



Defence Geospatial Information Working Group (DGIWG) Annual Report 2024 and Business Plan 2025

“Delivering Military Advantage through multi-national geospatial interoperability.”

The activities and achievements of the Defence Geospatial Information Working Group (DGIWG)¹, covering the 2024 calendar year, are captured in this Annual Report. It also looks ahead to planned activities for the 2025 program year.

During 2024, DGIWG conducted three in-person meetings, two Technical Panel (TP) Meetings and a Plenary Group (PG) Meeting.

- The Spring TP Meeting and the PG Meeting with were both hosted in Brussels, Belgium.
- The Fall TP Meeting was hosted in Roskilde, Denmark.

Face-to-Face (F2F) meetings enable DGIWG members to maintain and strengthen both, professional and personal relationships, efficiently coordinate work between Panels, and ultimately, progress the development, implementation and evolution of DGIWG standards. The requirements for such standards and associated profiles stem from member nations, clients such as co-production programs, and the North Atlantic Treaty Organisation (NATO).

2024 DGIWG Highlights

1. Key Technical Outputs. The technical work this past year includes the collection and validation of client requirements as well as the development of profiles and product specifications to support such requirements. Also, the internal cross-collaboration of Technical Panels was noteworthy and will persist as a regular business rhythm. Annex A summarises the official standardization artefacts that were finalised and were released in calendar year 2024; the key outputs include:

Standards

- DGIWG 200 Defence Geospatial Information Framework (DGIF) 3.0:
 - DGIWG 205 Defence Geospatial Information Model (DGIM)
 - DGIWG 206 Defence Geospatial Feature Concept Dictionary (DGFCDD)
 - DGIWG 207 Defence Geospatial Real World Object Index (DGRWI)
 - DGIWG 208 Defence Geospatial Encoding Specification – Part 1: GML (Geography Markup Language)
- DGIWG 112 Defence Profile of OGC Web Map Service 1.3 Revision
- DGIWG 124 Defence Profile of OGC Web Map Tile Service 2.0

Registries

¹ The Defence Geospatial Information Working Group (DGIWG) is a multi-national body established by a memorandum of understanding between the Defence organisations of respective nations. Its main objective is to provide strategic guidance and recommendations to its membership on the standardisation of geospatial data, products, and services. It also supports the requirements of NATO and the other alliances that its members participate in, including UN sanctioned peacekeeping.



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- Publication of the DGIWG Symbology Depository and Registry. This Register is a dynamic environment that will hold DGIWG approved symbology.

Technical Reports

- DGIWG 320 Cross-reference between STANAG 3675 and DGIWG Symbol Depository and Registry
- DGIWG 321 Point Cloud Standardization White Paper

Refer to <https://dgiwg.org/documents/> for a complete listing of DGIWG standardisation artefacts.

2. Succession Planning and Business Process Evolution. DGIWG leadership and its members will prepare farewells and will be seeking newcomers for the following management role and other opportunities:

- Technical Coordinator
- Web Content Manager

3. Quality Panel. The Quality Panel (P0) has continued to assure the structure, quality, and consistency of documents prior to publication. The staffing of the Quality Panel continues to be a challenge, and it is currently highly dependent on contributions mostly from New Zealand. Augmenting this capacity by providing suitable personnel should be a high priority for member nations. Properly resourcing the Quality Panel is essential to facilitate timely finalization and release of DGIWG documentation and ensure they are credible, relevant and implementable. In-lieu of permanent members, the feasibility of cycling members of the technical panels into the Quality Panel will be investigated. The intent is to allow cross pollination of expertise and help inform best practice. Any QA/QC resources will be identified to all DGIWG members to ensure they are readily accessible to help with the QA/QC of documents. The work is not exclusively technical, thus anyone with a good grasp of written English and an eye for detail could make a valuable contribution.

4. Program of Work. The Program of Work (PoW) depicts the status of all requirements, projects and timelines. It is currently only visible to DGIWG members via the portal:

https://portal.dgiwg.org/files/?artifact_id=72746

5. Outfacing Summary. A depiction of the PoW is available on the DGIWG public website and aims to improve transparency to all DGIWG clients. As subset of the PoW, this high-level summary captures the project activities as well as the project artefact's current life cycle stage. This outfacing summary will be updated bi-annually, at minimum.

6. Vacancies. For DGIWG to operate effectively, we are dependent on nations providing key officers such as the Director, Management and Technical Panel Leads. We have been fortunate that most of these roles have been sustained by particular nations and successors have been found automatically.



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However, in response to continuous business process improvements and technology enhancements, several new roles have been created. DGIWG continues to need the support of member nations to fill these vacancies:

- QA Reviewers for P0 (Quality) – generalists with good command of written English and/or Technical Experts.
- Panel Site Content Managers – panel members with technical acumen to manage the public website content for their respective panel.

All nations are encouraged to help with sharing the overhead of managing DGIWG by offering support in these key areas.

