

## 18<sup>th</sup> S-123 Marine Radio Services Task Group (S-123TG) Meeting October 19, 2023 – Worldwide

[Annex A: Agenda](#)

[Annex B: List of Attendees](#)

[Annex C: List of Action Items](#)

[Web Resources](#)

[NIPWG Wiki: S-123](#)

[NIPWG Product Specifications Website](#)

### 1.0 Opening Remarks

BG opened the meeting and welcomed the participants.

- BG invited James Weston and Stefan Engström from the NIPWG Chair Team, as well as Ilia Maslov from Bureau Veritas Marine & Offshore to fulfill [NIPWG-10 Action Item 36](#): “VTC to be arranged to assess BV’s proposals and to be amalgamated with other S-123 changes and shared with NIPWG. S-123TG, Chair Team and IM.”
- For the sake of time, BG briefly introduced the participants.

### 2.0 Approval of Agenda

BG modified agenda topic 5.1 and 5.2 to match the action item numbering from the [NIPWG-10 version 1.0 minutes](#).

### 3.0 Approval of S-123TG17 Minutes

BG presented the second draft of the meeting minutes with the following modifications:

- [Point 4.0](#): Additional information provided by SJC for TG16/12.
- [Point 5.1](#): Corrected point made by SJC.
- [Point 7.2](#): Added Oct 2 as holiday for CAN. Added Oct 11, 12 as possible meeting days.

The group approved the second draft of the meeting minutes as the final version.

**Action Item 01: BG to send finalized S-123TG17 minutes to the group.**

**Action Item 02: RM to upload finalized S-123TG17 minutes to the NIPWG Wiki.**

**Action Item 03: BG to send finalized S-123TG17 minutes to be uploaded to the NIPWG website.**

### 4.0 Review of Action Items from S-123TG17

Action Item	Action Description	Status
TG9/04	JP to provide an updated description for the DCEG regarding GMDSSArea (emphasis on administrative boundaries) <a href="#">(Wait for discussion at S-100WG in regard to overlapping coverage issue)</a>	Ongoing
TG16/08	BG to bring up at a future S-123TG meeting the review of the DQWG recommended template to determine which sections apply to S-123.	Ongoing
TG17/01	BG to send finalized S-123TG16 minutes to the group.	Completed 2023-09-05
TG17/02	RM to upload finalized S-123TG16 minutes to the NIPWG Wiki.	Completed 2023-10-16
TG17/03	BG to send finalized S-123TG16 minutes to be uploaded to the NIPWG website.	Completed 2023-10-06
TG17/04	BG to review and clean up the feedback document and send to group for review.	Completed 2023-09-05

Action Item	Action Description	Status
TG17/05	<b>For everyone</b> to review the conclusions regarding the proposed editorial changes captured in the feedback document.	<b>Ongoing</b>
TG17/06	<b>BG</b> to add BV suggestion to the feedback document and note that this will be discussed further at NIPWG-10.	<b>Completed</b> 2023-09-04
TG17/07	<b>SJC</b> to verify that the radiocommunications remodelling proposal presented during NIPWG 2023 VTC 2 in June 2023 includes all aspects to be remodelled.	<b>Completed</b> 2023-08-29
TG17/08	<b>BG</b> to repackage the proposals and feedback document together to send to the task group for a final review before submission to NIPWG.	<b>Completed</b> 2023-09-05
TG17/09	<b>For everyone</b> to do a final review of the proposals and feedback document before being submitted to NIPWG.	<b>Ongoing</b>
TG17/10	<b>BG</b> to send an email to the task group to schedule S-123TG18.	<b>Completed</b> 2023-09-25
TG17/11	<b>BG</b> to send a first draft of the S-123TG17 minutes to the group for review.	<b>Completed</b> 2023-09-05

## 5.0 Follow-Up on NIPWG-10 Meeting

BG thanked SJC for taking on the role of S-123TG representative during the NIPWG-10 meeting.

