

11th S-129 UKCM Project Team Meeting Record of Meeting

1130 – 1430 GMT, 30 April 2024
VTC via GoToMeeting

1.1 Welcome and Introductions / Review of Meeting Agenda

The Chair opened the meeting at 1130 GMT and welcomed S-129 Project Team (PT) members as well as other delegates from the S-100 Working Group (WG). Refer to Annex A for the list of participants.

The Chair provided an overview of the draft meeting agenda (Annex B). There were no new agenda items proposed by the meeting participants.

1.3 Review of Previous Meeting Action Items

The Chair provided an update on the progress of existing action items.

The progress of the action items, as at the 11th PT meeting commencement, are reflected in Annex C, and as follows:

PT8-03 – Obtain feedback from Mikko (NCWG) and Izzy (KHOA) regarding portrayal of UKC non-navigable area, UKC almost non-navigable area, and UKCM area boundary

The Chair updated the PT that change proposals to S-129 feature portrayals were recently submitted to NCWG for review. The NCWG has offered to fast-track their review process, in consideration of the S-129 development time constraints. The PT is currently awaiting NCWG response.

PT8-08 – Produce test datasets based on S-129 Edition 1.1.0

The Chair noted test datasets having been generated. However, there were recent findings with regards to the correctness of the S-129 Feature Catalogue and schema XSD file. Hence, test datasets will need to be updated and regenerated based on necessary updates to the S-129 FC and schema,

PT8-10 – Provide 1.1.0 FC, PC, TDS to KRISO & NIWC for testing on viewer software

The Chair noted this action item as outstanding, due to its dependency on the progress of action item PT8-08.

PT8-11 – Identify and incorporate any necessary updates in S-129 Production Specification, pertaining to S-421

The Chair and Vice-Chair had amended the S-129 Product Specification based on discussions in previous meetings. The redlines are yet to be reviewed by Hannu Peiponen (IEC/Furuno).

PT9-02 – Update “UKC analysis area” line style text to “UKCM”

The embedded text symbol had been updated to “UKCM” and submitted to NCWG for feedback.

This Action Item can now be closed. Refer to PT8-03.

PT9-03 – Set “UKC analysis area” transparency at 50% in S-129 Portrayal Catalogue

The Chair noted this as being one of the changes proposed to the NCWG for review (refer to Action Item PT8-3).

This Action Item is now closed.

PT9-04 – Update description for *UnderKeelClearancePlan*’s spatial attribute in S-129 Product Specification

The Chair and Vice-Chair have made this change in the S-129 Product Specification as redlines. The redlines will have to be reviewed by the PT.

PT9-05 – Amend PC - "no-go" and "almost no-go" areas as solid fill with 50% transparency

The Chair noted this as being one of the changes proposed to the NCWG for review (refer to Action Item PT8-3).

This Action Item is now closed.

PT9-07 – Update remarks against "*sourceRouteName*" and "*sourceRouteVersion*" attributes as per above in S-129 PS

The Chair and Vice-Chair have made this change in the S-129 Product Specification as redlines. The redlines will have to be reviewed by the PT.

PT9-08 - Review Edition 5.2.0 redlines when available, and analyse impact on S-129

The Chair noted this item as being briefly discussed in the previous PT meeting. The Chair wished to revisit this item in the 11th PT meeting to check if any S-100 Edition 5.2.0 redlines may have been missed in the last meeting.

PT9-09 – Check multiplicity of "*temporalExtent*" and "*editionNumber*" metadata in S-129 PS, and make mandatory (if not already)

The Chair confirmed that "*temporalExtent*" and "*editionNumber*" metadata were not mandatory in the S-129 Product Specification. Redlines were made accordingly, and are to be reviewed by the PT.

PT9-10 – S-98 Annex C 21.3 to be checked for any description of cancellation through same dataset filenames

Following another review of S-98 Annex C, the Chair indicated there being no guidelines for dataset cancellation through same dataset filenames. On the other hand, S-100 Part 17 provided high-level guidance.

PT9-11 – Update S-129 PS Chapter 18 with 20MB data size limit

The Chair has made this change in the S-129 Product Specification as redlines. The redlines will have to be reviewed by the PT.

PT9-12 – Schedule VTC for Validation Check discussions

The original plan was to conduct a S-129 PT meeting to discuss Validation Checks following TSM10. However, Liz Hahessey (Danish Geodata Agency) was invited to this meeting, and offered to provide an update from the Validation Subgroup, and outline what is required of the S-129 PT.

This Action Item is closed, with new action item to be raised as necessary with regards to Validation Tests.

PT10-01 – Provide S-164 subgroup with S-129 test dataset scenarios and accompanying mock-up images

The Chair had provided Jonathan Pritchard (IIC Technologies) with an early draft of the S-129 test dataset scenarios, and is awaiting feedback.

PT10-2 - Seek S-100 WG guidance on S-100 Edition 5.2.0 changes that could impact S-129

The Chair noted that Julia Powell (S-100 WG Chair) had provided the Chair with comments from the US. Based on an initial review of the comments by the Chair, there did not appear to be comments that could result in substantial changes to the S-129 Product Specification. However, further review could be conducted by the S-129 PT.

This Action Item is now closed.

PT10-03 - Add S-129 Edition 1.1.0 schema to schema server

This action item is outstanding. In the process of reviewing the S-129 Edition 1.1.0 schema, Raphael Malyankar (Portolan Sciences) noted corrections necessary to the schema. The schema XSD will need to be updated accordingly before being added to the schema server.

