

## DATA DICTIONARIES ISO TC211 STANDARD

At the mini Program / Project Coordinators meeting in Canberra, on 9 February 1999 I was asked to investigate whether ISO had a standard for Data Dictionaries. After examining the ISO TC211 web pages I can confirm that it does.

In ISO-speak it is referred to as "International Standard ISO 15046-10, Geographic information – Part 10: Feature cataloguing methodology.

In November 1998 work on the standard reached its second Committee Draft (CD).

The next steps after CD are:

- Draft International Standard – DIS, then
- Final Draft International Standard – FDIS, lastly it becomes an
- International Standard – IS.

Expected dates for the standard to reach these milestones above are: DIS: May 1999, FDIS: November 1999 and IS: April 2000.

The current Committee Draft (CD) 2 can be found at the TC211 home page <<http://www.statkart.no/isotc211/welcome.html>> and is referred to as document number N604. There is restricted access to the documents and a username and password is required to view and download any files.

In terms of the contents of the CD2 there are 7 main **entities** that are either mandatory, conditional or optional and 38 different **elements** that are again mandatory, conditional or optional.

Of the total of 45 elements / entities:

- 17 are mandatory;
- 11 are conditional; and
- 17 are optional

M – the entity or element is mandatory: it shall be included in the feature catalogue.

C – the entity or element is conditional: the condition is stated as a question in Table A1. If the answer to the question is yes, the entity or element shall be included in the feature catalogue.

O – the entity or element is optional: a feature catalogue element may be included if and only if the feature catalogue entity of which it is a part is included in the feature catalogue; an optional feature catalogue entity may or may not be included in the feature catalogue

Table A1 outlines the elements and entities that the standard requires. Any GIS dataset should use this if it is to be considered ISO TC211 compliant.

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Table A.1 - Feature Catalogue Contents

	Feature Catalogue Element or Entity	Definition	Obligation/Condition	Maximum occurrence	Data type	Domain
<b>1</b>	<b>Feature Catalogue Identification</b>	<b>Identification and contact information for feature catalogue</b>	<b>M</b>	<b>1</b>	<b>Feature Catalogue Entity</b>	<b>Elements 2-11</b>
2	Feature Catalogue Name	Name for feature catalogue	M	1	Text	free text
3	Feature Catalogue Scope	Subject domain(s) of feature types defined in feature catalogue	M	1	Text	Free text
4	Feature Catalogue Field of Application	Description of kind(s) of use to which the feature catalogue may be put	O	1	Text	Free text
5	Feature Catalogue Version	Version number and effective date of	M	1	Text	Free text
6	Definition Source	Bibliographic reference, including author, title, edition, publisher, place of publication, and date of publication, to a published source of definitions for feature type names, feature function names, feature attribute names, and feature relationship names included in feature catalogue				
<b>7</b>	<b>Feature Catalogue Producer</b>	<b>Name and address of producer of feature catalogue</b>	<b>M</b>	<b>1</b>	<b>Feature Catalogue Entity</b>	<b>Elements 8-11</b>
8	Producer Name	Name of person or Organisation having primary responsibility for the intellectual content of the feature catalogue	M	1	Text	Free text
9	Producer Postal Address	Address including street number, street name, district, city, state, province county, and (or) postal code of responsible party	O	1	Text	Free text
10	Producer Country	Country of responsible party	M	1	Text	(See ISO 3166-1)
11	Producer Telecom - communications address	Electronic contact information such as Uniform Resource Locator (URL), electronic mail address, and (or) telephone number of responsible party	O	1	Text	Free text
<b>12</b>	<b>Feature Type</b>	<b>Class of real world phenomena with common properties</b>	<b>M</b>	<b>N</b>	<b>Feature Catalogue Entity</b>	<b>Elements 13-25</b>
13	Feature Type Name	Text string that uniquely identifies the feature type within the dataset	M	1	Text	Free text
14	Feature Type Definition	Definition of the feature type in a natural language	C/ Definition not provided by definition source?	1	Text	Free text
15	Feature Type Code	Code that uniquely identifies the feature type within a dataset	O	1	Text	Free text
16	Feature Type Aliases	Name(s) of equivalent feature term(s)	O	1	List	Free text
17	Feature Function Names	Function(s) that may be performed on or by the feature type	C/ feature function occurs in feature catalogue?	1	List	Free text

