

An **evolphin**[®] **Software** Technology White Paper



2410 Camino Ramon #228

San Ramon, CA 94583

+1 888-386-4114

info@evolphin.com

www.evolphin.com

Metadata Primer for Digital Asset Management

Contents

What is Metadata	2
Uses of Metadata	3
Managing Metadata	3
Metadata for Jobs and Tasks	3
Types of Metadata	4
Metadata Standards	4
Metadata Formats	5
Keywords	5
Resources	6

What is Metadata

Simply put, metadata is descriptive information about files. In terms of Digital Asset Management, metadata is information that is used to describe or classify an asset.

Sample metadata for a 2D asset could include Color Mode, Color Depth, Image Width and Image Height. Not all file types will contain the same metadata. Video files would have additional metadata such as Duration, Frame Count, and Frames Per Second that are not applicable to 2D files.

Metadata is typically generated by either the software program used to produce an asset, the equipment (such as a camera or scanner) or by users adding custom metadata. Custom metadata can be added ad-hoc to individual assets or added in bulk to many assets concurrently.

Program or equipment metadata usually follows an industry standard such as IPTC, EXIF or XMP. The XMP standard is now most commonly used as it allows software programs to embed user defined metadata into the file, making that data portable with the file so that other applications can read and present it.

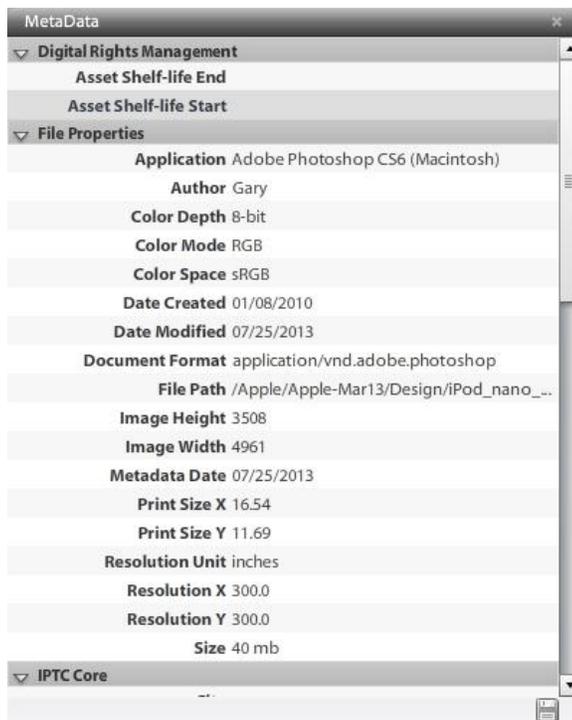


Figure 1 - Sample Metadata Panel

Uses of Metadata

Metadata can be used in a many different ways. The most common use of metadata is to enable discovery or put another way to be able to search for an asset. Metadata can also be used to assist in organizing assets, report on assets, provide location information for hardcopies, enable archiving and preservation of assets, enforce digital rights and to facilitate integration between computer programs. Once metadata is embedded into a file, it can be read by other applications that provide similar ability to read metadata. For example, metadata embedded in a print file may be viewed by commercial printers to validate color profiles, resolution, etc.

Managing Metadata

When working with metadata, organizations must plan carefully to determine the optimal approach to entering, updating and validating information. Modern Digital Asset Management software will enable the existing metadata (information created by a program or device) to be read, stored and made visible to users.

DAM software should provide:

- 1) Functionality to create new metadata ad-hoc (by users) or structurally (by administrators).
- 2) Users should be able to update individual metadata fields or add them on the fly.
- 3) Programs should provide an easy process to update several assets simultaneously that contain identical metadata information.
- 4) Mass update capabilities should allow the addition or update of large numbers of files, preferably by importing data via a spreadsheet, CSV or XML file.
- 5) Metadata should be stored against individual revisions of assets as the information will change during editing.
- 6) Administrators should be able to create custom metadata fields of any type including drop-down lists for categorizing assets.
- 7) Metadata must be exportable for validation and reporting purposes.
- 8) Any new metadata added to the DAM must be embeddable into the asset for portability.

Metadata for Jobs and Tasks

Modern Digital Asset Management software should provide integrated workflow capabilities. This enables organizations to take control of their asset product process. Jobs and tasks can be defined that control how

assets are assigned, flow through the workflow process, users notified and due dates recorded.

When defining a workflow process, jobs and tasks are given names or job/task numbers to facilitate easy consumption by users. Many times, however, additional data is required to provide further information to the participants or to facilitate reporting on the workflows.

Job information may include customer IDs, internal job tracking codes and more. Similarly task may contain information regarding task options, design specifications or accounting chargeback codes.

The added benefit of job and task metadata is that it creates a wealth of opportunities for custom reporting against workflow processes. This information is invaluable for the management and process improvement that creative organizations require.