### Summary of Agenda Item 11.2: S-123 – Marine Radio Services

- Discussion regarding NAVTEX service areas: “Limits of these areas are not often agreed or shown. There is a risk that these service areas will be different between producers. The NAVTEX service areas are defined from the states perspective of where these areas are being broadcast too. There are overlaps and disagreements between nations. It is then the mariner’s job to work out who they listen and report to. It is not within S-123 to take into the political side of the NAVTEX coverages, just purely the intended transmission area.”
- Proposal to include NAVDAT in S-123. (This was also brought up during NIPWG-9.)
- Discussion regarding overlapping radio waves: “Radio waves can overlap each other and extend into neighbouring countries, therefore the ECDIS needs to know if it should cut the presentation of the radio waves at the edge of the national boundary or if its allowed draw them in full. Conclusions from previous discussions was that radio waves can overlap each other and the ECDIS can ‘merge’ the layers such as Canadian Radio area coverages will overlap into US waters and vice versa and can be staggered on top of each other in the ECDIS.”
  - o NIPWG-10 Action Item 34: Input paper to be submitted (by IEC) to S-100WG (for S-100WG8) recommending, with the support of NIPWG, a statement that overlapping radio coverage areas is possible and a statement be added to S-98 Annex C.
- The NIPWG Chair EM commended the S-123TG for the work they have accomplished over many meetings.

### Additional Action Items

**NIPWG-10, Action Item #07:** Task Groups to develop key performance indicators for each of the product specifications to also feed into Action item 40.

(Assigned: Task Group Leads, Due: NIPWG 2023 VTC 3)

**Action Item 04:** **BG to look into NIPWG-10 Action Item #07 regarding the development of key performance indicators for the S-123 Product Specifications.**

**NIPWG-10, Action Item #08:** Task Groups to provide point of contact for S-64 and S-98.  
(Assigned: Task Group, Due: NIPWG 2023 VTC 3)

**Action Item 05:** **BG to bring up at a future S-123TG meeting regarding NIPWG-10 Action Item #08 about providing a point of contact for S-64 and S-98.**

**NIPWG-10, Action Item #09:** Task groups to provide test data sets to aid S-164 development.  
(Assigned: Task Group Leads, Due: When available)

**Action Item 06:** **BG to provide CCG S-123 test data to aid S-164 development.**

**NIPWG-10, Action Item #10:** Task group leads to read through and check the current draft of S-98 Annex C and comment/prepare input paper to be defined and published in S-98.  
(Assigned: Task Group Leads, Due: As soon as possible)

**Action Item 07:** **BG to look into NIPWG-10 Action Item #10 regarding the current draft of S-98 Annex C.**

**NIPWG-10, Action Item #44:** NIPWG to draft their own working group level milestones.  
(Assigned: Chair Team and Task Group leads, Due: NIPWG 2023 VTC 3)

**Action Item 08:** **BG to look into NIPWG-10 Action Item #44 regarding the drafting of NIPWG level milestones.**

#### 5.1 NIPWG-10, Action Item #36: VTC to be Arranged to Assess BV's Proposals and to be Amalgamated with Other S-123 Changes and Shared with NIPWG

Assigned: S-123TG, Chair Team and Ilia Maslov (BV), Due: NIPWG 2023 VTC 3

During NIPWG-10: "Support given that S-123 covers this type of information and should be tried to be integrated into the product specification. There needs to be an understanding of what connectivity is available along a route. Connectivity is needed for many of the products within Phase 1; S-104, S-111 and S-124. Communication providers should be contacted to share data so that connection availability is made for passage planning and during route execution."

IM showed the [presentation from NIPWG-10](#). (There was also an [input paper](#).)

IM mentioned the stakeholders so that any proposals should be shown to them to receive their comments and feedback.