18	Feature Attribute Names	Characteristic(s) of the feature type	C/ feature attribute occurs in feature catalogue?	1	List	Free text
19	Feature Relationship Names	Relationship(s) between instances of this feature type and instances of the same or a different feature type	C/ feature relationship occurs in feature catalogue?	1	List	Free text
<b>20</b>	<b>Feature functions</b>	<b>Operation that may be performed upon or by all instances of a feature type</b>	<b>O</b>	<b>1</b>	<b>Feature catalogue entity</b>	<b>Elements 21-25</b>
21	Feature Function Attribute Names	Name(s) of the feature attribute(s) participating in the feature functions	M	1	List	Free text
22	Object Feature Type Names	Name(s) of other feature type(s) affected by the functions	C/ feature functions affect a different feature type?	1	List	Free text
23	Feature Function Textual Description	Describes how the subject and object feature types and attributes are used or affected by the functions	M	1	Text	Free text
24	Functional Language	Notation system used for formal definition	C/ Feature function formal definition occurs in feature catalogue?	1	Text	Free text
25	Feature Function Formal Definition	Signatures and equations for each feature type, in scientific notation	O	1	Symbols	Symbols
<b>26</b>	<b>Feature Attribute</b>	<b>Characteristic of the feature type</b>	<b>O</b>	<b>N</b>	<b>Feature Catalogue Entity</b>	<b>Elements 27-37</b>
27	Feature Attribute Name	Text string uniquely identifying feature attribute	M	1	Text	Free text
28	Feature Attribute Definition	Definition of the feature attribute in a natural language	C/ Definition not provided by definition source?	1	Text	Free text
29	Feature Attribute Code	Code that uniquely identifies the feature attribute within the dataset	O	1	Text	Free text
30	Feature Attribute Value Data Type	Data type of attribute value	M	1	Text	IDL basic data types
31	Feature Attribute Value Measurement Unit	Measurement unit for attribute value	O	1	Text	Free text
32	Feature Attribute Value Domain Type	Indicates whether or not domain for feature attribute values is enumerated (if omitted, domain is not specified)	O	1	Integer	0 = 'not enumerated' 1 = 'enumerated'

33	Feature Attribute Value Domain	Permissible values of feature attribute	C/ Feature attribute value domain type = 0 (not enumerated)	1	Text	Free text
34	<b>Feature Attribute Value</b>	<b>Value for the enumerated feature attribute value domain</b>	<b>C/ Feature attribute value domain type =1 (enumerated)</b>	<b>N</b>	<b>Feature Catalogue Entity</b>	<b>Elements 35-37</b>
35	Feature Attribute Value Label	Descriptive label for attribute value	M	1	Text	Free text
36	Feature Attribute Value Code	Code that uniquely identifies one attribute value of this feature attribute	O	1	Integer	Integer
37	Feature Attribute Value Definition	Definition of the attribute value in a natural language	O	1	Text	Free text
38	<b>Feature Relationship</b>	<b>Relationship that links instances of the feature type with other instances of the same or a different feature type</b>	<b>O</b>	<b>N</b>	<b>Feature Catalogue Entity</b>	<b>Elements 39-45</b>
39	Feature Relationship Name	Text string uniquely identifying feature relationship	M	1	Text	Free text
40	Feature Relationship Definition	Definition of the Feature Relationship in a natural language	C/ Definition provided by definition source?	1	Text	Free text
41	Feature Relationship Code	Code that uniquely identifies the feature relationship within the dataset	O	1	Text	Free text
42	Feature Types Included	Names of feature types participating in the relationship	M	1	List	Free text
43	Feature Relationship Order Indicator	Indicates whether the ordering of feature types is significant in the relationship	M	1	Integer	0 ="not ordered" 1 ="ordered"
44	Affected Feature Attributes	Names of feature attributes affected by the relationship	C/ Feature attribute is affected?	1	List	Free text
45	Feature Relationship Constraints	Constraints on the feature relationship	O	1	List	Free text