PT10-04 - Follow TSM10 outcomes with regards to dataset cancellation, and amend S-129 Product Specification as necessary

This Action Item was to be discussed in this meeting.

PT10-05 - Chair to enquire S-100 Working Group on direction for developing the Technical Service Specification

The production of an S-129 Technical Service Specification is being navigated by the S-129 PT. The Chair had enquired the S-100 Working Group for guidance. Julia noted that the ownership of developing the IHO framework for a Technical Service Specification should be addressed at the HSSC. Julia endeavoured to raise this at the next HSSC so that the HSSC can direct either the S-100 WG or NIPWG to oversee the TSS development in a standardised manner.

Thomas Christensen (Digital Maritime Consultancy) was invited to this meeting to provide insight into the development of the Technical Service Specification.

PT10-06 - Review S-129 SharePoint page content and remove superseded information/data

In the last PT meeting, the Chair volunteered to review the SharePoint page to remove redundant or duplicate content before the Chair and Vice-Chair can determine the future use of the page. The Chair has not yet performed the review.

PT10-07 - Discuss with Jeff Wootten on ways to streamline the management of new IHO GI Registry concepts

The Chair and Vice Chair have not yet discussed this with Jeff Wootten.

2.1 S-129 Feature Catalogue and Schema Updates

Raphael had recently identified the following areas in the S-129 Feature Catalogue and GML schema, which needed improving:

1. General compliance of GML schema to S-100 5.x
2. Inclusion of unit of measurement for numeric attributes
3. Inclusion of attribute constraints
4. Inclusion of missing attribute definitions

The Chair commented that the current S-129 Edition 1.1.0 GML schema did not completely conform to S-100 5.x, likely due to it being missed when the S-129 FC was reviewed and updated to comply with S-100 5.x.

Both the “constraints” role and “unit of measurement” (“uom”) attribute were optional in S-100 (as shown in S-100, Table 5-A-13).

The “constraints” role includes attributes such as “stringLength”, “textPattern”, “range”, and “precision”. The Chair was not entirely sure how the constraint role could be implemented (e.g. if any of the attributes such as “stringLength” (for text attributes) and “precision” (for real number) could be used selectively. The Chair asked if anyone in the PT understood the “constraints” role. There was no response, and the Chair sought to seek clarification outside the PT meeting.

Action PT11-01 – Seek clarification on “constraints” role usage

Action PT11-02 – Update S-129 PS, FC, and GML schema to include “constraints”, “unit of measurement”

Action PT11-03 – Update S-129 FC and GML schema to include missing attribute definitions

Action PT11-04 – Update S-129 GML schema for S-100 5.X compliance

2.2 Other Suggested Changes to S-129 – Separate Attribute for UKCM Plan Area Boundary

The Chair shared KMOU’s suggestion that the boundary of the UKCM plan area should be provided as a separate attribute, rather than as a spatial attribute of the *UnderKeelClearancePlan* feature. The rationale behind this suggestion is that it would be more logical and efficient to separate the dynamically updating geometry of the UKCM plan area (depending on the stage of the S-129 dataset calculation – *underKeelClearancePurpose*) from the static attributes of the *UnderKeelClearancePlan* feature (e.g. “vesselID” attribute).

Hannu Peiponen (IEC / Furuno) expressed support of this idea, which he noted as being consistent with *UnderKeelClearanceNonNavigableArea* and *UnderKeelClearanceAlmostNonNavigableArea* currently being separate features.

The Chair questioned whether it would be feasible to adopt this idea in the given timeframe for developing S-129 Edition 2.0.0. Ed Weaver (WR Systems) concurred that KMOU’s suggestion was a good idea. Assuming there were around 2 to 3 months remaining for achieving Edition 2.0.0, Ed suggested it is likely feasible to implement the necessary changes.

2.3 Other Suggested Changes to S-129 – Indication of Input Information Correctness

The Chair shared the Vice-Chair’s recent question on whether it was necessary for S-129 datasets to provide indication of data completeness (e.g. if an S-129 dataset was produced based on incomplete information on environmental or vessel conditions). While the Chair considered such indication to possibly warrant a new attribute in the future, the Chair asked if workarounds could be explored in the immediate term (e.g. use of existing metadata), noting time constraints.

The Chair presented the “comment” metadata as a possible method of indicating S-129 datasets’ “input data completeness”. Julius Moeller (AMSA) commented that the “comment” metadata may

not be appropriate. Any indication of data completeness would be critical information regarding navigational safety, and therefore should at least be portrayed on end user systems. Julius was unsure if the “comment” metadata could somehow be displayed on the end user systems. Hannu explained that metadata would only be available on end user systems via means such as pick reports. As such, the “comment” metadata could not be displayed on end user systems in a manner that provides “data completeness” indication.

Hannu further commented that the “temporalExtent” metadata could be utilised to provide functionality of determining if datasets were out of date and/or correct. To try implementing a new method would be difficult in the remaining timeframe for developing S-129 Edition 2.0.0.

Ed agreed with Julius and Hannu, and asked if the purpose of such indication as to ensure data quality, or to simply provide “general notes”. The Chair commented that it may serve as an indication of data quality, to which Ed stated that the DGWG would need to be consulted. Ed reiterated Hannu’s opinion that such implementation would be difficult to achieve in the next 2-3 months.