#### Current proposal by IM:

Here are definitions from the last version of the BV draft of the class rule note for the ship-shore communication systems (also attached):

- Connectivity coverage chart: graphical representation of the geospatial data showing the boundaries of the electromagnetic signal coverage which enables the connectivity for the ship-shore communication system and which shows the Quality of Service parameters.
- Communication provider: provider of information transmission services between communication devices on board and terrestrial networks.
- Communication device: radio receiving or transmitting device, e.g. 5G antenna with the associated modem.
- Guaranteed Bit Rate (GBR) subscription: subscription for using an information transmission path for which the capacity, latency and bit error rate are guaranteed by the external communication provider.
- Latency: round trip time of a data frame between two nodes which may include the hosts of the data transport agents on board and on shore.

- Latency threshold: threshold of latency beyond which a loss or degradation of the function of the connected system dependant on the ship-shore communication may occur.
- Round Trip Time (RTT): time measured from the transmission of a message at the sender until the sender receives a response from the receiver, excluding any time for processing in the receiver.
- Ship-shore communication system: computer-based system designed to provide a data communication between the on-shore and shipboard servers (ship to shore and shore to ship). The system includes at least one communication device, a communication management software and a gateway to the ship’s network.

The objects below can be nested in a parent object “Subscription.” It will facilitate grouping them for commercial purpose by the operators.

Land-based cellular communication:

Propose a set of basic geometries to portray the signal of strength for 4G, 5G, 6G networks over sea and river surfaces and parameter attribution

- Circular areas, Point object with a radius
- Concentric areas, XOR of circular areas defined by point objects with radii
- Sectors, Point objects with limiting angles
- Polygonal, Polygonal areas based on a sequenced set of points

Satellite communication:

Propose a set of basic geometries to portray the signal of strength for satellite networks over sea and river surfaces and parameter attribution

- Circular areas for spotbeam coverage, Point object with a radius
- Concentric areas, XOR of circular areas defined by point objects with radii
- Polygonal, Polygonal areas based on a sequenced set of points
- Global polygonal, Polygonal areas based on a sequenced set of points

Attributes for geometry	Examples, data may contain	Definitions
QoS parameters per subscription, e.g. subscription type (Guaranteed Bit Rate or Best Effort or a specific priority number), throughput of uplink and downlink, latency, packet error loss rate (as per 3GPP documents), signal strength in dBm	Scalars attributed to the geometry	<u>Quality of Service (QoS) parameters</u> : scalars used as a reference to a specific packet forwarding behaviour in a data flow of a cellular network’s communication service subscription (Service Level Agreement), e.g. packet loss rate, latency. <u>Throughput (bandwidth)</u> : Maximum effective transfer rate for the data [Mbps, Kbps]. <u>Uplink rate</u> : transfer rate from the ship to the shore. <u>Downlink rate</u> : transfer rate from the shore to the ship.
frequency ranges,	Scalars attributed to the geometry	Ranges of the electromagnetic spectrum in which the transmission is provided
reliability of communication	[0-1] (← BG note: This refers to probability, not binary.)	<u>Reliability of communication</u> : a measure of probability for communication break [0-1]

Attributes for geometry	Examples, data may contain	Definitions
susceptibility to jamming	Group attribution: 1=high, 2=medium, 3=low	This one is not yet clear to be defined, this could be an indication of the groups of susceptibility depending on the signal strength, availability of the frequency ranges protected by the national authorities with licensing policies, proximity to areas with illegal transmitters or electronic warfare. To be defined by MNOs and satcom operators.
susceptibility to environmental exposure	Variable list of the attributes, e.g. 'heavy rain'	This one is not yet clear to be defined, this could be an indication of the groups of susceptibility depending on impact of the environment, e.g. heavy rain impacting 5G reception, to be defined by MNOs and satcom operators

RM and EM in agreement that this can be done by adding a new feature class. The details on how this can be done will need further discussion.

JY brought up what if there is a delay in providing the information of the service.

- This is a discussion between the Satcom and Mobile Network Operator and support from the local hydrographic office.

