first two levels correspond, according to Turner (1998, 13), “to the ideas of denotation (first level) and connotation (second level) used in semiology.” Lastly, the third level of analysis by subject, the iconological level,

helps to distinguish among the many meanings that a work may have that are created more or less consciously. For this level of analysis, it is necessary to have recourse to art specialists (art historians, connoisseurs, scholars, etc.) that possess the required knowledge to extract these subtle elements of meaning that are often open to interpretation.

## Cataloguing Structures

It goes without saying that data on works of art should be formalized. Each museum needs to develop a policy defining the standards according to which information will be structured. This notion must also be applied to cataloguing data that, as Jean Gagnon notes (1999, 5), “are still too often not very precise or even appropriate for works with electronic and digital elements.”

As has been previously noted, there are currently no good practical cataloguing guides that take account of the special nature of media art even though such works have been included in museum collections in Canada since the 1960s.

The Société des musées québécois makes available in hardcopy or online a documentation guide from the Info-Muse Network called *Documenting Your Collections*.

Originally published in 1992 [it...] has been updated regularly. The publication has become a priority reference tool for the majority of Quebec stakeholders interested in collection documentation. The guide suggests a documentation system adapted to different types of collections and allows a selection of information and provides precise rules about the way information is organized and recorded.

Although it is updated frequently, the guide still does not have cataloguing fields that are tailored to media art in particular (see Appendix 1). We will thus consider the various features presented by Richard Rinehart in his article “A System of Formal Notation for Scoring Works of Digital and Variable Media Art” to define an ideal documentation model for media art:

- It is appropriate for the content and the aims it is serving.
- It reflects the nature of media art.
- It must be able to describe the work not only as an object but also as an event or an activity that could include human or automated action.
- It must not only contain information on the location and the type of files or objects but also their behaviour, interaction, possible choices, contingencies, existing variables.
- Without necessarily describing the artistic process, there must be at least a means to understand the work as a set of intentions expressed by parameters and manifested either as a product or an event.
- It should present various levels of intervention and choice within the work.

- The document that results from these recommendations should allow the work to be recreated or re-performed (major difference with the classical model of cataloguing or management of metadata).
- This “system of formal notation” as Rinehart calls it should be able to describe all kinds of art whether digital, physical or a combination of both.
- The different structures and substructures (components of components) should also be clearly presented.
- The model notation should be compatible with other description standards used by cultural institutions so that media art managed using this model is not marginalized and can coexist within various systems.
- Standardization should not change the flexibility that responds to institutional needs in terms of descriptive practice.
- Language must be integrated at two levels: the first, corresponding to natural language for ease of comprehension and a second, artificial, encoded language that allows for the computerization of data.

A number of initiatives are already under way to include these features in documentation systems specifically designed for media art. In their own way, projects like “Preservation and Archival of Newmedia and Interactive Collections (PANIC)” developed by researchers at the University of Queensland in Australia, “Capturing Unstable Media Conceptual Model (CMCM)” developed by the V2\_ organization in the Netherlands or the “Media Art Notation System”, a conceptual model developed by the *Archiving the Avant-Garde* project all include the features of the ideal model as presented by Rinehart. However, they have developed these systems according to the respective interests of the projects rather than for general agreement by the variety of museums that own works of media art. Indeed, attention is focused more specifically on digitized art than on media art in general. These models have been based on the possibilities provided by Web semantics, on XML language and on certain already existing standards developed to respond to the needs of organizations for metadata with respect to audio, visual or multimedia resources.

For the time being, since documentation models designed specifically for media art have not yet been introduced or are not relevant, museums that own media art have, in the best cases, adapted their cataloguing structure to integrate these works in their collections.

In November 2006, the results of a survey carried out by the members of the DOCAM Cataloguing Structure Committee, a research group in the documentation and conservation of media art heritage, were released. The survey, covering documentation methods, more particularly interviews of artists, acquisition contracts and cataloguing forms, was sent to a number of museums around the world to gain an overview of existing practices with respect to the documentation of media art. It is regrettable, however, that a number of major players in media art conservation were not represented. For example, the Tate Modern in London, the Museum of Modern Art in New York (MoMA), and the San Francisco Museum of Modern Art (SFMOMA) were not targeted by this survey. In contrast, their *Media Matters* consortium project to be found on the

Tate Modern Web site provides an interesting perspective on their thinking and working methods in relation to the preservation of media art.

