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Geographic information — Profiles

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 19106 was prepared by Technical Committee ISO/TC 211, *Geographic information/Geomatics*.

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Introduction

The ISO geographic information standards define a variety of models for describing, managing, and processing of geospatial data. Some of these standards are creating elements, others are introducing structures and rules. Different user communities have different requirements for the extent they want to use or implement these elements and rules. Clearly identification and documentation of specific subsets of the ISO geographic information standards in a prescribed manner in conformance with these standards profiles are needed.

Some of the ISO geographic information standards are abstract and hence will not be implemented directly. To implement them, a specification must be created, which may consist of a choice from the options defined in one or more of the standards, or instances of the rules defined in one or more of the standards or a combination thereof. Not all of the components of the specification for an implementation of the ISO geographic information standards will be derived entirely from the ISO standards. This document focuses on the definition and creation of those components that are derived entirely from the ISO geographic information standards.

An ISO geographic information profile is a subset of one or several of the ISO geographic information standards. For example, there may be a profile from ISO 19115 developed to serve a particular application area such as cadastral mapping. The profile would consist of a choice of the metadata elements available in ISO 19115. ISO 19115 would serve as a base standard for the development of the profile. An example for a base standard only introducing a methodology is given by ISO 19110. It contains methods for creating feature and attribute definitions. A profile of ISO 19110 would not contain instances of feature definitions, since there are no instances in the base standard from which to choose. A profile of ISO 19110 would contain only a subset of the rules and methods found in that standard.

The management of specifications or components of specifications that do not meet the definition of a profile is outside the scope of this International Standard. Each national standardization body or standards-setting organization, such as DGIWG¹⁾ or IHO²⁾ can develop profiles for its own purposes. These organizations may follow this International Standard in creating such profiles, but those profiles do not become ISO geographic information profiles. If feature catalogues are considered, it is easy to see that there could be any number of catalogues developed using the ISO 19110 methodology. By applying the mechanisms of this International Standard to define a profile of ISO 19110 will guarantee that the resulting feature definitions contain the same components and are catalogued in a like manner, but it will not guarantee that the definitions of features and attributes within the catalogue are not conflicting. The catalogues will be consistent, but the definitions they contain will not. Each standards-setting organization or national body that develops a feature catalogue could define 'roads' or 'rivers' or 'administrative boundaries' differently. For this reason, specifications for implementing ISO geographic information standards, which are or contain specific instances of rules or methodologies and which are not derived entirely from the ISO geographic information standards, are treated differently from profiles. This document does not focus on those implementations that are not profiles.

Geographic information systems and software developers are expected to create implementations for specific purposes that make use of a limited set of concepts from the ISO geographic information standards. These sets of concepts will be implemented in a specific technical implementation environment, for example, one of the distributed computing platforms, such as CORBA, or the World Wide Web environment. Since the standardization of specific computing environments is outside the scope of ISO/TC 211, specifications that address the implementation of ISO geographic standards in those environments will not be considered as ISO geographic information profiles of ISO/TC 211, but as independent specifications.

1) DGIWG - Digital Geographic Information Working Group - Category A liaison organization to ISO/TC 211.

2) IHO - International Hydrographic Organization - Category A liaison organization to ISO/TC 211.

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This International Standard does not address the creation of specifications for implementing ISO geographic standards in specific technical implementation environments.

ISO 19109 defines the rules for the development of an application schema, including how the elements of conceptual schemas defined in other ISO geographic information standards are combined in an application schema. ISO 19109 guides the creation of application schemas, which is outside the scope of ISO 19106. An application schema by definition is not a profile but may integrate subsets of standardized schemas that are profiles.

Two classes of conformance are defined in this International Standard (see Clause 2).