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**GUIDELINES FOR MACHINE-PROCESSABLE  
REPRESENTATION OF DUBLIN CORE  
APPLICATION PROFILES**

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**AGREEMENT**

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English version

## Guidelines for machine-processable representation of Dublin Core Application Profiles

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# Contents

Contents .....	2
Foreword .....	3
Introduction .....	4
1 Scope .....	5
2 Definitions and terminology .....	6
2.1 Definitions .....	6
2.2 Terminology .....	6
3 Usage scenarios .....	8
4 Choice of representation language for DCAPs .....	9
5 Good practice .....	10
5.1 Declaring property usage .....	10
5.2 Identifying terms .....	10
6 DCAP Data Model and Property Usage .....	11
6.1 Characteristics of DCAP Property Usage .....	11
6.2 Attributes of DCAP Property Usage .....	12
7 Bibliography .....	14
Appendix A. Attributes of data model entities .....	15
A.1 Dublin Core Application Profile .....	15
A.2 Agency .....	15
A.3 Schema Document .....	16
A.4 Metadata Vocabulary .....	16
A.5 Property .....	17
A.6 Class .....	17
A.7 Instance/Individual .....	18
A.8 Binding Schema .....	18
A.9 Obligation (Vocabulary) .....	19
A.10 VocabStatus (Vocabulary) .....	19
A.11 TermStatus (Vocabulary) .....	19
Appendix B. Example DCAPs expressed using RDF Schema .....	20
B.1 The RDN-DC Dublin Core Application Profile .....	20
B.2 The Renardus Dublin Core Application Profile .....	24
Appendix C. Expressing DCAPs using OWL .....	28
Appendix D. Comparison of the IEEE/LOM and DC data models .....	29
Appendix E. Geographic requirements for DCAP .....	30

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## Foreword

The production of this CEN Workshop Agreement (CWA) was formally accepted as part of the CEN/ISSS Workshop on Metadata for Multimedia Information - Dublin Core (WS/MMI-DC) in the Workshop's plenary meeting on 2004-01-18.

This CWA was agreed upon by the contributing partners in the CEN/ISSS Workshop on MMI-DC, representing a wide mix of interests, including administrations, libraries, on-line education and geographic information systems. The list of company individuals who have supported the document's contents may be obtained from the CEN/ISSS Secretariat.

The CWA was approved by the Workshop's plenary meeting on 2005-01-12.

The final text of this CWA was submitted to CEN for publication 2005-02-09.

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## Introduction

The function of a Dublin Core Application Profile (DCAP) is to specify which terms an organisation, information provider, or community uses in its metadata. A DCAP identifies the 'properties' (also known as elements and element refinements) used by an application to describe a resource. A DCAP should reference a property it uses by citing the globally unique identifier as assigned to the property by its owner. Optionally the DCAP documents how other terms (in particular encoding schemes) constrain, encode, or interpret the values of 'properties' for application-specific purposes. A DCAP should also reference these encoding schemes by citing a globally unique identifier.

The intended effect of documenting usage of properties and other terms in this manner is to support re-use of DCAPs within communities of practice, promoting interoperability within the constraints of the Dublin Core model and encouraging harmonisation of usage and convergence on "emerging semantics".

In order for DCAPs to be used effectively, it is essential that the content of the DCAP is structured in a precise and rigorous way, and that the content is based on sound modelling. In order to move forward consensus on a common data model, the CEN MMI-DC Working Group has drawn up these guidelines, which propose a detailed data model as the basis for both human readable and machine-processable DCAPs. These guidelines build on and extend the previous CEN Workshop Agreement (CWA) 14855: Dublin Core Application Profile Guidelines [CWA 14855].

CWA 14855 gives guidance for representing a DCAP as a document specifying the metadata terms used in an application. It describes a normalized documentational form for presenting usage information in a readable and well-structured manner. Such DCAPs are intended primarily for human consumption, whether "as plain text files or as Web pages, word-processing files, PowerPoint, or indeed as ink on paper". With an eye towards the potential for machine-to-machine use of DCAPs, however, CWA 14855 mandates "enough structure to ensure that DCAPs will be convertible as straightforwardly as possible into expressions that use schema languages, such as [the Resource Description Framework] RDF, for automatic processing by machines." However, it should be noted that CWA 14855 states "there can be no assumption that documentational DCAPs will be convertible into machine-understandable forms without the use of ad-hoc heuristics or manual intervention."

Building on CWA 14855, this CWA suggests a machine-processable representation of a DCAP using the conventions of the Resource Description Framework [RDF] in order to enable the DCAP to be exchanged between applications.

As a formalisation of the relationships between metadata properties, RDF lends itself to providing information about usage of properties within applications. So, for example, DCAPs expressed as RDF might be indexed in registries to provide usage information amongst a federation of data providers or even within a single organisation. Initial experiences in a research context suggests that "application profile registries" might be constructed on the basis of a distributed architecture in which content providers maintain schemas for their own metadata, and those schemas are harvested and merged into a central index for discovery and re-use by others. Such processes remain the object of ongoing experimentation and research. The deployment of such systems presupposes the existence of an underlying common data model.

Proposing such a model with regard to the expression of DCAPs is the object of this CWA. After some background discussion, this CWA outlines a DCAP data model indicating the characteristics of an Application Profile. The attributes of the various entities within the data model are listed, and some examples are given of machine-processable schemas constructed using RDF conventions. As an appendix, the guidelines address interoperability issues between DC and IEEE/LOM [IEEE/LOM], identifying areas of commonality and areas of difference. Guidance will be given as to current positions of the two communities regarding re-use of data elements. Within a further appendix, observations are given from a GIS perspective.

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