NS clarified that for autonomous ships: if they are degree 3, they need to be ready for degree 4. So as soon as there is a disruption of the service, the autonomous ship falls from a degree 3 to a degree 4.

- But this is outside the remit of this task group.

Bureau Veritas is a front runner in this topic, and so it is not yet discussed at the IMO level.

EM said that it is up to each national authority to determine whether they will provide this information.

- As much as this is for autonomous ships, manned ships would also be interested in knowing whether there is coverage.
- The goal of the task group is to provide the means to capture this information in a way that is intelligible for route planning.

RM brought up the question of responsibility and authority of the information.

SJC prepared some slides based on IM's proposal.

- IM noted the presentation as it seemed promising.
- EM noted that what was shown is conceptual, so more work is to be done to match up more with what IM is proposing.

**Action Item 09: SJC to send slides to the group regarding how to incorporate BV's proposal.**

BG proposed a smaller sub-group to work with IM on this: SJC, EM.

- Once work has been done, then a more focused meeting with the other stakeholders can be held.

**Action Item 10: IM, SJC and EM to meet to work more on BV's proposal.**

IM would like a user representative to contact the operators and that there is work on IHO's end.

**Action Item 11: BG and EM to make contact with the operators, as per IM's request, to demonstrate that work is being done on IHO's end regarding BV's proposal.**

5.2 NIPWG-10, Action Item #33: Investigate How You Would Capture a (NAVAREA/METAREA) Sub-Area in S-123

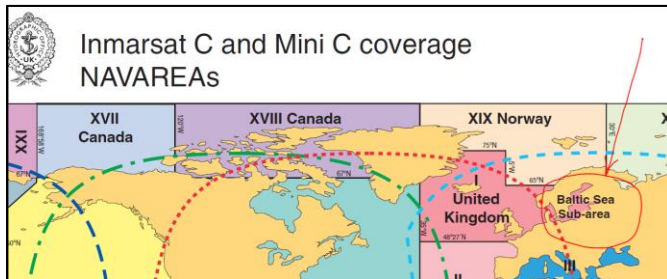
Assigned: Chris Gill (UKHO) and S-123TG, Due: NIPWG 2023 VTC 3

Question from Chris Gill: I noticed that there is NAVAREA and METAREA in the product specifications, and it was discussed as to whether the subarea would just be treated as a NAVAREA, or the subarea would be a group of service areas making up the Baltic.

I'd like your input as to whether a subarea attribute is needed for NAVAREA's or whether its adequately covered in the standards.

Suggestion from JY:

I'm hoping that the answer is that the NAVAREA subarea Ib can be encoded in a similar way to the METAREA subarea attribution previously discussed? However, if not, then my opinion is that we should consider this need. Sweden is the NAVAREA Coordinator for the Baltic sub-region, with all the listed Baltic countries reporting their Nav/Met Warnings for the region to the Swedish Maritime Administration (Sjofartsverket) directly, rather than the UKHO (NAVAREA I Coordinator).



Just for your information, the UKHO hold both NAVAREA I and Ib as separate objects within our database. I have attached a PDF file of each of the entries to show how we currently portray them in ALRS Vol.5.

**(Baltic Sea Sub-Area Coordinator)**  
 Swedish Maritime Administration  
 BALTICO  
 SE-601 78 NORRKÖPING  
 Sweden  
 Telephone: +46 711 630605  
 email: ufs@sjofartsverket.se  
 Website: www.sjofartsverket.se/en/services/ntm---notices-to-mariners/navigational-warnings  
 Warning Url: www.sjofartsverket.se/en/services/ntm---notices-to-mariners/navigational-warnings