Hannu provided further comment that data quality check is only effective during publication of datasets at the shore-based service (e.g. datasets could be checked against “temporalExtent” as they are being sent out to end user systems). Hannu also explained that IHO agreed on S-98 being published by Dec 2025, and therefore recommended against making such changes that result in “pop-out warnings” for out-of-date data. One possible way to implement such indications/warnings would be to liaise with Jonathan Pritchard (IIC Technologies) to discuss ways to implement such S-129 specific “pop-outs” that conform to S-98. Additionally, a Technical Service Specification in the future could describe the rule in S-98 around “pop out” warning when datasets are outside the ‘temporalExtent’.

Action PT11-05 – Discuss with Jonathan Pritchard regarding addition of “pop out” warning in S-98 for S-129 datasets being outside “temporalExtent”.
--

2.4 Route Information

The Chair reiterated previous meeting discussions that:

1. S-421 is the preferred method of providing route information to S-129
 - a. The interaction between S-129 and S-421 is to be detailed in a future S-129 Technical Service Specification
2. Other methods such as RTZ files, or route information provided by data producers, must also be considered for providing route information to S-129
 - a. Remarks against “*sourceRouteName*” and “*sourceRouteVersion*” attributes should be updated accordingly, in Chapter 7.2.1.1 of the S-129 PS.

Hannu added that in the near future, RTZ format will no longer be mandatory while S-421 will be. Thus, it was important for S-129 to be prepared to be able to interact with -421.

Hannu also suggested that the “*interoperabilityIdentifier*” attribute under S-100 Edition 5.2.0 could potentially be utilised to provide the “link” between S-129 and S-421 datasets. The Chair noted that the use of “*interoperabilityIdentifier*” attribute was raised in previous S-129 PT meetings, but was considered more suited for linking data objects shared between different products. Hannu clarified the idea that “*interoperabilityIdentifier*” could be adopted by individual features. For example, the S-129 “*UnderKeelClearanceControlPoint*” features could be linked to S-421 waypoints via “*interoperabilityIdentifier*”. In other words, “*interoperabilityIdentifier*” would be useful for “linking” S-129 to not just S-421, but to other products as well. Hannu also added that there had been a proposal in a recent IEC meeting that “*interoperabilityIdentifier*” be incorporated into S-421 for the same reasons.

The data type of “*interoperabilityIdentifier*” attribute is to be text, with the actual values/content likely to be MRNs. However, it is noted that MRNs are concepts developed by IALA, and framework regarding their encoding in S-100 products is currently under development by IHO.

Action PT11-06 – Include “ <i>interoperabilityIdentifier</i> ” as attribute to S-129 features
--

The Chair proceeded to ask Hannu on the suitability of the data types for “*sourceRouteName*” and “*sourceRouteVersion*” as currently specified in the S-129 PS, in consideration of their equivalent attributes in S-421. Hannu commented that the data types were okay, but the remarks could be updated to provide further flexibility between utilising S-421 attributes and other sources of route information. The Chair shared the current redlines to the remarks. Hannu suggested further updates to the redlines, which were incorporated into the S-129 PS by the Chair. The Chair sought to clarify with Hannu if the S-421 attributes being mentioned in the remarks (*S-421.RouteInfo.routeInfoName* and *S-421.Route.RouteEditionNo*) were correct. The Chair and Hannu agreed to review following the meeting.

Action PT11-07 – Review S-421 attributes being referred to in remarks for <i>sourceRouteName</i> and <i>sourceRouteVersion</i> attributes in Section .72.1.1 of S-129 PS

3.1 Validation Tests

The Chair invited Liz Hahessey (DGA; S-100 WG Vice Chair & S-100 Validation Tests subgroup Lead) to provide the meeting participants with a brief overview of the Validation Test subgroup (VSG)’s work, the status of S-100 Validation Tests, and how they are expected to impact S-129.

Liz updated the meeting participants with the current progress with S-100 Validation Tests. Edition 1 of S-100 Framework level tests are currently planned to be delivered by 2025 (by HSSC 17). It is hoped that this timeline can allow project teams to start working with datasets and uncover issues, which can then be defined and captured as part of the Validation Tests. It was expected for Validation Tests to be continually updated in the meantime, incorporating lessons learned from S-58.

Validation Tests are product-neutral, and therefore can be performed against any applicable S-100 PS without modification. While high-level and generic tests can cover all S-100 products, not all Validation Tests would apply to all products. For example, Validation Tests for S-100 Part 10c (HDF5) are not relevant for products such as S-101.

Validation Tests encompass all elements of the S-100 Framework, such as

- Datasets
- Feature Catalogues
- Portrayal Catalogues
- Interoperability Catalogue
- Geospatial Information Registry

In other words, they cover the high-level infrastructure, as well as how all underlying components work together.

The VSG aims to reduce repetition of Validation Tests across PSs. Each PS is to only contain Validation Tests unique to the PS. For example, when enumeration allowable at S-100 level is constrained in a PS, its corresponding Validation Test should reflect the constrained enumeration. On the other hand, generic S-100 checks present in PSs should move to the S-100 level Validation Tests.

The VSG is initially focused on delivering Validation Tests that can be applied for ECDIS products or services. These are aimed for first release in 2026.

Liz explained that cross-product validation is also important, as certain product datasets are designed to be interoperable. Thus, a new level of Validation Tests was required to ensure such datasets were safe to be used together. For instance, it is currently possible to have S-101 and S-102 datasets that both pass S-100 level and product-specific tests, yet still not safe to use together. The initial focus for cross-product validation was on Water Level Adjustment (WLA).

