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# **Open Geospatial Consortium**

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## **OGC CDB Standards Working Group Charter**

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## To: OGC members & interested parties

The previously chartered OGC CDB Standards Working Group is being rechartered to support the updated OGC Technical Committee Policies and Procedures. The OGC members listed below have proposed this recharter of the OGC CDB Standards Working Group. The SWG proposal provided in this document meets the requirements of the OGC Technical Committee (TC) Policies and Procedures.

The SWG name, statement of purpose, scope, list of deliverables, audience, and language specified in the proposal will constitute the SWG's official charter. Technical discussions may occur no sooner than the SWG's first meeting.

This SWG will operate under the OGC IPR Policy. The eligibility requirements for becoming a participant in the SWG (see details below) are that:

- You must be an employee of an OGC member organization or an individual member of OGC;
- The OGC member must have signed the OGC Membership agreement;
- You must notify the SWG chair of your intent to participate in the first SWG meeting you attend. Members may do so by logging onto the OGC Portal and navigating to the Observer page and clicking on the link for the SWG they wish to join and;
- You must attend meetings of the SWG. The meetings of this SWG are published on the OGC Portal Calendar. Attendance may be by teleconference.

Of course, participants also may join the SWG at any time. The OGC and the SWG welcomes all interested parties.

Non-OGC members who wish to participate may contact us about joining the OGC. In addition, the public may access some of the resources maintained for each SWG: the SWG public description, the SWG Charter, Change Requests, and public comments, which will be linked from the SWG's page.

Please feel free to forward this announcement to any other appropriate lists. The OGC is an open standards organization; we encourage your feedback.

# Chapter 1. Purpose of the Standards Working Group

The purpose of this SWG is to maintain and improve the OGC CDB Standard and Best Practices documents. The SWG will achieve this objective by evaluating and resolving submitted Change Request Proposals (CRPs) and comments received during OGC OAB reviews and CDB adoption votes, recommendations from OGC Engineering Reports, and interactions and discussions in the OGC Technical Committee and its subgroups.

# Chapter 2. Business Value Proposition

Modern simulations used for individual, crew, and collective training and mission rehearsal are increasingly networked together to compose rich federations of virtual and constructive simulations. Standards have been previously developed and widely adopted for the network protocols and information exchanged in simulation federations, but the synthetic environment (including geospatial content) within which simulation learners are immersed has traditionally been locally generated within each simulator using closely coupled, highly optimized, and generally proprietary data models and encoding formats.

The modeling and simulation end-user community increasingly requires “plug and play” synthetic environment database re-use and a common synthetic environment local representation to enhance realism and “fair fight” concepts in military simulation. Cost benefits by re-using complex curated synthetic environments are one major objective. In military simulation communities, heterogeneous simulations within Live (using real-world vehicles), Virtual (simulations with human-in-the-loop vehicle controllers), Constructive (simulations within which entity dynamics are computer controlled), and Gaming [LVC-G] are being composed on demand; such federations are severely limited by the current common practice using local proprietary data models and formats.

There is evidence of multiple implementations. CAE and its wholly-owned subsidiary Presagis have delivered hundreds of simulation ‘channels’ based on CDB to customers in the U.S. Canada, U.K., Germany, Turkey, Israel, Singapore, Australia, Brunei and others. FlightSafety International (FSI) has independent CDB implementations of CDB based Image Generators and CDB content creation tools. Lockheed-Martin and Rockwell-Collins have provided for database creation tools that can work with CDB as either an input or output format. Since the approval of the first CDB SWG Charter, there have been CDB related deliverables in OGC Testbeds, Interoperability Experiments, and Concept Development Studies. Recently participants in the OGC ISG Sprint were: CAE, Cesium, Cognitics, Ecere, Helyx, Hexagon, InfoDao, SimBlocks, and Steinbeis. Participants in the SOCOM/SOFWERX sponsored sprint were CAE and Eaglecapsystems, Cesium, Cloud Lake, Cognitics, Ecere, FlightSagety, Geometric Progress, Presagis, and Penn State University Applied Research Lab plus AGC, JS J7, NGA and SOCOM.

