

Paper for Consideration by HSSC8

Report on the Activities of the Defence Geospatial Information Working Group (DGIWG)

Submitted by:	DGIWG
Executive Summary:	DGIWG is the multi-national body responsible for geospatial standardization for the defence organizations of member nations. Some of its standards development activities overlap with those of the IHO.
Related Documents:	S-100, S-101, S-102, S-57
Related Projects:	S-100WG and its PTs, ENCWG

Introduction / Background

The Defence Geospatial Information Framework (DGIF) is a comprehensive framework that provides a focal point for a range of standardisation work. The DGIF standards are designed to cater for a wide multi-national Defence Community.

Geospatial coherence and interoperability are ultimately the drivers for the work conducted by the DGIWG and in order to facilitate this, the Defence Geospatial Standards Baseline (DGSB) was created. The standards, implementation profiles, product specifications and information guidance cited in this document are intended to serve as a primary source of technical guidance for achieving geospatial interoperability amongst respective defence organisations.

Participation in the International Organization for Standardization (ISO) TC 211¹ and the Open Geospatial Consortium (OGC)² continues. Where applicable, and in the best interest of member organisations, the DGIWG participated in external standardisation activities.

The DGIWG is increasingly placing emphasis on the testing and evaluation of its draft standards. By sponsoring OGC tests of DGIWG (draft) standards, DGIWG member organisations significantly contribute to the development of interoperable standards and implementing profiles for both the civil and defence community. The DGIWG continues to work closely with OGC to promote its profiles of OGC standards as “Best Practice Documents.

Analysis/Discussion

The DGIWG standards development activities are grouped into five Technical Panels, each addressing multiple projects. A brief summary of these activities is provided below;

Technical Panel One (P1): The DGIWG Vector Data Panel (established 2015)

This technical panel comprises all projects and maintenance efforts for the development of models, schemas and products based on vector data. The main group is the Vector Models and Schema Team (VMST) responsible for the development and maintenance of all underlying specifications and technical documents. The VMST continues to work on the development of the Defence Geospatial Information Framework (DGIF) and the applicable standardisation artifacts. These include the Defence Geospatial Information Model (DGIM), the Defence Geospatial Feature Concept Dictionary (DGFC) and the Defence Geospatial Real World Object

¹ ISO TC 211 is a standard technical committee formed within ISO, tasked with covering the areas of digital geographic information (such as used by geographic information systems) and geomatics. It is responsible for preparation of a series of International Standards and Technical Specifications numbered in the range starting at 19101

² The OGC is an international voluntary consensus standards organization, originated in 1994. In the OGC, more than 400 commercial, governmental, non-profit and research organisations worldwide collaborate in a consensus process encouraging development and implementation of open standards for geospatial content and services, GIS data processing and data sharing.

Index (DGRWI). This work addresses a wide range of geospatial data needs expressed by the military community and offers an integrated feature model that enables a common approach for defining and expressing feature concepts that are used in product standards. The IHO and the NATO Geospatial Maritime Working Group (GMWG) are working in close collaboration to introduce S101 (ENC) and AML to the data model.

Technical Panel Two (P2): The DGIWG Imagery & Gridded Data Panel

This Technical Panel aims at developing the geospatial interoperability of all member nations, for imagery and gridded data. The DGIWG approach is based on the published, emerging public domain or industry standards from the ISO TC 211 and the OGC; influencing their development where necessary.

A key project under P2 has been the development of the Elevation Surface Model (ESM) which is supported by multiple encoding schemas, to include NITF, GeoTIFF, and GMLJP2. P2 has initiated work on a product solution to replace the legacy Digital Terrain Elevation Data (DTED) product standard. Other work includes a revision of the Geography Markup Language/Joint Photographic Expert Group (GML JP2) profile and Sensor Metadata profile.

Coordination of relevant project work has occurred with the IHO, OGC and TC/211; as well as collaboration with the Web Services Technical Panel. Specifically there has been liaison between this panel and the S-102 Project Team.

Technical Panel Three (P3): The DGIWG Metadata Technical Panel

P3 develops and maintains metadata standards that define the tags that facilitate the discovery, evaluation, use and management of geospatial information and services for the defence community. As metadata cross-cuts many aspects of geospatial information and services, the P3 works closely across the community of military users, as well as with other standards development organisations (e.g. ISO and IHO). With the joint collaboration of P3 and P2, extensions for sensor metadata have been produced. This work facilitates the search, import/export and use of sensor data and geo-referenceable information through appropriate metadata tagging of geospatial data and products.

Technical Panel Four (P4): The DGIWG Portrayal Technical Panel

P4 addresses the technical development of Portrayal Standards and the management of symbol sets and rule sets as applied by respective products. Increasing amounts of geospatial data are now published through Web Services, and the symbols designed for hardcopy products are not always suitable for web rendering either in terms of processing/display efficiency or visual effectiveness. The development of rule sets and common symbology as defined for products are required for both paper products and digital display. This team has identified a need to enhance existing OGC specifications in this area such as SLD and is following IHO developments in this area specifically the SVG profile being developed for the S-100 Portrayal component.

Technical Panel Five (P5): The DGIWG Web Services Technical Panel

P5 addresses the technical issues related to information services, interfaces and required formats, including any testing (either performance or compliance based) activities that relate to these fields to foster the discovery, retrieval, exchange and use of geospatial data and products.

P5 have developed a military profile of the OGC Web Map Service (WMS) 1.3 specification. This profile has been approved by OGC as an official OGC Best Practice Document for the military community. The Panel have also developed a profile of the OGC Web Feature Service (WFS) 2.0 specification. This profile has also been approved by OGC as an official OGC Best Practice Document for the military community. The Panel have also developed Military Profiles of the OGC Web Coverage Service (WCS) 2.0 specification for Geospatial and Meteorological Ocean METOC requirements.

Conclusions

DGIWG continue to foster close engagement with key partner organization including the IHO, OGC and ISO/TC 211. The work is driven by the need for data sharing in a coalition environment. A number of opportunities for technical collaboration exist in areas where DGIWG and IHO are facing common challenges.

Recommendations

The HSSC are invited to promote cooperation of between the relevant IHO and DGIWG standards development Working Groups and Technical Panels.

Justification and Impacts**Action Required of [HSSC] [Relevant HSSC WG]**

The HSSC is invited to:

- a. note the DGIWG report and provide feedback/comments.