Due to overlaps between the S-100 Validation Tests, S-98, and S-164, the VSG subgroup works closely together with the S-98 and S-164 subgroups. During S-100 WG8 (2023), the subgroups had been tasked to complete an initial list of checks. The subgroups plan to report to the S-10 OWG during S-100 WG9. However, it is noted that the initial list will not be finalised until 2025 (HSSC 17), as the list may continue to evolve.

Liz commented that there were currently different formats and naming conventions being adopted between the PS-level Validation Tests.

Resultantly, it was proposed during S-100 WG8 that the format be standardised, whereby all PSs:

- Use the same columns in their tabulated list of Validation Tests
- Use similar wording for Validation Test descriptions and details
- Standardise the first 5 or 6 columns and their order (with "Check ID" column at front), thereby:

- Helping users of the Validation Tests
- Helping validation software providers with implementing the Validation Tests
- Allow PSs to add extra columns after the standard columns, for flexibility of covering specific scenarios relevant only to the particular PS.

The VSG plans to work on distributing a standardised format for approval by HSSC 17.

The naming convention is also to be standardised by:

- Check IDs following consistent format, which starts with the product number, therefore clarifying which product the Validation Tests relate to (e.g. "S-129_0001")
- Only using numerical Check IDs (for now)

S-100 Validation Tests are to be maintained as a separate document – S-158. A proposal is being put forward to HSSC 16 to include PS-level Validation Tests as individual annexes under S-158. The rationale behind this approach is that PS-level Validation Tests can be updated without impact on the product specifications each time, *which* in turn not necessitating HSSC approval every time. Each annex corresponding to each product is to be maintained by the respective PT, which will follow its own HSSC / IHO Member State approval process.

Liz proceeded to update the meeting participants with the status of S-100 Validation Tests. There are currently 362 tests, which are being reviewed. No further progress has been made in writing new tests since S-100 WG8, and the S-100 WG is looking into funding options.

The current S-100 Validation Tests are available in two formats, in GitHub:

- MS Excel spreadsheet files
- Table displayed on landing page

To review, and propose changes to, the existing Validation Tests, issues can be opened in GitHub. Check IDs are to be provided when submitting issues.

The next steps for the VSG are to:

- Continue producing Validation Tests relating to various parts of S-100
 - New tests to be made available via GitHub
 - VSG to review and comment on new tests
 - Seek funding options
- Finalise and circulate the new Validation Tests format and naming convention
- Coordinate cross-product validation with S-98/S-164 leads, DQWG, and various S-1xx PTs
- Commence writing of S-158 document, including:
 - Initial explanation of "what is S-100 level validation?"
 - Description of different warning levels – if current levels ("critical error", "error", and "warning"), which were based on S-58 checks and ECDIS functionality, need to be reviewed to reflect S-100

For S-129, Liz requested that the S-129 PT continue to complete Validation Tests, which are only specific to S-129. Liz also suggested that the S-100 Validation Tests be checked for any duplicates to S-129 Validation Tests. If duplicates existed, these are to be removed from the list of S-129 Validation Tests. The format and naming convention, when made available, are to be implemented for the S-129 Validation Tests. Eventually, S-129 Validation Tests will need to be moved to an annex of S-158.

Action PT11-08 – Review (and add new if any) S-129 Validation Tests

Action PT11-09 – Remove duplicate Validation Tests from S-129 PS

Liz also requested that, if any new S-100 level of cross-product Validation Tests are identified as necessary, the S-129 PT is to either contact Liz, or raise an issue in GitHub.

The Chair sought clarification with Liz on whether the “format” was equivalent to the “template” that is being compiled. Liz confirmed it to be, and commented that the new format is not expected to be radically different to what people may already be familiar with – most PSs currently list their Validation Tests in the same column order – but these still needed to be standardised.

The Chair also asked if the PT could expect feedback/recommendation from the VSG. Liz commented that based on experience, it was best for PTs to report duplicates or issues to the VSG. Hence, it is the responsibility of the individual PTs to make sure there are no duplicate Validation Tests.

Liz also commented that, upon a quick review of the S-129 Validation Tests, some tests appeared to be generic, with potential to be removed from the S-129 PS – for example, tests in relation to role names in the Feature Catalogue.

Chair shared the idea of appointing a PT member to “lead” the Validation Test maintenance within the S-129 PT. Chair then asked if other PTs were approaching Validation Tests in a certain way. Liz commented that S-101 PT was the most advanced with Validation Checks (as they had S-58 tests to lean on in 1st place), and have allocated their Vice-Chair to coordinate the VCs. Liz said Raphael Malyankar wrote many tests across multiple PSs, and therefore could be a suitable candidate.

Action PT11-10 – Nominate PT member to oversee maintenance of S-129 Validation Tests

3.2 S-129 Portrayal Updates

The Chair presented mock-up images depicting recently proposed changes to S-129 feature portrayals, which had been submitted for NCWG’s review. These proposed changes included the following:

1. 50% opacity applied to *UnderKeelClearanceNonNavigableArea* and *UnderKeelClearanceAlmostNonNavigableArea* features, to mitigate visual conflicts with other layers/features.
In particular, the Chair noted potential colour conflicts to route information. For example, the colour token APLRT (alternate planned route) consisted of the same colours as *UnderKeelClearanceAlmostNonNavigableArea*. In such cases, the transparency could help with discerning *UnderKeelClearanceAlmostNonNavigableArea* feature from similarly coloured features.
2. Addition of a circle around the bowtie symbol for *UnderKeelClearanceControlPoint* feature. The rationale behind this proposal was that a bowtie by itself was more susceptible to becoming obscured by other features, such as route lines.