Types of Metadata

The National Information Standards organization defines three distinct types of metadata.ⁱ These include:

1. **Descriptive Metadata** – metadata that describes a work for purposes of discovery and identification, such as creator, title and subject.
2. **Structural Metadata** – metadata that indicates how compound objects are structured, and are provided to support use of objects.
3. **Administrative Metadata** – metadata related to the use, management, and encoding processes of digital objects over a

period of time. Includes the subsets of technical metadata, right management metadata, and preservation metadata.

Metadata Standards

IPTC

The International Press Telecommunications Council (IPTC)ⁱⁱ is a consortium of news organizations that has been in existence since the 1960's. With the onset of computerization in the 1980's the IPTC developed a standard to assist in the exchange of news. The standard is known as the Information Interchange Model (IIM) and is still widely in use today by many creative programs. The IIM standard has been adopted mainly by photographers. IIM has been largely superseded by the XMP standard but almost all programs still support IPTC.

Dublin Core

The Dublin Core metadata standard was developed in 1995 by a consortium of librarians and computer professionals that set out to create a standard for classification of books. It has since been adopted globally as a standard that can apply to a wide variety of resources such as web pages, video and images. While the standard is extensible, there exist only 15 elements in the "Simple Dublin Core Metadata Set (DCMES).

The following are the core metadata elementsⁱⁱⁱ:

- 1) Title
- 2) Creator
- 3) Subject
- 4) Description
- 5) Publisher
- 6) Contributor
- 7) Date
- 8) Type
- 9) Format
- 10) Identifier

- 11) Source
- 12) Language
- 13) Relation
- 14) Coverage
- 15) Rights

XMP

Extensible Metadata Platform (XMP) is a standard that was produced by Adobe, Inc. in 2001 to coincide with the release of Adobe Photoshop 7. XMP combines XML and RDF-based formats into common standard that can be embedded in a wide variety of file formats including the most common image formats such as JPG, TIF, GIF EPS, PDF, etc. The value that XMP metadata has over other standards is its extensibility or the ability to add custom metadata elements. While originally developed as a proprietary metadata format by Adobe, it has since been adopted by the International Organization for Standardization (ISO) and is now an open standard.

EXIF

The Exchangeable Image File Format or EXIF is a standard used for storing information for image and sound files created by digital cameras. Originally developed by the Japan Electronic Industries Development Association (JEIDA) in 1998, EXIF is the standard in use for the majority of digital camera makers. Examples of EXIF data include camera information such as manufacturer and model, resolution information, compression format, shot date and time, focal length, color space and exposure time. There are, however, several drawbacks to the EXIF standard. The standard only allows TIFF or JPEG files, which means that camera manufacturers have been forced to develop proprietary data formats when using RAW image files. In addition, as digital cameras get

more sophisticated, such as the ability to capture video, the EXIF standard will not support the additional information.

Metadata Formats

Metadata fields can take on a wide variety of formats from text to numbers. There can also be multiple variations within any specific format such as dates displayed in the US standard MM/DD/YYYY or the European DD/MM/YYYY. The following is a list of general field formats:

- 1) Text – allows users to add information in any alphanumeric format.
- 2) Dropdown – allows users to select a value from a list of pre-defined categories.
- 3) Date – can include dates, dates and times in a variety of formats.
- 4) Number – requires users to use only numerals and decimal places.
- 5) Currency – can support a variety of numerals, decimal places and currency symbols.
- 6) Checkboxes and Radio Buttons – for use in true/false and multiple selection formats respectively.
- 7) URL – for saving www URL addresses.

Keywords

While keywords are information that describes a particular file, keywords should not be confused with metadata. Keywords lack the contextual information that metadata provides. This is best illustrated with an example. Imagine you were searching an asset management system for a picture of the classic Ford Mustang car. Using only keywords a search using the term Mustang could bring back a variety of search

results varying from assets related to cars, horses, WWII aircraft, or athletes representing Southern Methodist University. However, using metadata fields would have the opportunity to create a specific field that would enable a discreet search. In this example Car Type = Mustang, which would only return assets that fit that exact criteria.

Keywords can be invaluable in situations where the application of metadata fields would be too cumbersome. For example, if I have a photograph of three people, who we will call Larry, Moe and Shemp. I can easily use the keywords Larry Moe Shemp and search on any combination of those keywords to locate that photo. It would be a challenge to set up the appropriate metadata fields that can replicate the simplicity of keyword searching.

Resources

Please contact our sales team and they can arrange for our technical experts to answer any questions you may have.

ⁱ [NISO. *Understanding Metadata*](#). NISO Press. ISBN 1-880124-62-9. Retrieved 5 January 2010.

ⁱⁱ <http://www.iptc.org>

ⁱⁱⁱ <http://dublincore.org/specifications/>