



The use of ISO standards within DGIWG

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Agenda

- What is DGIWG?
- NGIF and DGIF
- Technical panels and use of standards
- Concluding remarks



What is DGIWG

- **DGIWG: Defence Geospatial Information Working Group**
- **DGIWG** is the **multi-national body** responsible to the defence organizations of **member nations** for coordinated advice and policy recommendations on geospatial standardization issues
- The mission of DGIWG is to create **standards and procedures** required to enable the **provision, exchange and use of standardized geospatial information**

Participating Members

-  Australia
-  Belgium
-  Canada
-  Czech Republic
-  Denmark
-  Estonia
-  France
-  Germany
-  Greece
-  Italy
-  The Netherlands
-  New Zealand
-  Norway
-  Portugal
-  Romania
-  South Africa
-  Spain
-  Sweden
-  Turkey
-  United Kingdom
-  United States

Associates

-  Latvia
-  Poland



Business Objectives

- DGIWG's **primary objective** is to ensure **standards** are established for use **within NATO and Coalition operations**
- DGIWG develops **standards and services** in alignment with **commercial, and public domain standards** to the **largest degree practical**.
- DGIWG geospatial **standards are built** upon the standards for geographic information **defined by ISO TC/211 and OGC** to the largest degree possible.



Organisation

DGIWG consist of **five thematic panels** and a **project coordination group**:

1. Vector Data
2. Metadata
3. Portrayal
4. Imagery and Gridded Data
5. Geospatial Web Services

Coordination group:

NATO/Defence Geospatial Information Framework (NGIF/DGIF)



NGIF

- **DGIWG** has been **tasked by NATO** to define and maintain the **NATO Geospatial Information Framework (NGIF)**
- NGIF purpose is to
 - **ensure interoperability** between NATO nations by defining a **common standardised data model** for the **exchange of data** and
 - to **implement** the „**operating off the same map**“ **policy** by defining standardised products.



NGIF

- NGIF should be one of the most important pieces of work that the **military geospatial community** has embarked upon in many years.
- NGIF is based on the **US framework GEOINT Structure Implementation Profile (GSIP)**
- GSIP defines a set of specifications that are based on several **ISO/TC 211 standards**: ISO 19103, ISO 19109, ISO 19115, ISO 19126, ISO 19135.