3. A new *LineStyle* for portraying the boundary of the *UnderKeelClearancePlan* area. This *LineStyle* consists of:
 - a. An embedded “UKCM” text symbol
 - b. Magenta colour (CHMGD)
 - c. 50% opacity

The corresponding changes to the S-129 Portrayal Catalogue were implemented by Gyeongmin (Bluemap). Other S-129 PC changes included the addition of a “plain version” *LineStyle* for the *UnderKeelClearancePlan* area boundary, thereby allowing end users to select between symbolised and “simple” portrayal for the features.

Gyeongmin’s S-129 PC updates were committed to the S-129 Product Specification GitHub repository.

The S-129 PC change proposals were promulgated to NCWG members on April 16th, 2024.

The Chair also presented sample S-129 test data, as loaded on the “S-100 Simple Editor” software, to illustrate the S-129 PC changes. The Chair shared observation that the *UnderKeelClearancePlan* area boundaries for some datasets can be pixelated, not smooth, therefore looking messy. Resultantly, depending on zoom levels, different line segments could “break” and be displayed inconsistently. Ed Weaver asked if the line segment “break” issue persisted across different zoom levels. The Chair demonstrated that the issue presented at lower zoom levels, whereas the issue didn’t persist at high zoom levels. Ed questioned whether the display of the feature should be bound by min/max zoom levels, to which the Chair commented he could explore this with Gyeongmin.

Another behaviour observed by the Chair was that the *UnderKeelClearancePlan* area boundary appeared to “point outward”, and the Chair endeavoured to pursue this further with Gyeongmin.

Action PT11-11 – Review apparent S-129 portrayal issues
--

4.1 Technical Service Specification

Thomas Christensen (Digital Maritime Consultancy) joined the meeting to provide introduction to the Open Digital Incubator initiative, as well as to provide comments on developing a Technical Service Specification for the exchange of S-129 data. Thomas participates in various working groups and committees in IALA and IHO and is heavily involved in the Maritime Connectivity Platform project.

Thomas commented that there is consensus between IALA and IHO to use IALA Guideline 1128 (“Specification of e-Navigation Technical Services”) as the guideline for describing services that exchange S-100 data. IALA Guideline 1128 also aligned with the IMO-defined Maritime Services.

Thomas explained that IALA Guideline 1128 describes services on 3 different levels:

1. Service Specification
 - High-level description of services
 - Technology-agnostic – does not prescribe specific technology to be used for data exchange
 - Includes references to data models (e.g. S-129)
2. Service designs (associated with a particular Service Specification)
 - Technical-level description – describing/referencing specific technologies with which data can be exchanged

- There can be one or more service designs associated with a Service Specification
- 3. Service instance descriptions
 - Describe actual service providers, which provide the data
 - Describe how data are provided - data endpoints, service coverage for a provider etc.

An example of a service design is SECOM, which is a technical standard for exchanging data, including S-100. SECOM is becoming the standard to exchange route information (S-421) in ECDIS. However, SECOM is data-agnostic, and therefore can be used to exchange any S-100 data.

Currently, service specifications are being developed for:

- S-124 Navigational Warnings
- S-125 and S-201 (AtoN information)
- S-212 (VTS services)
- S-421 (route exchange)

The initial designs for the service specifications are based on service designs using SECOM. However, additional service designs may later be included.

To finalise a Service Specification, trials and experiments of the draft Service Specification is needed. The Open Digital Incubator initiative was therefore launched to implement early Service Specification versions in testbeds. Findings from such testbeds, in consideration of such aspects as usability and interoperability, could then be fed back into the Service Specification development.

The scope of the Open Digital Incubator initiative includes:

- Collaboration and knowledge-sharing between organisations, to accumulate competence
- Development of components, shared as open source (e.g. SECOM library)
 - Can be used for implementing SECOM on both service provision side and service consumption side

Currently, the following services are running

- 1 x AtoN service - a simple web client through which S-125 data can be delivered through SECOM
 - Currently one provider; no possibility of testing interoperability yet
- 3 x Navigation Warning services – Canada, Finland, and Australia
 - Can test on different platforms
 - Can test consumption of different services from different service providers, on the same platforms, on which interoperability can also be tested
 - Maritime Connectivity Platform used, as required by SECOM, for service discoverability and authentication of service providers/consumers

Meanwhile, traffic clearance service is currently being implemented.

The Chair sought clarification with Thomas on whether a similar process would be followed for a developing a UKCM Service Specification, whereby an initial draft service specification prepared, then tested to be further developed. Thomas confirmed this general process, and emphasised that the Open Digital Incubator initiative consists of technical experts, who are experienced with implementing service specifications, as well as the SECOM standard and the usage of the Maritime Connectivity Platform. Therefore, the knowledge and expertise can be utilised for developing new service

specifications. On the other hand, the S-129 PT would need to provide the domain knowledge of S-129, with which the high-level details of the service specification can be written.

The Chair also sought to confirm with Thomas if participants of the Open Digital Incubator initiative were focused on the exchange of data, rather than the data model itself. Thomas confirmed that the initiative indeed was focused on the data exchange, i.e. the service specifications, and not on the maintenance of PSs.

The Chair then asked Thomas if there were other services, for which service specifications were planned to be developed. Thomas mentioned S-131 (Marine Harbour Infrastructure), as well as data such as weather or currents, as being considered for service specifications, but these do not yet exist. Thomas added that the service specification development for weather warning services would be a “nice to have”, as it would complete what is encompassed by IMO’s Maritime Service 5 (Maritime Safety Information).