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TERRITORY	TELEPHONE	FACSIMILE	EMAIL/OTHER
Denmark	+45 72850370		mas@sok.dk vagts@dma.dk <a href="https://dma.dk/safety-at-sea/navigational-information/nautical-information">https://dma.dk/safety-at-sea/navigational-information/nautical-information</a>
Estonia	+372 6205665		navinfo@transpordiamet.ee <a href="http://www.transpordiamet.ee">www.transpordiamet.ee</a> <a href="https://transpordiamet.ee/NTM_(Estonian_Notices_to_Mariners)">https://transpordiamet.ee/NTM_(Estonian_Notices_to_Mariners)</a> <a href="https://gis.vta.ee/navhotiastustehtalus/et.html#warnings">https://gis.vta.ee/navhotiastustehtalus/et.html#warnings</a> (Navigational Warnings)
Finland	+358 204 486400		turku.radio@fta.fi <a href="https://extranet.liikennevirasto.fi/pooki_www/merivaroituksset/list_en.html">https://extranet.liikennevirasto.fi/pooki_www/merivaroituksset/list_en.html</a>
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Russian Federation	+7 812 7175900		unio_main@mil.ru (General contact address) unio_navareaa@mil.ru (navigation warning providing purpose only)
Sweden	+46 771 630685 (H24)		swedentraffic@sjofartsverket.se <a href="http://www.sjofartsverket.se/en/services/ntm---notices-to-mariners/navigational-warnings">www.sjofartsverket.se/en/services/ntm---notices-to-mariners/navigational-warnings</a>

<b>NAVAREA I (United Kingdom)</b> United Kingdom National Hydrographer United Kingdom Hydrographic Office Admiralty Way TAUNTON Somerset TA1 2DN United Kingdom Telephone: +44(0)1823 353448 Fax: +44(0)1823 322352 email: navwarnings@ukho.gov.uk Warning Url: https://www.admiralty.co.uk/maritime-safety-information/radio-navigational-warnings					
<b>National Coordinators</b>					
TERRITORY	TELEPHONE	FACSIMILE	EMAIL/OTHER		
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France (PREMAR Manche)	+33 2 33926523	+33 2 33926077	comnord-n3.adj-chef-bureau.tct@intradef.gouv.fr comnord-n3.infonaut.adj.tct@intradef.gouv.fr (deputy) www.premar-manche.gouv.fr		
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Ireland	+353 16620922	+353 16620795	mrccdublin@irishcoastguard.ie coastguardmcc@dtas.gov.ie		
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Norway	+47 22422331	+47 22410491	navco@kystverket.no www.kystverket.no		
United Kingdom	+44 1823 353448	+44 1823 322352	navwarnings@ukho.gov.uk		
<b>EGC SAFETYNET SYSTEM</b>					
NAVAREA	Issuing Country	Times (UTC)	METAREA	Issuing Country	Times (UTC)
I	United Kingdom	0530, 1730 (AOR-E, IOR)	I	United Kingdom	0930, 2130 (AOR-E) <sup>1</sup> on receipt (AOR-E) <sup>2</sup>
<sup>1</sup> See EGC MSI SYSTEM NEW SCHEDULE TABLE (ADP main menu - reference section). <sup>2</sup> Warnings only. See EGC MSI SYSTEM NEW SCHEDULE TABLE (ADP main menu - reference section).					

Area of Responsibility for High Seas (GMDSS)				
METAREA	Issuing Service	Preparation Service	Area LES for a) Scheduled broadcasts b) Unscheduled broadcasts	Notes
I	United Kingdom	United Kingdom, Norway	a) Burum AOR-E b) Burum AOR-E	1,2,3
<sup>1</sup> Full coverage via SafetyNET for areas not covered by NAVTEX <sup>2</sup> Partial NAVTEX coverage <sup>3</sup> See EGC MSI SYSTEM NEW SCHEDULE TABLE (ADP main menu - reference section).				

SJC prepared slides regarding this topic and presented it to the group.

- This was following discussion from NIPWG-10.

Discussions whether it is necessary to have the additional attribute “isSubArea” (Boolean) as proposed by SJC.

JY clarified that the Baltic Sea Sub-Area is technically in NAVAREA I, but since this sub-area is complex, it is under Sweden’s jurisdiction.