For most of the respondents, media art was considered to be work requiring a different treatment from the rest of a collection. Nonetheless, institutions most often felt that they could not change their cataloguing method. In reality, media art only represented a fraction of their collections and respondents were unable to access the resources needed to introduce systems specifically designed for media art. As a result, museums must work with the tools they already have and maximize the possibilities that their own collection management systems afford, usually fairly flexible databases.

The Musée d'art contemporain de Montréal is an example that highlights this museum practice related to media art. The museum decided that while it would retain the collection management system it used for all works, a greater level of detail should be developed to systematically include specific information on the elements of a work. For example, it would be possible to integrate programming language, types of software, sound compression systems, video, etc. for works with computerized components. Although this approach was implemented some time ago, only a few works have been documented in this way.

It is worth pointing out that it is difficult to change documentation work habits in a field that must often deal with very tight exhibition deadlines and increasingly constrained budgets. It is essential, however, to encourage this practice and thus to promote the importance of good documentation.

Data are important for the effective preservation of this type of work. Nonetheless, we are aware that, given the continuous growth in media art, this kind of exhaustive documentation is a huge undertaking that some may find overly tedious. Even if the importance of this kind of documentation as suggested in the paper requires resources and may involve additional costs, we maintain that in the long term such documentation could provide a more accurate presentation of works, promote better preservation or even ensure their future.



## Appendix 1

*Documenting Your Collections:*  
**Info-Muse Documentation Guide**  
Version 1.0, November 21, 2005

### Field Index – Fine Arts/Decorative Arts

#### **Identification**

- Accession Number
- Previous Number
- Discipline
- Object Category
- Object Sub-category
- Object Name
- Object Type
- Alternate Object Name
- Quantity
- Component Part Names
- Number of Components
- Additional Associations
- Military Unit
- Artist/Maker
- Artist/Maker Other Names
- Other Artist/Maker
- Other Artist/Maker Role
- Title
- Title Variation
- Manufacturer
- Manufacturer Country
- Manufacturer Province
- Manufacturer City
- Begin Date
- End Date
- Period
- Events, places, people

#### **Dimensions**

- Unit Linear
- Height
- Width
- Length
- Depth
- Thickness
- Outside Diameter
- Image Height

- Image Width
- Frame/Pedestal Height Outside
- Frame/Pedestal Width Outside
- Frame/Pedestal Depth Outside
- Frame/Pedestal Diameter Outside
- Unit Weight
- Weight
- Dimension/Weight Remarks

### **Physical Description**

- Material
- Medium
- Support
- Technique
- Signature
- Inscription
- Subject/Image
- Current Condition
- Current Condition Date
- Current Condition Remarks
- Description
- Narrative

### **Storage Location**

- Permanent Location Site (1 to 6)
- Permanent Location Date

### **Origin**

- Originating Continent
- Originating Country
- Originating Province
- Originating City
- School/Style
- Religion
- Culture

### **Source**

- Acquisition Mode
- Accession Date
- Source
- Source Credit

### **Cataloguing**

- Cataloguer
- Catalogue Date
- Cataloguer Remarks

## Bibliography

Baca, Murtha. 2002. *Introduction to art image access: issues, tools, standards, strategies*. Los Angeles: Getty Research Institute.

Depocas, Alain. 2001. *Digital Preservation: Recording the Recoding. The Documentary Strategy*.  
<[http://www.aec.at/festival2001/texte/depocas\\_e.html](http://www.aec.at/festival2001/texte/depocas_e.html)>  
(consulted November 22, 2006)

Depocas, Alain, Jon Ippolito and Caitlin Jones (Directed by). 2003. *L'approche des médias variables : la permanence par le changement*.  
<[http://variablemedia.net/f/preserving/html/var\\_pub\\_index.html](http://variablemedia.net/f/preserving/html/var_pub_index.html)>  
(consulted November 22, 2006)

Duranti, Luciana. 2004. "Preserving Authentic Electronic Art Over The Long-Term" in *AIC Annual Meeting 2004*. Portland, Oregon.  
<<http://aic.stanford.edu/sg/emg/library/pdf/duranti/Duranti-EMG2004.pdf>>  
(consulted November 22, 2006)

Eamon, Christopher et al. *Media Matters: Collaborating Towards the Care of Time-Based Media Works of Art*.  
<<http://www.tate.org.uk/research/tateresearch/majorprojects/mediamatters/>>  
(consulted December 5, 2006)