The Chair also enquired if Thomas foresaw any challenges with S-129, due to the frequent exchange of data in certain use cases. Thomas commented that, based on the technologies being used, frequent data updates were not expected pose issues.

4.2 Dataset Cancellation

The Chair recalled previous S-129 PT meetings’ discussions that:

1. Certain metadata needed to be made mandatory in S-129 to ensure dataset cancellation occurs as expected.
2. The S-129 PT were to closely follow the outcomes of TSM10, during which discussions were expected to take with regards to dataset cancellations.

The Chair shared with the PT that TSM10 discussions appeared to focus on concerns around the traceability of data producers’ digital signatures in fileless cancellations, as they are transferred from data producers to RENCS, and then to end users. The TSM10 conclusions appeared to indicate current S-100 provides sufficient traceability.

The Chair continued by outlining different dataset cancellation methods for S-129 as follows, for comments by meeting participants.

	Self-Cancellation	Cancellation Update (via update dataset)	Fileless Cancellation
Metadata used	<i>temporalExtent</i>	<i>editioNumber</i> <i>issueDate</i>	S100_Purpose
Other requirements		<ul style="list-style-type: none"> • Same filename as dataset to be cancelled • <i>issueDate</i> of update dataset is later than <i>issueDate</i> of dataset to be cancelled • <i>editioNumber</i> = 0? 	All mandatory metadata set to same values as original dataset

The Chair confirmed that *issueDate* metadata was already compulsory in the S-129 PS, while *temporalExtent* and *editioNumber* were updated to mandatory metadata, currently as redlines for S-120 PS Edition 1.2.0.

It was particularly noted that, for cancellation updates (by update datasets), a cancellation dataset is to be provided with an *editioNumber* of 0, according to S-100 Part 17. However, S-100 Part 17 also specifies the *editioNumber* metadata as starting from 1. While this may not incur any changes to the S-129 PS itself, it was still worth considering.

Action PT11-12 – Seek clarity around <i>editioNumber</i> being set to 0 for cancellation datasets.

4.3 Other Business – S-129 data size

Ed Weaver asked what maximum data sizes were being observed for S-129 test datasets. The Chair explained that currently available test datasets were relatively small datasets in the range of 300 to 400 KB, but there had been older version datasets of up to 2 to 3 MB. The Chair was not sure if dataset sizes could become significantly larger but commented that data sizes depended on the extent of the areas being covered. The Chair reiterated that the S-129 PS was updated to specify a maximum data size limit of 20 MB, based on other S-1xx products prescribing the same. Ed Weaver agreed that the 20 MB upper size limit was a direction given by the S-100 WG in the past. Ed further suggested that it would be beneficial for the PT identify the coverage extent required to reach a 20MB S-129 dataset file size.

Action PT11-13 – Determine area extent required to reach 20MB
--

4.4 Other Business – further S-421 discussions

Ed Weaver noted there being no mention of an S-421 development timeline, during earlier discussions pertaining to route information.

Ed further commented that the IEC TC 80 WG recently had a meeting, focused on S-421. One of the issues discussed during the TC 80 meeting was that the S-421 PS currently did not address partial updates to a route (e.g. update to a particular leg of a route). While this need to address partial route updates had potential to prolong S-421 development, there was no mention of a specific development timeline during the TC 80 meeting.

Given this possible uncertainty, Ed suggested that S-129 need to be able to cater for both S-421, as well as other formats such as RTZ. The Chair agreed with this suggestion, which aligned with earlier discussions around ensuring the S-129 PS allows this flexibility.

The Chair asked Ed if a partial route change would be achieved through the exchange of a new S-421 dataset. Ed explained that the current S-421 PS stipulates an entire new dataset being provided. However, updates to S-421 are being explored to allow for partial route updates through update datasets.

The Chair noted that when S-421 is used to provide route information for S-129, an S-421 dataset would be provided as a support file as part of the exchange set. If partial route updates were to occur, then the inclusion of corresponding update datasets as support files, and their impact, needed to be considered for S-129. Ed added that the triggering mechanism for partial route changes, and their input into S-129 computation, needed to be considered. This triggering mechanism could possibly be provided by an interoperability catalogue under S-98, containing an S-129 dataset and an S-421 dataset.

Action PT11-14 – Enquire IEC/Hannu Peiponen about how S-421 partial updates are envisioned to occur, and their likely impact on S-129.

4.5 S-129 Sharepoint page

Ed Weaver asked the Chair if the S-129 Sharepoint page was still being used. The Chair explained that the Sharepoint page was not completely discarded. There were plans to review the Sharepoint page to check what content could be removed (as deemed superseded by GitHub) or retained.

Ed asked where the latest S-129 PS redlines were available, as the copies available on either Sharepoint or GitHub did not appear to be the most recent. The Chair commented that, while a copy was uploaded to the Sharepoint page, there appeared to be access limitations as per AMSA requirements, which the Chair endeavoured to follow up with the Vice-Chair. The Chair also noted that, while GitHub provided “word-diff” functionalities, these did not provide collaborative document management. The Chair sought to share the S-129 PS, once a new revision is ready, with the S-129 PT.

Acton PT11-15 – Complete update S-129 Product Specification, as per action items PT8-11, PT9-04, PT9-07, PT9-09, and PT9-11, as well as other necessary changes.

4.6 Next Meetings

The Chair proposed the next S-129 PT meeting to be held as VTC, tentatively on June 11th.