- In UKHO, the Baltic Sea Sub-Area is a separate named feature/area.

EM mentioned that the primary purpose of S-123 is discovery of the information and what to do with it. Still unsure about the added complexity regarding the additional attribute.

From a modelling perspective, HA mentioned that it might be best to link this sub-area via an association/relationship.

The goal is for the machine to discover that the sub-area is related to the NAVAREA.

- EM would not recommend Booleans, but if this association is important, then perhaps a relationship would better serve this.

JY added that the Baltic Sea Sub-Area is the only one, so perhaps adding the Boolean is not necessary.

- SJC noted that if this is not as important to make this distinction, then perhaps the model does not need to be changed.

The possibility of modelling versus the practicality of encoding this information for the rest of the authorities who encode this type of information weighed the decision to not include this change into the remodel.

The overall consensus was to keep it simple and to add an explanation to the DCEG to indicate the sub-area via the name.

**Action Item 12: SJC to send slides to the group regarding the encoding of a “sub-area” for NAVAREA/METAREA.**

## 6.0 Review of S-123 Feedback Submitted to Date

Goal is to review the feedback comment document to ensure that the conclusions are clear in preparation for the List of Changes to create the next version of the S-123 Product Specifications.

TG17/05 Ongoing	For everyone to review the conclusions regarding the proposed editorial changes captured in the feedback document.
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**Action Item 13: BG to update feedback document regarding BV’s proposal based on the discussion had during NIPWG-10 and S-123TG18.**

## 7.0 Preparing the List of Changes to Present to NIPWG Members

The goal would be to submit the proposed changes to S-123 for the next NIPWG VTC in December 2023 as per [NIPWG-10 Action Item 35](#): “Proposed changes to S-123 to be shared with NIPWG and to provide a period of review (6-8 weeks) to have an approved to do list to generate the next version of the PS.”

- The “to do list” mentioned is based on the proposed changes.
- EM confirmed that the [S-123 data model revision slides presented by SJC during NIPWG-10](#) should be sufficient for explaining and capturing the new remodelling proposal.
- Focus is to get a proposal with IM ready to include with the proposed changes.

It was mentioned by EM at NIPWG-10: “After Phase 1 product specifications are complete, all to consider volunteering to update the S-123 product specifications following the recommendations approved by the working group. Resources are necessary to move this product specifications forwards.”

TG17/09 Ongoing	For everyone to do a final review of the proposals and feedback document before being submitted to NIPWG.
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Will wait to include proposal with IM (as per NIPWG-10, Action Item #36).



**8.0 Next Meeting**

8.1 Actions to be Taken by Next Meeting

- None noted.

8.2 Next Meeting Dates:

- Potential dates for **S-123TG19** and **S-123TG20**
- **Holidays:**
  - o *November 10 (USA obs.) 11 (CAN, USA), 13 (CAN obs.), 23 (USA)*
  - o *December 25 (CAN, DEU, GBR, USA), 26 (CAN, DEU, GBR)*
- Check IHO calendar: <https://iho.int/en/iho-meetings-and-events-calendar>
  - o **S-100WG8: November 13 to 17, 2023** (EM, HA, JP, SJC, RM)
  - o **S-102PT: November 17, 2023** (RM)
  - o **NIPWG 2023 VTC 3: December 6, 2023**

November						
Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

December						
Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

**Action Item 14: BG to send an email to the task group to schedule S-123TG19.**

**Action Item 15: BG to send a first draft of the S-123TG18 minutes to the group for review.**

8.3 Topics to Discuss

- None noted.

8.4 Additional Comments

- None noted.

