

OGC CDB Version 1.2 Release Notes

Table of Contents

1. References	5
2. Terms and definitions	6
2.1. administrative change	6
2.2. critical Change	6
2.3. substantive change	6
2.4. Abbreviated terms	6
3. Change Log	7
3.1. KEY	7
3.2. Change Table	7
4. Description of Critical Changes	9
4.1. <short name for the change>	9
5. Description of Substantive Changes	10
5.1. CR 573: CDB Primary Alternate Terrain Elevation problems	10
5.2. CR 617: How to discover the file format used to encode a dataset in a CDB Data Store	11
6. Future Work	12
Annex A: Revision History	13

Open Geospatial Consortium

Submission Date:

Approval Date:

Publication Date: <yyyy-mm-dd>

External identifier of this OGC® document: <http://www.opengis.net/doc/IS/CDB-notes/1.2>

Internal reference number of this OGC® document: 20-006

Version: 1.2

Category: OGC® Release Notes

Editor: Carl Reed, PhD

OGC CDB Version 1.2 Release Notes

Copyright notice

Copyright © 2020 Open Geospatial Consortium

To obtain additional rights of use, visit <http://www.opengeospatial.org/legal/>

Warning

This document is not an OGC Standard. This document is distributed for review and comment. This document is subject to change without notice and may not be referred to as an OGC Standard.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Document type: OGC® Release notes

Document subtype:

Document stage: Approved

Document language: English

License Agreement

Permission is hereby granted by the Open Geospatial Consortium, ("Licensor"), free of charge and subject to the terms set forth below, to any person obtaining a copy of this Intellectual Property and any associated documentation, to deal in the Intellectual Property without restriction (except as set forth below), including without limitation the rights to implement, use, copy, modify, merge, publish, distribute, and/or sublicense copies of the Intellectual Property, and to permit persons to whom the Intellectual Property is furnished to do so, provided that all copyright notices on the intellectual property are retained intact and that each person to whom the Intellectual Property is furnished agrees to the terms of this Agreement.

If you modify the Intellectual Property, all copies of the modified Intellectual Property must include, in addition to the above copyright notice, a notice that the Intellectual Property includes modifications that have not been approved or adopted by LICENSOR.

THIS LICENSE IS A COPYRIGHT LICENSE ONLY, AND DOES NOT CONVEY ANY RIGHTS UNDER ANY PATENTS THAT MAY BE IN FORCE ANYWHERE IN THE WORLD.

THE INTELLECTUAL PROPERTY IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE DO NOT WARRANT THAT THE FUNCTIONS CONTAINED IN THE INTELLECTUAL PROPERTY WILL MEET YOUR REQUIREMENTS OR THAT THE OPERATION OF THE INTELLECTUAL PROPERTY WILL BE UNINTERRUPTED OR ERROR FREE. ANY USE OF THE INTELLECTUAL PROPERTY SHALL BE MADE ENTIRELY AT THE USER'S OWN RISK. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR ANY CONTRIBUTOR OF INTELLECTUAL PROPERTY RIGHTS TO THE INTELLECTUAL PROPERTY BE LIABLE FOR ANY CLAIM, OR ANY DIRECT, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM ANY ALLEGED INFRINGEMENT OR ANY LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR UNDER ANY OTHER LEGAL THEORY, ARISING OUT OF OR IN CONNECTION WITH THE IMPLEMENTATION, USE, COMMERCIALIZATION OR PERFORMANCE OF THIS INTELLECTUAL PROPERTY.

This license is effective until terminated. You may terminate it at any time by destroying the Intellectual Property together with all copies in any form. The license will also terminate if you fail to comply with any term or condition of this Agreement. Except as provided in the following sentence, no such termination of this license shall require the termination of any third party end-user sublicense to the Intellectual Property which is in force as of the date of notice of such termination. In addition, should the Intellectual Property, or the operation of the Intellectual Property, infringe, or in LICENSOR's sole opinion be likely to infringe, any patent, copyright, trademark or other right of a third party, you agree that LICENSOR, in its sole discretion, may terminate this license without any compensation or liability to you, your licensees or any other party. You agree upon termination of any kind to destroy or cause to be destroyed the Intellectual Property together with all copies in any form, whether held by you or by any third party.