List of Participants:

Name	Organisation
Jason Rhee – Chair	OMC International
Lindsay Perryman – Vice Chair	AMSA
Collin Moorefield	GeoNavigation Technologies
Ed Weaver	WR Systems
Gyeongmin Jo	Bluemap
Hannu Peiponen	IEC / Furuno
Hoyeon Cho	KMOU
Hyoseung (Kevin) Kim	KMOU
Ivan Guimaraes	Diretoria de Hidrografia e Navegação
Joseph Palazzo	GeoNavigation Technologies
Julius Moeller	AMSA
Kevin Kim	KMOU
Lance Round	WR Systems
Liz Hahessy	Danish Geodata Agency
Thomas Christensen	Digital Maritime Consultancy

Draft Agenda for the S-129 Project Team Meeting No. 11 (30 April 2024 – 01 May 2024)

Venue:

VTC (via GoToMeeting)

Time:Day 1: April 30th, 1130 – 1430 GMT(GoToMeeting link: <https://meet.goto.com/433945837>)Day 2 (if needed): May 1st, 1130 – 1430 GMT(GoToMeeting link: <https://meet.goto.com/317239557>)**Chair:** Jason Rhee (OMC International)**Vice-Chair:** Lindsay Perryman (AMSA)

Time (UTC) Tuesday April 30 th (1130– 1430 GMT)		
1130 – 1200	Session 1 Welcome and introductions Review of meeting agenda Review of previous action items	(All)
1200 – 1245	Session 2 Necessary S-129 updates <ul style="list-style-type: none"> • FC & GML schema Suggested S-129 updates <ul style="list-style-type: none"> • Separate feature for UKCM plan area • “Input data correctness” indication 	(All)
1245 – 1300	Break	
1300 – 1345	Session 3 S-129 Portrayal updates S-129 Dataset cancellation S-129 TDS	(All)
1345 – 1430	Session 4 Routing Technical Service Specification	(All) (Thomas Christensen)
Time (UTC) Tuesday May 1 st (1130– 1430 GMT) -if needed		
1130 – 1200	Session 1 Welcome and introductions Review of Day 1 discussions Review of Day 2 meeting agenda	(All)
1200 – 1245	Session 2 Validation Checks	(All)
1245 – 1300	Break	
1300 – 1345	Session 3 PS changes review Other business	(All)
1345 – 1430	Session 4 New action items	(All)

Time (UTC)	Tuesday April 30 th (1130– 1430 GMT)	
	Review of timeline Next meetings	

Project team members are requested to provide comments or change proposals for any of the agenda items to the PT Chair by no later than 29th April 2024.

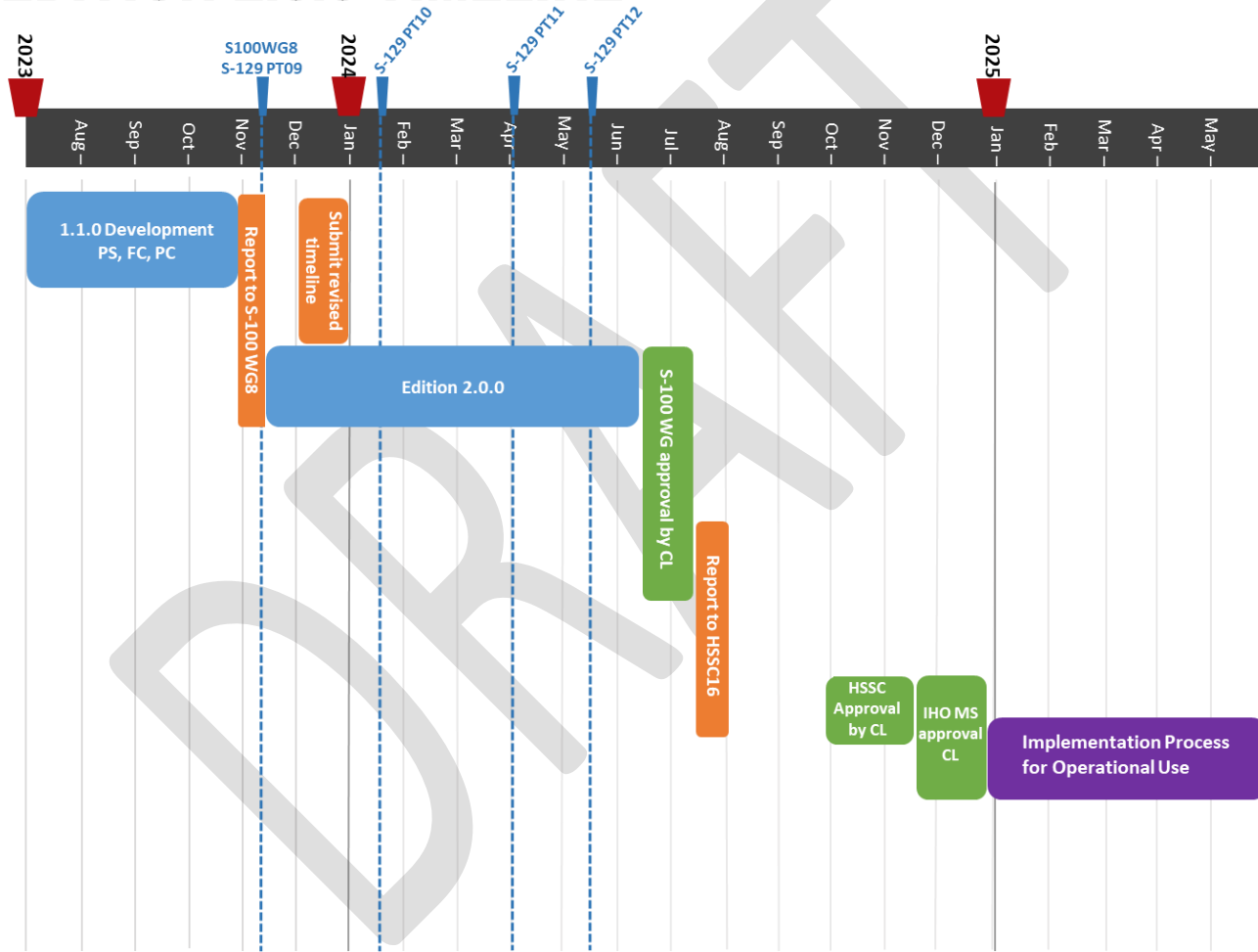
PT Chair: Jason Rhee - j.rhee@omcinternational.com

