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Information and documentation —
A reference ontology for the interchange
of cultural heritage information

*Information et documentation — Une ontologie de référence pour
l'échange d'informations du patrimoine culturel*

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Foreword

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ISO 21127 was prepared by Technical Committee ISO/TC 46, *Information and documentation*, Subcommittee SC 4, *Technical interoperability*, in collaboration with the International Council of Museums Committee for Documentation (ICOM CIDOC).

Introduction

This International Standard is the culmination of more than a decade of standards development work by the International Committee for Documentation (CIDOC) of the International Council of Museums (ICOM). Work on this International Standard began in 1996 under the auspices of the ICOM-CIDOC Documentation Standards Working Group. Throughout its development, the model has been known as the "CIDOC Conceptual Reference Model" or CRM. References to the CRM can be considered throughout as synonymous with ISO 21127.

The primary purpose of this International Standard is to offer a conceptual basis for the mediation of information between cultural heritage organizations such as museums, libraries and archives. This International Standard aims to provide a common reference point against which divergent and incompatible sources of information can be compared and, ultimately, harmonized.

ISO 21127 is a domain ontology [1]) for cultural heritage information: a formal representation of the conceptual scheme, or "world view", underlying the database applications and documentation systems that are used by cultural heritage institutions. It is important to note that this International Standard aims to clarify the logic of what cultural heritage institutions do in fact document; it is not intended as a normative specification of what they *should* document. The primary role of this International Standard is to enable information exchange and integration between heterogeneous sources of cultural heritage information. It aims to provide the semantic definitions and clarifications needed to transform disparate, localized information sources into a coherent global resource, be it within an institution, an intranet or on the Internet.

The specific aims of this International Standard are to:

— Serve as a common language for domain experts and IT developers when formulating requirements.

— Serve as a formal language for the identification of common information contents in different data formats; in particular to support the implementation of automatic data transformation algorithms from local to global data structures without loss of meaning. These transformation algorithms are useful for data exchange, data migration from legacy systems, data information integration, and mediation of heterogeneous sources.

— Support associative queries against integrated resources by providing a global model of the basic classes and their associations to formulate such queries.

— Provide developers of information systems with a guide to good practice in conceptual modelling.

The CRM ontology is expressed as a series of interrelated concepts with definitions. This presentation is similar to that used for a thesaurus. However, the ontology is not intended as a terminology standard and does not set out to define the terms that are typically used as data in cultural heritage documentation. Although the presentation provided here is complete, it is an intentionally compact and concise presentation of the ontology's 80 classes and 130 unique properties. It does not attempt to articulate the inheritance of properties by subclasses throughout the class hierarchy (this would require the declaration of several thousand properties, as opposed to 130). However, this definition does contain all the information needed to infer and automatically generate a full declaration of all properties, including inherited properties.

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1) In the sense used in computer science, i.e. it describes in a formal language the relevant explicit and implicit concepts and the relationships between them [1].