Except as contained in this notice, the name of LICENSOR or of any other holder of a copyright in all or part of the Intellectual Property shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Intellectual Property without prior written authorization of LICENSOR or such copyright holder. LICENSOR is and shall at all times be the sole entity that may authorize

you or any third party to use certification marks, trademarks or other special designations to indicate compliance with any LICENSOR standards or specifications. This Agreement is governed by the laws of the Commonwealth of Massachusetts. The application to this Agreement of the United Nations Convention on Contracts for the International Sale of Goods is hereby expressly excluded. In the event any provision of this Agreement shall be deemed unenforceable, void or invalid, such provision shall be modified so as to make it valid and enforceable, and as so modified the entire Agreement shall remain in full force and effect. No decision, action or inaction by LICENSOR shall be construed to be a waiver of any rights or remedies available to it.

Preface

This document provides the set of revision notes for the CDN Standard, version 1.2 [OGC <document number>] and does not modify that standard.

This document provides the details of edits, deficiency corrections, and enhancements of the above-referenced standard. It also documents those items that have been deprecated. Finally, this document provides implementation details related to issues of backwards compatibility.

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

Recipients of this document are requested to submit, with their comments, notification of any relevant patent claims or other intellectual property rights of which they may be aware that might be infringed by any implementation of the standard set forth in this document, and to provide supporting documentation.

Keywords

ogcdoc, cdb, cdb 1.2, release notes

include::clause-1-intro.adoc

Chapter 1. References

The following normative documents are new or updated references in the standard to which these Release Notes apply.

Chapter 2. Terms and definitions

This document uses the terms defined in Sub-clause 5.3 of [OGC 06-121r8], which is based on the ISO/IEC Directives, Part 2, Rules for the structure and drafting of International Standards. In particular, the word “shall” (not “must”) is the verb form used to indicate a requirement to be strictly followed to conform to this standard.

For the purposes of this document, the following additional terms and definitions apply.

2.1. administrative change

An administrative change is a change that does not alter the conformance abstract tests for any requirements. It includes typographical errors, changes in wording to improve clarity or consistency, and perfunctory changes such as changes in version numbers.

2.2. critical Change

A critical change is a change that alters requirements in a way that is known to cause reverse compatibility issues.

2.3. substantive change

A substantive change is a change that alters requirements or schemas in a way that is not deemed to have a high risk for causing reverse compatibility issues.

2.4. Abbreviated terms

Chapter 3. Change Log

3.1. KEY

- Source:
 - Change Request (CR)
 - GitHub Issue
 - Editor - The CDB document Editor
 - SWG decision
 - User - The CDB User Community
 - Other
- Identifier: Change Request number or issue number and pull request/commit in GitHub
- Type:
 - A=Administrative
 - S=Substantive
 - C=Critical

See [Description of Critical Changes](#) for more information on critical changes and [Description of Substantive Changes](#) for more information on substantive changes.

- Section: Section number in the updated document
- Description: Brief text describing the change
- Purpose: the reason for the change:
 - Clarity
 - Consistency
 - Interoperability
 - Perfunctory
 - Readability
 - Usability
 - Change Request

3.2. Change Table

Table 1. Change Log

Source	Identifier	Type	Section	Description	Purpose
Editor	NA	A	All volumes	Change all cover page to reflect Version 1.2	Consistency

Source	Identifier	Type	Section	Description	Purpose
SWG Decision	NA	A	All volumes	Intro material. Updated list of CDB Volumes	Consistency
CR	507	S	Lights.xml Schema	Added specific FAA obstruction light types. Added missing taxiway clearance lights	Change Request 507
CR	545	A	Vol 1 Core, Clause 1.4.4	Added GeoPackage extension and version numbers	Change Request 545
CR and SWG	545	A	Vol 1 Core, Clause 4	Added missing URLs and update for GeoPackage. Remove “Behavior of Prior Versions” column from table and add note after the table.	Change Request 545
CR	617	S	Schemas	CR 617 How to discover the file format used to encode a dataset in a CDB Data Store (See description in Substantive changes section.	CR 617
User	NA	A	Vol 1 Core, 1.7.1.5.	Add recommendation on using lower case for all extensions	Interoperability
User	NA	A	Vol 1 Core, Clause 2.1.5	Fix table numbering	Duplicate table numbers.
Editor	NA	S	Vol 1 Core, Req 74	Add 1.2 as a valid version number	Consistency
Editor	NA	A	Vol 1 Core, Clause 5.7	Deprecated vector data type MultiPatch	Never implemented.
CR	549	S	Vol 1 Core, Clause 5.8.3	In CDB, it is not clear what the relationship is between GeoSpecific model LODs and their XML Descriptor files. Requirement 129 was modified to fix ambiguity	Clarity

Chapter 4. Description of Critical Changes

4.1. <short name for the change>

<details of the change>

There are no critical changes in this release.