DRAFT

Outstanding Action Items

Action	Description	Assignee	Status
PT8-03	Obtain feedback from Mikko (NCWG) and Izzy (KHOA) regarding portrayal of: <ul style="list-style-type: none"> UKC non-navigable area UKC almost non-navigable area UKCM area boundary 	Jason R	In Progress
PT8-08	Produce test datasets based on S-129 Edition 1.1.0	Jason R, Chris H	In Progress
PT8-10	Provide 1.1.0 FC, PC, TDS to KRISO & NIWC for testing on viewer software	S-129 PT / Jason R	Outstanding
PT8-11	Identify and incorporate any necessary updates in S-129 Production Specification, pertaining to S-421	Jason R, Hannu P	Outstanding
PT8-12	Provide S-129 SharePoint page access to PT members requesting access	Jason R, Lindsay P	Outstanding
PT9-04	Update description for <i>UnderKeelClearancePlan</i> 's spatial attribute in S-129 Product Specification	Jason R	Outstanding
PT9-07	Update remarks against " <i>sourceRouteName</i> " and " <i>sourceRouteVersion</i> " attributes as per above in S-129 PS	Jason R, Lindsay P	In Progress
PT9-08	Review Edition 5.2.0 redlines when available, and analyse impact on S-129	Jason R / S-129 PT	In Progress
PT9-09	Check multiplicity of " <i>temporalExtent</i> " and " <i>editionNumber</i> " metadata in S-129 PS, and make mandatory (if not already)	Jason R	In Progress
PT9-10	S-98 Annex C 21.3 to be checked for any description of cancellation through same dataset filenames	Jason R	In Progress
PT9-11	Update S-129 PS Chapter 18 with 20MB data size limit	Jason R, Lindsay P	Outstanding
PT10-01	Provide S-164 subgroup with S-129 test dataset scenarios and accompanying mock-up images	Jason R / S-129 PT	In Progress
PT10-03	Add S-129 Edition 1.1.0 schema to schema server	Raphael M	
PT10-04	Follow TSM10 outcomes with regards to dataset cancellation, and amend S-129 Product Specification as necessary	Jason R	In Progress
PT10-05	Chair to enquire S-100 Working Group on direction for developing the Technical Service Specification	Jason R	In Progress
PT10-06	Review S-129 SharePoint page content and remove superseded information/data	Jason R / Lindsay P	In Progress
PT10-07	Discuss with Jeff Wootten on ways to streamline the management of new IHO GI Registry concepts	Jason R / Lindsay P	In Progress

EDITION 2.0.0 TIMELINE



Annex E

11th S-129 UKCM Project Team Meeting - List of Action Items:

Action	Description	Assignee
PT11-01	Seek clarification on “constraints” role usage	Jason R
PT11-02	Update S-129 PS, FC, and GML schema to include “constraints”, “unit of measurement”	Jason R
PT11-03	Update S-129 FC and GML schema to include missing attribute definitions	KMOU / Jason R
PT11-04	Update S-129 GML schema for S-100 5.X compliance	KMOU / Raphael M / Jason R
PT11-05	Discuss with Jonathan Pritchard regarding addition of “pop out” warning in S-98 for S-129 datasets being outside “ <i>temporalExtent</i> ”	Jason R
PT11-06	Include “ <i>interoperabilityIdentifier</i> ” as attribute to S-129 features	KMOU / Jason R
PT11-07	Review S-421 attributes being referred to in remarks for sourceRouteName and sourceRouteVersion attributes in Section .72.1.1 of S-129 PS	Jason R / Lindsay P / Hannu P
PT11-08	Review (and add new if any) S-129 Validation Tests	S-129 PT
PT11-09	Remove duplicate Validation Tests from S-129 PS	S-129 PT
PT11-10	Nominate PT member to oversee maintenance of S-129 Validation Tests	Jason R / S-129 PT
PT11-11	Review apparent S-129 portrayal issues	Bluemap
PT11-12	Seek clarity around <i>editionNumber</i> being set to 0 for cancellation datasets.	Jason R
PT11-13	Determine area extent required to reach 20MB	S-129 PT / Jason R
PT11-14	Enquire IEC/Hannu Peiponen about how S-421 partial updates are envisioned to occur, and their likely impact on S-129	Jason R
PT11-15	Complete update S-129 Product Specification, as per action items PT8-11, PT9-04, PT9-07, PT9-09, and PT9-11, as well as other necessary changes.	Jason R / Lindsay P