**2025 DGIWG Business Plan****1. Development**

The following work items are continuing, or will be under development in 2025:

| LEAD PANEL | PROJECT NAME | PROJECT DESCRIPTION |
|------------------|--------------------------------|--|
| P1 - Vector Data | S101 to DGIF Mapping | To map S101 (Universal Hydrographic Data Model) to Defence Geospatial Information Framework (DGIF) and close gaps |
| P1 - Vector Data | Update DGIF 3.0 Mapping Tables | To Update/Creation of Mapping Tables to Defence Geospatial Information Framework (DGIF) 3.0, Open Street Map (OSM) to DGIF3.0, Defence Vertical Obstruction File (DVOF) to DGIF3.0, EuroGeographics EuroGlobalMap/EuroRegional Map (EGM/EDR) to DGIF 3.0 |
| P1 - Vector Data | DPS DCM | To develop Defence Geospatial Information Framework (DGIF) compliant Defence City Map (DCM) Data Product Specification (DPS) - Analogue |
| P1 - Vector Data | DPS JOG (A) | To Develop Joint Operations Graphic - Air Data Product Specification (JOG-A DPS) 250K |
| P1 - Vector Data | DPS TPC ONC | To develop Tactical Pilot Chart / Operational Navigation Chart Data Product Specification (TPC DPS) conformant to Defence Geospatial Information Framework (DGIF) |
| P1 - Vector Data | MGCP 5k/50k DPS | To produce Data Product Specification (DPS) and Artifacts for Multinational Geospatial Collaboration Program (MGCP) 5K/50K Technical Refresh Document (TRD5) outputs. |
| P1 - Vector Data | Geopackage Schema for MGCP | To Develop a DGIWG Geopackage Profile encoded schema in support of Multinational Geospatial Collaboration Program (MGCP) 5K/50K Technical Refresh Document (TRD5) outputs. |
| P1 - Vector Data | IPHG POI DPS | To provide artifacts and support to International Programme for Human Geography (IPHG) for the capture and exchange of IPHG Points of Interest (PoI) data in line with Defence Geospatial Information Framework (DGIF) 3.0 |
| P1 - Vector Data | Urban Exchange Schema | To develop Defence Geospatial Information Framework (DGIF 3.0) compliant Information Model and Exchange Specification for Urban Geospatial Information |



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| P2 - Imagery and Gridded Data | JPEG2000 | To review and Update of DGIWG Profile of JPEG2000 for Georeferenced and Referenceable Imagery Standard |
| P2 - Imagery and Gridded Data | DGED | To revise Defence Geospatial Elevation Data (DGED) Standard to include new Tiling Scheme |
| P3 - Metadata | DMF 2.1 | To develop DGIWG Metadata Foundation (DMF) 2.1 |
| P3 - Metadata | DMF Implementation Guidance | To develop Metadata General Guidelines - Metadata DPS profile mapping to support DGIWG Data Product Specifications (DPSs) |
| P3 - Metadata | Metadata Register | To Develop METADATA Register |
| P4 - Portrayal | Symbol Encoding Guide | To produce Symbol Encoding (SE) Implementation Guide |
| P5 - Web Services | Web Processing Service | To develop Defence Profile of OGC's Web Processing Service (WPS) |
| P5 - Web Services | Geopackage Extension: Styling / Portrayal | To Investigate defence Styling/Portrayal Geopackage Extension |
| P5 - Web Services | EDR API Profile | To define Defence Profile of OGC Environmental Data Retrieval (EDR) Application Programming Interface (API) |

2. New Activities

The following work items are activities that have been accepted into DGIWG's Program of Work (PoW) resulting from client and member nation requirements or standardisation initiatives identified by participants and will activity initiate in 2025:

| LEAD PANEL | PROJECT NAME | PROJECT DESCRIPTION |
|-------------------------------|--|--|
| P1 - Vector Data | DGIF Exchange Formats for Vector Data - Part 2: Geopackage | To Provide Encoding Rules for Vector data using GeoPackage in complement of DGIWG Profile of GeoPackage Ed 1.1 |
| P2 - Imagery and Gridded Data | Polar Extension: DRP | To add Polar extension support to Defence Raster Product (DRP) product specification. |



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| P2 - Imagery and Gridded Data | Polar Extension: DOP | To add Polar extension support to Defence Ortho-Imagery Product (DOP) product specification. |
| P5 - Web Services | Geopackage Extension: Styling / Portrayal | To investigate Defence Styling/Portrayal Geopackage Extension |
| P1 - Vector Data | Aero Content Review/AIXM Mapping | To improve and update Aeronautical content in Defence Geospatial Information Framework (DGIF) and provided alignment with Aeronautical Information Exchange Model (AIXM) |
| P1 - Vector Data | DTM50 | To uplift Defence Topographic Map for 1:50,000 Scale (DTM50) Data Product Specification (DPS) to Defence Geospatial Information Framework (DGIF) 3.0 - Analogue |
| P1 - Vector Data | DTOX | To uplift Defence Topographic Exchange (DTOX) Data Product Specification (DPS) to Defence Geospatial Information Framework (DGIF) 3.0 |
| P2- Image and Gridded Data | GeoTIFF Profile Revision | To revise the DGIWG GeoTIFF Profile to support Lempel–Ziv–Welch (LZW) encoding, Cloud Optimized GeoTIFF (COG) and BigTIFF |
| P3 - Metadata | MGCP Metadata Profile | To define a metadata profile for Multinational Geospatial Collaboration Program (MGCP) 50K/5K Technical Refresh Document (TRD5) |
| P2- Image and Gridded Data | ESM: Encoding Geopackage | To Develop Elevation Surface Model (ESM) - Encoding Rules - Part 5 GeoPackage |
| P5 - Web Services | WFS | To revise Defence profile of OGC's Web Feature Service 2.0 |