Fondation Daniel Langlois. *Documentation and Conservation of Media Arts Heritage (DOCAM)*.  
<<http://www.docam.ca>>  
(consulted December 1, 2006)

Gagnon, Jean. 1999. *De la vidéo aux oeuvres virtuelles : quelques entourloupettes*.  
<[www.unites.uqam.ca/Rencontres/montreal/pdf/jgagnon.pdf](http://www.unites.uqam.ca/Rencontres/montreal/pdf/jgagnon.pdf)>  
(consulted December 1, 2006)

Hunter, Jane and Tinni Choudury. 2003. *Preservation of New Media Artwork*.  
<[http://metadata.net/panic/Presentation/pres\\_meta.pdf](http://metadata.net/panic/Presentation/pres_meta.pdf)>  
(consulted December 5, 2006)

International Network for the Conservation of Contemporary Art (INCCA).  
<<http://www.incca.org/>>  
(consulted December 5, 2006)

Manovich, Lev. *Metadata, Mon Amour*.  
<<http://www.manovich.net/>>  
(consulted December 5, 2006)

Metadata Encoding and Transmission Standards (METS).

<<http://www.loc.gov/standards/mets/>>

(consulted December 5, 2006)

Preserving Access to Digital Information (PADI). *Variable media art*.

<<http://www.nla.gov.au/padi/topics/132.html>>

(consulted December 5, 2006)

Canadian Heritage Information Network (CHIN). *Metadata Standards for Museum Cataloguing*.

<[http://www.chin.gc.ca/English/Standards/metadata\\_documentation.html](http://www.chin.gc.ca/English/Standards/metadata_documentation.html)>

(consulted December 5, 2006)

Rhizome. 2006. *Forum*.

<<http://rhizome.org/thread.rhiz?thread=21206&page=1#41392>>

(consulted December 2, 2006)

Rinehart, Richard. *A System of Formal Notation for Scoring Works of Digital and Variable Media Art*.

<[http://www.bampfa.berkeley.edu/about\\_bampfa/formalnotation.pdf](http://www.bampfa.berkeley.edu/about_bampfa/formalnotation.pdf)>

(consulted November 25, 2006)

Rinehart, Richard. *Appendices to A System of Formal Notation for Scoring Works of Digital and Variable Media Art*.

<[http://www.bampfa.berkeley.edu/about\\_bampfa/formalnotation\\_apndx.pdf](http://www.bampfa.berkeley.edu/about_bampfa/formalnotation_apndx.pdf)>

(consulted November 25, 2006)

Rinehart, Richard. *Preserving the Rhizome ArtBase*.

<<http://rhizome.org/artbase/report.htm>>

(consulted November 22, 2006)

Rothenberg, Jeff. 2000. *Long-Term Preservation of Digital Information: Challenges and Possible Technical Solutions*.

<[http://www.kb.nl/coop/nedlib/workshop/rothenberg\\_kb.pdf](http://www.kb.nl/coop/nedlib/workshop/rothenberg_kb.pdf)>

(consulted November 15, 2006)

Société des musées québécois. *Documenting Your Collections: Info-Muse Documentation Guide*.

<<http://www.smq.qc.ca/publicsspec/guidesel/doccoll/en/index.htm>>

(consulted December 5, 2006)

Turner, James. 1998. *Images en mouvement : Stockage – Repérage – Indexation*.

Sainte-Foy: Presses de l'Université du Québec.

(consulted December 5, 2006)

University of California et al. *Archiving the Avant Garde: Preserving Digital and Variable Media Art.*

<[http://www.bampfa.berkeley.edu/ciao/avant\\_garde.html](http://www.bampfa.berkeley.edu/ciao/avant_garde.html)>

(consulted December 5, 2006)

V2\_. *Capturing Unstable Media.*

<<http://capturing.projects.v2.nl/>>

(consulted December 3, 2006)

V2\_. 2004. *Capturing Unstable Media: Deliverable 1.2 – Documentation and Capturing Methods for Unstable Media Arts.*

<[http://archive.v2.nl/v2\\_archive/projects/capturing/1\\_2\\_capturing.pdf](http://archive.v2.nl/v2_archive/projects/capturing/1_2_capturing.pdf)>

(consulted December 5, 2006)

Wikimedia Foundation. Wikipedia Free-Content Encyclopaedia.

<<http://fr.wikipedia.org/wiki/Accueil>>

(consulted December 5, 2006)