# Chapter 3. Scope of Work

This SWG is focused on processing Change Request Proposals (CRPs) that propose changes and/or enhancements to the OGC CDB Standard.

The Scope of Work (SOW) will be to collect all outstanding CRPs, to evaluate each of the proposals, and to make edits to the standard and Best Practices documents based on the CRPs and related decisions of the SWG membership. The SWG, at their discretion, may also ask the membership for any additional change requests that have not been previously submitted.

The SWG may announce cut-off dates for the submission of CRPs that are to be addressed in the next revision in accordance with the OGC TC Policy and Procedures. Additional CRPs submitted after the cut-off date may be addressed at the discretion of the SWG based on criticality of the change and available time and resources.

The SWG may decide to address selected CRPs immediately in a corrigendum or minor revision or extension of the current standard.

The deliverables of this SWG will be revisions of the OGC CDB standard and Best Practices documents for consideration by the OGC membership for adoption. As part of the CRP review process, the SWG will decide whether each recommendation will be a minor revision or a major revision.

## 3.1. Statement of relationship of planned work to the current OGC standards baseline

The work activities defined in this charter are intended to be aligned with the existing OGC standards baseline where appropriate.

## 3.2. What is Out of Scope?

This SWG is to be focused only on CRPs submitted through the formal process as identified in the OGC TC Policy and Procedures. Any items suggested through emails, vocal discussions, etc. will be outside the scope of this SWG until formally submitted.

## 3.3. Specific Existing Work Used as Starting Point

The starting point for each revision will be the currently adopted version of the OGC CDB Standards and Best Practices documents and all formally submitted CRPs.

At the time of the drafting of this re-charter of the SWG, the existing work baseline is OGC CDB Version 1.2, including the Multi-Spectral Imagery Extension.

## 3.4. Is This a Persistent SWG

[x] YES

[ ] NO

## **3.5. When can the SWG be Inactivated**

As a persistent SWG, the voting members will have to vote to dissolve the SWG.

The work on a minor or major revision of the OGC CDB Standard will be completed after the following milestones have been achieved:

1. The SWG has completed evaluation, resolution, and incorporation of all CRPs submitted prior to the cut-off date into the candidate revision of the standard.
2. Completion of OAB review and public comment period.
3. Approval by the SWG membership of a recommendation to submit the document to the TC for consideration as a revision of the OGC CDB Standard deprecating the current version.
4. The revision of the standard has been approved by the OGC Technical and Planning Committees.

# Chapter 4. Description of deliverables

## 4.1. Deliverables from Previous SWG Activities

During the period of time of the first and second approved Charters of the CDB SWG, the original CDB industry standard was used as the starting point from which to create OGC CDB 1.0 which was submitted and approved; the first minor revision, OGC CDB 1.1 was developed and approved, and the Multi-Spectral Imagery Extension was developed and approved.

During the period of the third approved Charter of the CDB SWG, CDB V1.2, a minor revision to the CDB specification was developed and approved to provide an optional extension for encoding of CDB vector data in OGC Geopackage. A Best Practices Document was also developed and approved to describe conversion of CDB vector data from .SHP to GPKG, and from GPKG to .SHP, including discussion and links to available open-source tools and libraries.

## 4.2. Additional SWG Tasks for Planned SWG Activities

The following tasks are proposed for approval according to the OGC Technical Committee Policies and Procedures:

1. Development of a minor revision, CDB V1.3, to provide a backwards-compatible capability to encode CDB attribution data in a modernized approach recommended in part by OGC Discussion Paper 20-092, which summarizes the experimentation and outcomes of the US SOCOM / SOFWERX sponsored Geospatial Tech Sprint II that was concluded in October 2020.
2. Continued development of CDB X, a major revision to the OGC CDB Standard.

The timeline for new task 1 above is for the SWG to complete its work and recommend revisions to standards and best practices to the OGC TC for adoption before the end of Summer of Calendar Year 2021.

