

## Report of the Geospatial Maritime Working Group Technical Panel (GMWG TP)

<b>Submitted by:</b>	Al Armstrong, Chair, GMWG TP
<b>Related Documents:</b>	S-5xx
<b>Related Projects:</b>	S-501 PT

<b>Chair:</b>	Al Armstrong, USA/NGA
<b>Vice-Chair:</b>	N/A
<b>Secretary:</b>	N/A
<b>Member States:</b>	Australia, Belgium, Brazil, Canada, Denmark, Finland, France, Germany, Greece Italy, Netherlands, Norway, Portugal, Romania, Sweden, Türkiye, UK, USA (31)
<b>Expert Contributor Organisations:</b>	Naval Information Warfare Center, Atlantic (NIWC), Supreme Headquarters Allied Powers Europe (SHAPE), Allied Maritime Command (MARCOM)

### 1. Meetings Held During Reporting Period

1.1 GMWG TP holds two meetings a year, one in Spring alongside the GMWG Plenary, and one in late Fall, both in person. Hybrid meetings are offered if the host nation can technically support them, however despite technology to support, a hybrid approach was discovered to be difficult to monitor and harmonize.

1.2 GMWG PT22A was a hybrid meeting held in Gdansk, Poland, 17<sup>th</sup> to 18<sup>th</sup> March 2022. 28 attendees + additional 7 online that did not yet have authorization for travel during COVID-19..

GMWG TP Work plan and objectives further progressed.

Introduction to S-100.

Review of S-97, Steps to creating S-500 series product specification.

Initiation of IHO Registry Analysis / AML data schema review using FME Workbench tools.

Review of AML data utilization by Allied Maritime Command (MARCOM).

1.3 GMWG PT 22B was a in-person meeting held in Oostende, Belgium, 1<sup>st</sup> to 2<sup>nd</sup> December 2022. 31 Attendees.

GMWG TP Work plan and objectives further progressed.

Review of defence industry and defence production OEM engagement activities.

S-501 Project Team (S-500PT) initiation and progress update.

Update of IHO Registry Analysis / AML data schema review using FME Workbench tool.

Review of IALA-IHO S-100/S-200 Workshop Update and Outcomes/Lessons learned

1.4 GMWG PT 23A was a in-person meeting held in Taunton, United Kingdom, 16<sup>th</sup> May 2023. 25 Attendees.

GMWG TP Work plan and objectives further progressed.

DGIWG – Maritime Sub Group update on S-101 mapping and DGIF change proposals.

S-501 Project Team (S-500PT) progress update.

- Finalization of IHO Registry Analysis / AML data schema review using FME Workbench tool.

1.5 The next GMWG TP meeting will be held in person in late fall 2023. Location and date of meeting have yet to be determined.

## **2. Work Program**

### **2.1 Maintenance of S-57 based Additional Military Layers (AML)**

2.1.1 AML is not a navigation product and all navigation decisions must be made with reference to the primary navigation product such as an Electronic Navigational Chart (ENC), however, the picture AML conveys greatly enhances understanding of the maritime operational environment. AML enhances knowledge of the maritime and littoral environment increasing operational effectiveness and the probability of success in military operations and humanitarian missions. AML consists of six vector products: Contour Line Bathymetry (CLB); Environment, Seabed and Beach (ESB); Large Bottom Objects (LBO); Maritime Foundation and Facilities (MFF); Small Bottom Objects (SBO); Routes, Areas and Limits (RAL). Recent development of 3 gridded products have also been developed: Integrated Water Column (IWC); Atmospheric and Meteorological Climatology (AMC); Network Model Bathymetry (NMB); and Gridded Sediment – Environment, Seabed and Beach (GS-ESB).

2.1.2 In light of the current long-term AML co-production over the initial Mediterranean and Middle East areas and growth into a new northern region including the North Atlantic and Baltic regions, combined with the development of the S-100/S-101, maintenance of the S-57 based AML has been frozen. The majority of AML development has been on the future AML, based on the S-100 framework, entitled the S-500 series.

### **2.2 S-501 Project Team Develop**

2.2.1 The S-501PT had been created and is intended to meet virtually monthly to undertake the detailed activities for creating the initial S-501 Additional Military Layer product specification development utilizing the S-97 as the guiding document to guide the PT. It has been recognized by the GMWG TP Chair and the UKHO lead representative that development of a S-501 during every TP meeting (every 6 months) is insufficient meeting time to garner any significant PS development. Utilizing the same virtual meeting tools that were used during the COVID-19 meeting periods, the PT hold monthly meetings with targeted agenda items and work plan development items to accomplish each meeting that will be reported at each semi-annual PT meeting.

2.2.2 Recent S-501PT activities/outcomes include:

- Identified need for S-100WG Chair / KHOA / IHO Secretariat to consider to host S-100 Toolkit workshop to deliver the new functions for S-100 based product specification developers in 2023.
- GMWG TP volunteers sought for attendance at S-100 Toolkit workshop in 2023 once announced.
- Effort to grow the S-101PT and request for volunteers to join the S-501 Project Team to contact GBR to be included on regular VTCs.
- Requirement to create S-501 Project Team Terms Of Reference (TORs).
- S-501 data schema consolidation and finalization.
- GBR to share consolidated FME Analysis based on national outputs, Nations to analyze and provide comment by 1st Sept 2023.
- Request for volunteers to act as Submitting Organizations to the AML Domain of the IHO GI Registry.
- On identification, GBR to provide skills transfer based on knowledge gained at IHO GI Registry workshop.
- DEU to demonstrate their previous work on S-52 to S-100 symbology conversion.
- Separate non-GMWG ACTION for CAN to organize national AML reps meeting with CARIS for S-500 development.

### **2.3 DGIWG Maritime Sub Group (MSG) / S-101 ENC to DGIF Mapping**

2.3.1 In an effort to support defence production for those naval vessels that utilize a Command and Control system versus an ECDIS/WECDIS S-100 compliant system, the NATO Geospatial Information Framework

(NGIF) – that is based on the DGIWG Geospatial Information Framework (DGIF) will be utilized as the data interoperability and transferability model to support such C2 systems. Therefore, a S-101 DCEG mapping effort to the DGIF model has been ongoing since 2014. As of the GMWG TP 23A meeting, approximately 99% of S-101 Date Classification & Encoding Guide (DCEG) mapped to DGIF model. This has resulted in a total of 170 identified change proposals for the DGIF. Attending recent DGIWG meetings, 6 of these CPs were submitted and accepted in the last voting cycles of Oct (22-3) and Feb (23-1). Of the 170 CPs, 55 need continued DGIWG/GMWG TP discussions to resolve, 92 have already been briefed to the DGIWG, and 23 CPs committed to DGIF model changes.

### **3. Other**

3.1 With the S-58 Validation Checks v7.0 was recently published by the S-100WG, GMWG TP has action to review all changes to the S-58 to the AML Validation Checks to keep the AML checks in line.

### **4. Action Required of HSSC**

The HSSC is invited to:

- a. note this report.