3. Maintenance

The following items are due for technical review and appropriate action expected to commence in 2025:

| LEAD PANEL | PROJECT NAME | PROJECT DESCRIPTION |
|------------------|------------------|--|
| P1 - Vector Data | IPHG CCL/SEL DPS | To Review International Program for Human Geography (IPHG) Data Product Specifications (DPS) for Cultural Context and Statistics (CCL/SEL) |



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| P2 - Imagery and Gridded Data | ESM | To review Elevation Surface Model (ESM) Standardized Profile; to include specifically the review of: <ul style="list-style-type: none"> • Encoding Rules - Part 1: Core (v1.1.1) • Encoding Rules - Part 4: NSIF (v1.1.1) • GML Application Schema (v1.0.2) |
| P4 - Portrayal | Web Display Symbols | To review Symbolology for Web Display Standard |
| P4 - Portrayal | Standard Colours | To review Printing Colours for Defence Geospatial Products standard |

4. Standing Tasks

The following items are standing activities that will continue through 2025.

| LEAD PANEL | PROJECT NAME | PROJECT DESCRIPTION |
|------------------|------------------|--|
| P1 - Vector Data | DGIF Maintenance | To provide continuous Maintenance and Evolution of Defence Geospatial Information Framework (DGIF) Content via DGIF Change Control Process |
| P3 - Metadata | DMF Maintenance | To provide DGIWG Metadata Framework (DMF) continuous maintenance, inc. Data Product Specification (DPS) support, samples |
| P4 - Portrayal | P4- Portrayal | To provide Symbolology and Symbol Set continuous maintenance via Change Control Process |



Annex A: DGIWG 2024 Deliveries – Standardisation Artefacts and Technical Reports

The table below is a summary of standardization artefacts that were finalised and released in calendar year 2024.

| DGIWG # | Title | Ed. # | Edition Date | Abstract |
|----------------|--|--------------|---------------------|--|
| 112 | Defence Profile of OGC Web Map Service 1.3 Revision | 3.1 | 10 Sept 2024 | This document defines specific DGIWG requirements, recommendations and guidelines for implementations of the ISO and OGC Web Map Service standards; ISO 19128:2005 Web Map Server Interface and the OpenGIS Web Map Server Implementation Specification 1.3.0. |
| 124 | Defence Profile of OGC Web Map Tile Service 2.0 | 2.0 | 10 Sept 2024 | This document is a profile of OGC 07-057r7, v.2.0.0, dated 2024-09-10. It defines specific Defence requirements, recommendations and guidelines for implementations of a Web Map Tile Service. |
| 200 | Defence Geospatial Information Framework (DGIF) | 3.0 | 19 July 2024 | This document gives an overview on all DGIF artifacts, deliverables, and specification and defines basic and conformance classes for DGIF in the area of geospatial vector data. |
| 205 | Defence Geospatial Information Model (DGIM) | 3.0 | 19 July 2024 | This document describes the purpose of the DGIM (Defence Geospatial Information Model) and characteristics of DGIM data. It also contextualises the DGIM within the DGIF (Defence Geospatial Information Framework). |
| 206 | Defence Geospatial Feature Concept Dictionary (DGFCDD) Description and Content | 3.0 | 19 July 2024 | This standard provides information on the purpose and structure for the registration of geospatial phenomena within the Defence Geospatial Feature Concept Dictionary (DGFCDD), part of the Defence Geospatial Information Framework (DGIF). |
| 207 | Defence Geospatial Real World Object Index (DGRWI) | 3.0 | 19 July 2024 | This standard provides information on the purpose and structure of data within the Defence Geospatial Real World Object Index (DGRWI) as part of the Defence Geospatial Information Framework (DGIF). |



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| DGIWG # | Title | Ed. # | Edition Date | Abstract |
|---------|---|-------|--------------|---|
| 208 | Defence Geospatial Information Framework Encoding Specification - Part 1: GML | 3.0 | 25 July 2024 | This document describes a schema using the Geography Markup Language for exchanging data for application schemas of the Defense Geospatial Information Model. |
| 320 | Cross-reference between STANAG 3675 and DGIWG Symbol Database/Register | 1.0 | 28 Jun 2024 | Technical report related to the retirement of STANAG 3675 – 'Symbols on Land Maps, Aeronautical and Special Naval Charts'. The aim being not to lose any relevant symbology once STANAG 3675 is retired, and to ensure that this symbology is added to the DGIWG Symbol Database. |
| 321 | DGIWG Point Cloud Standardization White Paper | 1.0 | 05 Dec 2024 | This identifies potential requirements, use cases and work items for defence standardization relating to point clouds |