Chapter 5. Description of Substantive Changes

There two substantive changes in CDB Version 1.2.

1. One change was the result of discussion and approval of [CDB Change Request 573](#).
2. The second substantive change was the result of discussion and approval of [CDB Change Request 617](#)

5.1. CR 573: CDB Primary Alternate Terrain Elevation problems

The way that CDB's Primary Alternate Terrain Elevation dataset was defined in CDB Version 1.1 and earlier causes problems with standard open source libraries used to read and process this data. The agreed to changes address one of the issues that ground simulation has with CDB gridded terrain meshes.

The OGC CDB Standards Working Group (SWG) agreed that the solution is to separate the elevation values from the offset values and store them in separate image files within the TIFF file (layered tiff). This approach allows the offset values to remain 8-bit, and allow a floating point elevation value, and remain compatible with open-source GIS libraries.

The following is a summary of the changes made to the CDB Standard, Volume 1: Core to resolve the issues raised in the change request.

1. Cleaned up the elevation dataset table, multi-span columns.
2. Added a new encoding for the Primary Alternate Elevation dataset, using a new component selector value.
3. The new encoding has three sub-images, the first is a one channel image of the elevation values, the second is a one channel image of the mesh type, and the third is a two channel image of the latitude and longitude offsets.
4. Each sub-image can be a different element type, but they must be the same size in rows and columns.
5. The latitude and longitude values can now be any unsigned integer or a floating point value (used to be only 8-bit integer). Thi allows for better control of the location of each elevation value.
6. The mesh type can be either an 8-bit integer, or a 1-bit bi-level image.
7. Other changes:
 - a. Split Requirement 90 into two requirements. The mesh type stayed in Requirement 90 and the latitude and longitude offsets are now specified in Requirement 129.
 - b. Moved Requirements 89 and 90 up to the Primary Elevation dataset and added a reference to them in the Primary Alternate Elevation datasets.

- c. Missing data in the Primary Alternate Elevation dataset uses the Primary Elevation as the default read value (rather than using a single value from Defaults.xml or 0). The Primary Elevation still falls back to the default value.

5.2. CR 617: How to discover the file format used to encode a dataset in a CDB Data Store

CDB 1.1 and earlier supported a single (hard-coded) file format per dataset. To allow other file formats to be used in a CDB Data Store, the need to explicitly specify the file format that is used to physically store the components of a given dataset is required.

The current CDB metadata and controlled vocabulary definitions (See Clauses 1.4.3, 3.1, and 5.1 in CDB Volume 1: Core) has a file called Datasets.xml listing all possible datasets that can be used in a CDB data store. The file has been expanded to indicate the encoding format used to encode the dataset and its components. The related .xsd and .xsl schema files were also updated.

The schema files modified include:

- Datasets.xsd - Now includes an enumeration list "GeoPackage", "JPEG 2000", "GeoTIFF", "TIFF", "Shapefile", "OpenFlight", "XML", "SGI". This list can be expanded in the future as required.
- Datasets.xml - Each dataset code now has a "crosswalk" between the code and the corresponding encoding format. A complete enumeration of the CDB dataset codes can be found in Annex Q, Volume 2 Model and Physical Structure: Informative Annexes. As an example, for dataset code 1: Elevation the Dataset.xml file indicates that GeoTIFF shall be the encoding format.
- Datasets.xsl - Update to reflect the changes to Datasets.xsd and Datasets.xml for encoding formats.

NOTE

This Change Request superceded CDB CR 499: Update the CDB Datasets.xml file with a directory path type.

Chapter 6. Future Work

Annex A: Revision History

Date	Release	Editor	Primary clauses modified	Description
2020-01-04	1.2	C. Reed	all	initial version