

# GUIDELINES FOR HANDLING IMAGE METADATA

Version 1.0

September 2008



[www.metadataaworkinggroup.org](http://www.metadataaworkinggroup.org)

## Copyrights

© Copyright 2008 by Adobe Systems Inc., Apple Inc., Canon Inc., Microsoft Corp., Nokia Corp. and Sony Corp. All rights reserved.

## Terms and Conditions

This document is made available by Adobe Systems Inc., Apple Inc., Canon Inc., Microsoft Corp., Nokia Corp. and Sony Corp. (collectively, the “Authors”) and grants you (either an individual or an entity) and your affiliates (“Licensee”) this license. Licensee agrees that Licensee has read, understood and will comply with these terms and conditions.

### 1. Definitions

- 1.1 “*Licensed Products*” means only those specific portions of products (hardware, software or combinations thereof) that implement and are compliant with all Normative Portions of the Guidelines.
- 1.2 “*Normative Portions*” means a portion of the Guidelines that must be implemented to comply with such guidelines. If such guidelines define optional parts, Normative Portions include those portions of the optional part that must be implemented if the implementation is to comply with such optional part.
- 1.3 “*Necessary Claims*” are those claims of a patent or patent application, throughout the world, excluding design patents and design registrations, owned or controlled, or that can be sublicensed in compliance with the requirements of this Agreement, by the party or its affiliates now or at any future time and which would necessarily be infringed by implementation of the Guidelines. A claim is necessarily infringed hereunder only when it is not possible to avoid infringing it because there is no non-infringing alternative for implementing the Normative Portions of the Guidelines. Notwithstanding the foregoing, Necessary Claims shall not include any claims other than as set forth above even if contained in the same patent as Necessary Claims; or that read solely on any implementations of any portion of the Guidelines that are not required by the Normative Portions of the Guidelines, or that, if licensed, would require a payment of royalties by the licensor to unaffiliated third parties. Moreover, Necessary Claims shall not include (i) any enabling technologies that may be necessary to make or use any Licensed Product but are not themselves expressly set forth in the Guidelines (e.g., semiconductor manufacturing technology, compiler technology, object oriented technology, basic operating system technology, data and voice networking technology, and the like); or (ii) the implementation of other published standards developed elsewhere and merely referred to in the body of the Guidelines, or (iii) any Licensed Product and any combinations thereof the purpose or function of which is not required for compliance with the Guidelines. For purposes of this definition, the Guidelines shall be deemed to include only architectural and interconnection requirements essential for interoperability and shall not include any implementation examples unless such implementation examples are expressly identified as being required for compliance with the Guidelines.
- 1.4 “*Guidelines*” mean the Guidelines For Handling Image Metadata Version 1.0.

## 2. License

2.1 Copyright: Licensee must include the following on ALL copies of the Guidelines, or portions thereof, that Licensee makes:

2.1.1. A link or URL to the Guidelines at this location: <http://www.metadataworkinggroup.org>

2.1.2. The copyright notice as shown in the Guidelines.

2.2 Patent: The Authors each will grant Licensee a royalty-free license under reasonable, non-discriminatory terms and conditions to their Necessary Claims to make, have made, use, reproduce market, import, offer to sell and sell, and to otherwise distribute Licensed Products. Licensee agrees to grant Authors and their affiliates a royalty-free license under reasonable, non-discriminatory terms and conditions to its Necessary Claims to make, have made, use, reproduce market, import, offer to sell and sell, and to otherwise distribute Licensed Products. Nothing herein shall prevent the Authors from charging a reasonable royalty for such Necessary Claims to any party who is offering their Necessary Claims on royalty bearing terms.

## 3. Limitations

3.1 No Warranty: THE "GUIDELINES FOR HANDLING IMAGE METADATA VERSION 1.0" GUIDELINES IS PROVIDED "AS IS," AND THE AUTHORS MAKE NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, OR TITLE; THAT THE CONTENTS OF THE GUIDELINES ARE SUITABLE FOR ANY PURPOSE; NOR THAT THE IMPLEMENTATION OF SUCH CONTENTS WILL NOT INFRINGE ANY THIRD PARTY PATENTS, COPYRIGHTS, TRADEMARKS OR OTHER RIGHTS.

3.2 No Liability: THE AUTHORS WILL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR RELATING TO ANY USE OR DISTRIBUTION OF THE GUIDELINES.