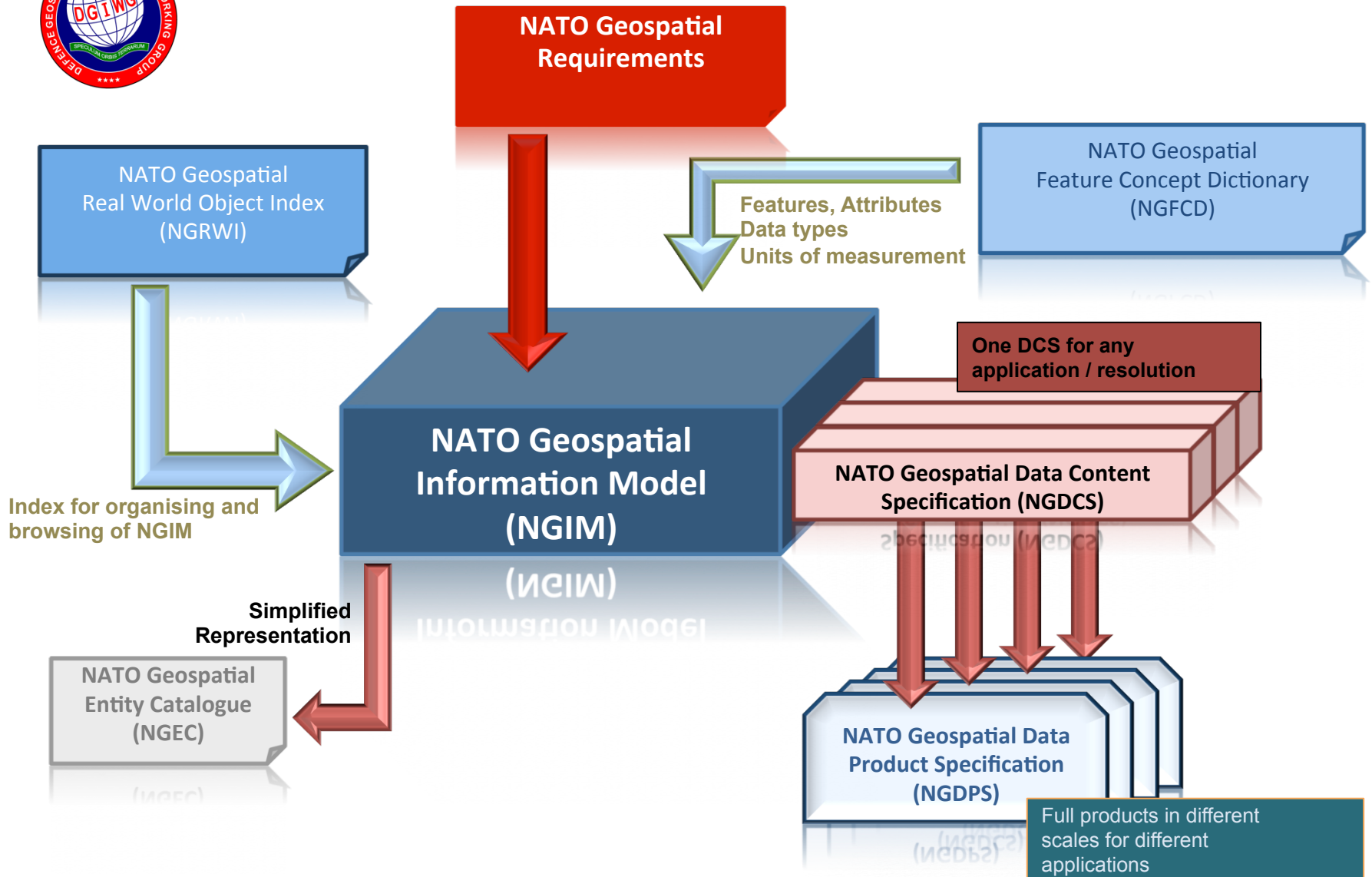


DGIF

- DGIF is the overarching concept that will encompass all of the work ongoing within DGIWG.
- Presently DGIF, NGIF and GSIP are aligned by the 4 artifacts within the NGIF STANAG.
 - **NATO Geospatial Information Model (NGIM)**
 - **NATO Geospatial Feature Concept Dictionary (NGFCD)**
 - **NATO Geospatial Real World Object Index (NGRWI)**
 - **NATO Geospatial Entity Catalogue (NGEC)**
- Over the next year **DGIF** will look to encompass all of the DGIWG work (**Portrayal, Imagery and Gridded data and Web Services**) not just the initial NATO requirements.

DGIF 2.0 – UML Approach

- DGIF Collaborative Modelling Environment (DCE) in Enterprise Architect using UML and cloud service
- Using all ISO standards relevant to vector data modeling as 19103, 19110, 19126, 19136 ...
- Using all ISO standards relevant for UML (meta-) modelling and XML generation





Data Product Specification

- How do we use standards from ISO/TC211 in our work?
 - DGIWG has profiled ISO 19131:2005 in order to support the development of Data Product Specifications
 - DGIWG is currently preparing an updated and expanded version of this specification ISO 19131:2008+A1:2011
 - This will support Data Product Specifications in the broadest sense covering vector data, imagery/gridded data and web service content
 - The specification will build on the underlying DGIF components as required. For example Application Schemas and Feature Catalogues will be derived from the DGIM
- This work is currently scheduled to deliver a revised specification in mid 2016



Imagery and gridded data

- How do we use standards from ISO/TC211 in our work?
 - The DGIWG Elevation Surface Model is a profile for Elevation Gridded coverage (based on ISO 19123 and OGC GMLCOV schema) and Elevation point sets (based on ISO 19136 – GML) for the military community, according to the principles of a content model (ISO 19129) for elevation
 - DGED Gridded Elevation product profile is based on ESM and DGIWG DMF (based on ISO 19115 series), according to DGIWG DPS profile of 19131
 - DGIWG GMLJP2 profile is based on ISO 15444-1 and -2 (JP2 and JPX) and on ISO 19136 – GML + OGC GMLCOV
- DGIWG is also involved within ISO TC211 working groups
 - Past imagery works: 19130-2, 19163-1
 - Current imagery works : revision of 19115-2, 19130-1



Quality and Metadata

- How do we use standards from ISO/TC211 in our work?
 - The DGIWG metadata foundation is the metadata profile for DGIWG and the military community
 - Version 1.0.1, published end 2014, is a profile of ISO 19115, ISO 19115-2 and ISO 19119, implemented according to ISO 19139 and ISO 19139-2.
 - Version 2.0, in progress, will be a profile of ISO 19115-1, ISO 19115-2, ISO 19157, implemented according to ISO 19115-3 and ISO 19157-2.
 - A mapping will also be proposed with ISO 19115:2003/ISO 19139
 - ISO 19130 is taken into account within the sensor part
 - The DGIWG metadata register, currently being developed, will be ISO 19135 compliant.
- DGIWG is also directly involved within ISO TC211 working groups
 - Past metadata works: 19115, 19115-2, 19115-1, 19115-3, 19139, 19139-2, 19157
 - Current metadata works: 19115-2 revision, 19139-1, 19157-2



Portrayal

- How do we use standards from ISO/TC211 in our work?
- DGIWG have carried out significant activities in the field of portrayal.
- DGIWG portrayal activities are specified in the DGIWG Portrayal Roadmap.
- These objectives have led to an active involvement in the revision of ISO 19117:2005 (Geographic information – Portrayal), published in 2012.



Web Services

- The **DGIWG Web Services Technical Panel (WSTP)** creates and maintains standards and implementation profiles for geospatial Web Services.
- It addresses the technical issues related to **geospatial information services, interfaces and required formats** for use within a **military environment**.



Web Services

- How do we use standards from ISO/TC211 in our work?
- DGIWG developed profiles for the following OGC/ISO Services
 - ISO 19128:2005 **Web map server interface**
 - OGC **Web Feature Service 2.0.2** / ISO NP 19142:2015
- DGIWG is also working on profiles for the **OGC Web Coverage Service 2.0.1** to provide unified **access to geographic, hydrographic, oceanographic and meteorological** data according to the gridded, point and TIN data models.



Web Services

- Additionally the following new projects have been started, aiming at providing military profiles and implementation guidance on the following OGC specifications:
 - **DGIWG GeoPackage**
 - **DGIWG Web Map Tile Service**
 - **DGIWG Catalogue Service**



Concluding remarks

- DGIWG is a long term contributor to the development of the ISO/TC 211 suite of standards.
- DGIWG provides use cases and requirements to ISO/TC211 and OGC in order to influence standardization as early as possible.
- DGIWG geospatial **standards are built** upon the standards for geographic information **defined by ISO TC/211 and OGC** to the largest degree possible
 - To ensure harmonized standards and specifications
 - To minimize cost of implementation



Thank you for your attention

Questions?

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