## ANNEX A: AGENDA

- 1.0 Opening Remarks
- 2.0 Approval of Agenda
- 3.0 Approval of S-123TG17 Minutes
- 4.0 Review of Action Items from S-123TG17
- 5.0 Follow-Up on NIPWG-10 Meeting
  - 5.1 NIPWG-10, Action Item #33: VTC to be Arranged to Assess BV's Proposals and to be Amalgamated with Other S-123 Changes and Shared with NIPWG
  - 5.2 NIPWG-10, Action Item #30: Investigate How You Would Capture a (NAVAREA/METAREA) Sub-Area in S-123
- 6.0 Review of S-123 Feedback Submitted to Date
- 7.0 Preparing the List of Changes to Present to NIPWG Members
- 8.0 Next Meeting

**ANNEX B: LIST OF ATTENDEES**

<b>Country / Organization</b>	<b>Participant</b>	<b>Initials</b>
Canada	Bridget Gagné (CCG)	BG
Canada	Eivind Mong (CCG) <a href="#">NIPWG Chair</a>	EM
Canada	Quinn Arruda (CCG)	QA
Finland	Stefan Engström (Traficom) <a href="#">NIPWG Vice-Chair</a>	SE
Germany	Philipp Schwedas (BSH) <a href="#">Absent</a>	PS
United Kingdom of Great Britain and Northern Ireland	James Weston (UKHO) <a href="#">NIPWG Secretary</a>	JW
United Kingdom of Great Britain and Northern Ireland	Jason Youé (UKHO)	JY
United Kingdom of Great Britain and Northern Ireland	Neil Salter (UKHO)	NS
Bureau Veritas Marine & Offshore	Ilia Maslov	IM
Caris (Teledyne)	Hugh Astle	HA
IIC Technologies	Jonathan Pritchard <a href="#">Absent</a>	JP
National Taiwan Ocean University (NTOU)	Shwu-Jing Chang	SJC
Portolan Sciences	Raphael Malyankar	RM

**ANNEX C: LIST OF ACTION ITEMS**

<b>Action Item</b>	<b>Action Description</b>
TG9/04 <b>Ongoing</b>	<b>JP</b> to provide an updated description for the DCEG regarding GMDSSArea (emphasis on administrative boundaries) (Wait for discussion at S-100WG in regard to overlapping coverage issue)
TG16/08 <b>Ongoing</b>	<b>BG</b> to bring up at a future S-123TG meeting the review of the DQWG recommended template to determine which sections apply to S-123.
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TG18/02	<b>RM</b> to upload finalized S-123TG17 minutes to the NIPWG Wiki.
TG18/03	<b>BG</b> to send finalized S-123TG17 minutes to be uploaded to the NIPWG website.
TG18/04	<b>BG</b> to look into NIPWG-10 Action Item #07 regarding the development of key performance indicators for the S-123 Product Specifications.
TG18/05	<b>BG</b> to bring up at a future S-123TG meeting regarding NIPWG-10 Action Item #08 about providing a point of contact for S-64 and S-98.
TG18/06	<b>BG</b> to provide CCG S-123 test data to aid S-164 development.
TG18/07	<b>BG</b> to look into NIPWG-10 Action Item #10 regarding the current draft of S-98 Annex C.
TG18/08	<b>BG</b> to look into NIPWG-10 Action Item #44 regarding the drafting of NIPWG level milestones.
TG18/09	<b>SJC</b> to send slides to the group regarding how to incorporate BV’s proposal.
TG18/10	<b>IM, SJC</b> and <b>EM</b> to meet to work more on BV’s proposal.
TG18/11	<b>BG</b> and <b>EM</b> to make contact with the operators, as per IM’s request, to demonstrate that work is being done on IHO’s end regarding BV’s proposal.
TG18/12	<b>SJC</b> to send slides to the group regarding the encoding of a “sub-area” for NAVAREA/METAREA.
TG18/13	<b>BG</b> to update feedback document regarding BV’s proposal based on the discussion had during NIPWG-10 and S-123TG18.
TG18/14	<b>BG</b> to send an email to the task group to schedule S-123TG19.
TG18/15	<b>BG</b> to send a first draft of the S-123TG18 minutes to the group for review.