3.3 Trademark: The name and trademarks of the Authors may NOT be used in any manner, including advertising or publicity pertaining to the Guidelines or its contents without specific, written prior permission. Title to copyright in the Guidelines will at all times remain with the Authors.

3.4 No Other Rights: No other rights are granted by implication, estoppel or otherwise.

## **Normative Sections**

This document attempts to conform to the keyword usage practices defined in RFC 2119. This RFC defines the use and strength of the capitalized terms MUST, MUST NOT, SHOULD, SHOULD NOT and MAY. All sections and appendixes, except the first chapter "Introduction", are normative, unless they are explicitly indicated to be informative.

These imperatives are used to highlight those requirements that are required to insure interoperability and drive compatibility.

## References

This document includes the following references to third party documents:

### Metadata Specifications

#### Exif 2.21/DCF 2.0

Official Exif specifications are available in paper form and can be ordered on the JEITA website.

#### IPTC-IIM 4.1

<http://www.iptc.org/std/IIM/4.1/specification/IIMV4.1.pdf>

#### IPTC Core 1.0

[http://www.iptc.org/std/Iptc4xmpCore/1.0/specification/Iptc4xmpCore\\_1.0-spec-XMPSchema\\_8.pdf](http://www.iptc.org/std/Iptc4xmpCore/1.0/specification/Iptc4xmpCore_1.0-spec-XMPSchema_8.pdf)

#### IPTC Core 1.1 & IPTC Extension 1.0

[http://www.iptc.org/std/photometadata/2008/specification/IPTC-PhotoMetadata-2008\\_1.pdf](http://www.iptc.org/std/photometadata/2008/specification/IPTC-PhotoMetadata-2008_1.pdf)

#### XMP

[http://www.adobe.com/devnet/xmp/pdfs/xmp\\_specification.pdf](http://www.adobe.com/devnet/xmp/pdfs/xmp_specification.pdf)

### File Format Specifications

#### JPEG

<http://www.jpeg.org/jpeg/index.html>

#### TIFF

<http://partners.adobe.com/public/developer/en/tiff/TIFF6.pdf>

#### PSD/PSIRs

<http://www.adobe.com/go/psir>

### Miscellaneous

#### RDF

<http://www.w3.org/TR/rdf-schema>

#### Dublin Core

<http://dublincore.org/documents/dces>

#### RFC2119

<http://www.ietf.org/rfc/rfc2119.txt>

#### Date and Time (W3C)

<http://www.w3.org/TR/NOTE-datetime>

---

# TABLE OF CONTENTS

- 1. Introduction ..... 6**
- 1.1 Introducing the Metadata Working Group ..... 9
- 1.2 Scoping the work ..... 9
- 1.3 Digital imaging metadata initiative ..... 10
- 1.4 Relationship to standards organizations ..... 10
- 1.5 Definition of terms ..... 11
- 2. Usage and Data Model ..... 12**
- 2.1 Actor definition ..... 12
  - 2.1.1 Creator ..... 12
  - 2.1.2 Changer ..... 13
  - 2.1.3 Consumer ..... 13
- 3. Metadata Management ..... 14**
- 3.1 Existing metadata standards ..... 14
- 3.2 Important metadata for the consumer ..... 16
- 3.3 Metadata formats within image files ..... 18
  - 3.3.1 Handling a single metadata format ..... 18
  - 3.3.2 Handling multiple metadata formats ..... 18
    - 3.3.2.1 Exif and IPTC-IIM in the context of XMP ..... 20
  - 3.3.3 Metadata reconciliation guidance ..... 21
    - 3.3.3.1 Handling Exif and XMP ..... 21
    - 3.3.3.2 Handling IPTC-IIM and XMP ..... 24
    - 3.3.3.3 Handling Exif/TIFF, IPTC-IIM and XMP metadata ..... 27
    - 3.3.3.4 More complex reconciliation in popular image formats ..... 28
- 3.4 Specific core vocabulary and data issues ..... 32
  - 3.4.1 Keywords ..... 32
  - 3.4.2 Description ..... 33
  - 3.4.3 Date / Time ..... 34
  - 3.4.4 Orientation ..... 35
  - 3.4.5 Rating ..... 36
  - 3.4.6 Copyright ..... 36
  - 3.4.7 Creator ..... 37
  - 3.4.8 Location (Created) ..... 38
  - 3.4.9 Location (Shown) ..... 39
- 4. Appendix ..... 41**
- 4.1 References ..... 41

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.