The timeline for (ongoing, continued) task 2 above for the major revision, CDB X, is dependent on emerging requirements, available resources, and scope freeze, and at the time of drafting of this re-charter is estimated to be the release from the SWG of a Core Conceptual/Logical Model for OGC Architecture Board review and public comment by the end of calendar year 2021.



# Chapter 5. IPR Policy for this SWG

RAND-Royalty Free

RAND for fee

# Chapter 6. Anticipated Audience / Participants

The target audience/participants of OGC CDB includes: Government agencies tasked with standards requirements enforcement in procurements; Industry/application developers; Academic institutions; GIS tool and software vendors; Providers of geospatial data commonly incorporated within simulations and; Users/consumers of modeling and simulation synthetic environments.

The SWG will allow open participation to the maximum extent permissible within the OGC TC Policies and Procedures. As a minimum, regular technical input and comment will be solicited from simulation experienced companies, agencies, academic and other institutions, and individuals who may not be OGC members.

# Chapter 7. Domain Working Group Endorsement

3DIM DWG

Interoperable Simulation and Gaming (ISG) DWG

# Chapter 8. Other informative information about the work of this SWG

## 8.1. Collaboration

THE CDB SWG uses the CDB SWG Project on the OGC Portal, Github repositories, Wikis, face-to-face meetings during OGC Technical Committee meetings, and GoToMeeting to collaborate.

## 8.2. Similar or Applicable Standards Work (OGC and Elsewhere)

The following standards, formats and projects may be relevant to the SWG's planned work.

CityGML SWG

IndoorGML SWG

Geopackage SWG

DGGS SWG

GeoTIFF SWG

CRS DWG

Temporal DWG

3DIM DWG

D&I DWG

Interoperable Simulation and Gaming (ISG) DWG

Distributed Interactive Simulation (IEEE 1278 Series)

High Level Architecture (IEEE Standard 1516 Series)

SISO-STD-001.1-2015: Real-time Platform Reference Federation Object Model (RPR FOM 2.0) SISO Reuse and Interoperation of Environmental Data and Processes (RIEDP) Standard(s) and Guidance Products

Common DataBase Version 3.2, Volumes 1 and 2

TIFF (\*.tif)

JPEG 2000 (\*.jp2)

SGI Format (\*.rgb)

OpenFlight (\*.flt)

Shape (I.shp, \*.shx, \*.dbf, \*.dwt)

Extensible Mark-up Language (\*.xml)

OGC GeoPackage

The SWG intends to seek and maintain liaison with each of the organizations as appropriate to achieve the objectives defined in this SWG Charter revision.

### 8.3. Details of first meeting

The CDB SWG has been meeting at least monthly since the first charter was approved in 2015. SWG meetings are conducted either online or face-to-face, and the minutes and supporting materials are published on the OGC Portal Calendar as well as by individual email and calendar notifications from the SWG Chair.

### 8.4. Projected on-going meeting schedule

The CDB SWG currently meets twice a month in most months; a 1.5 hour technical working meeting, and a 1.0 hour SWG meeting. SWG meetings are posted on the OGC Portal Calendar, and members of the SWG email list receive reminder emails and calendar invitations before each meeting.

### 8.5. Supporters of this Charter

The following people support this proposal and are committed to the Charter and projected meeting schedule. These members are known as SWG Founding or Charter members. The charter members agree to the SoW and IPR terms as defined in this charter. The charter members have voting rights beginning the day the SWG is officially formed. Charter Members are shown on the public SWG page.

Name	Organization
David Graham	CAE Inc.
Steve Liang	University of Calgary
Carl Reed	Carl Reed & Associates
Hermann Brassard	Presagis

### 8.6. Conveners

David Graham, Chair, OGC CDB Standards Working Group

# Chapter 9. References

OGC Document Number 15-008 Third approved CDB SWG Charter, September 19, 2019

OGC Document Number 15-008 Second approved CDB SWG Charter, November 18, 2016

OGC Document Number 15-008 First approved CDB SWG Charter, March 10, 2015