S124 CG
Needs and Gaps by actor (see use case diagram) from IMO backgrounds of e-navigation development and of modernisation of GMDSS
V1 – October 2014

Coordinators (NAVAREA, NAVAREA Sub-Area, National coordinator)

See NAV 56/WP.5/Rev.1	Needs	*FR comments*	*AU comments*	*NO comments*
Annex 3, page 1	Collection of information	A standard for interoperable digital NW will facilitate their dissemination in information systems including web systems. NW will be more visible for data providers and the interest to send information to the coordinators will be more understandable. This principle could be extended to NtM and to the Nautical products producer. This also applies to the nautical information, upstream final information products (i.e. NW and NtM). An information model could help to obtain all the relevant data via a form to make a good NW.	The coordinator should collect the required and relevant information (including static and dynamic information; hydrographic, environmental and vessel data, Aids to Navigation information and known hazards) in standardised format, from the authenticated data sources and store it in an appropriate data structure for optimal distribution.	For all foreseeable future coordinators will receive and collect information through “non digital” devices like phone, fax, satcom and email. A digital standard for NW will still be relevant for collecting information from digital sources like databases. A digital standard will furthermore assure that all relevant information is collected.
Annex 3, page 2	Management of information	It is necessary to model the nautical information (NI) and its different status during its processing (including NI upstream the final information products) to enhance information management and to automate some process. But national organizations for nautical information differ from each other on some aspects, except the standardized lifecycles of the final information products. The lifecycle and workflow have to be modeled to a certain extend to model the nautical information.	The coordinator should consider the benefits of an open architecture systems and securely manage the information, keeping the custodianship details in a harmonized and holistic manner to a common maritime information data structure.	Display of NW on ENC based on a digital standard will ease management of information and contribute to visual QA and validation of data and information. Different symbols for draft NW, promulgated NW, monitored NW (received) and cancelled NW would be preferable.
Annex 3, page 3	Provision of information to vessels	S100 PS for NW is an essential contribution in order to improve the delivery and presentation of such nautical information. The case of T&P NM has to be examined (see nautical products producer). The presentation’s set up needs to define how the information is managed and used aboard.	The coordinator should send automated and standardized messages in an operationally effective manner; and within its area of responsibility. In addition to MSI, traffic and security-related information, updates to nautical publications, met-ocean information etc. should be included. The coordinator should consider use of AIS binary messages.	A digital standard must facilitate automatic on board display (ENC) of promulgated NW and furthermore facilitate automatic management of cancellations and in force lists. A NW can concern a single position, an rectangular or circular area or an area relative to a position/ area. (“In vicinity of”) A digital standard must be able to display all these options. A standard digital format will contribute to a more harmonized promulgation of NW worldwide.

Annex 3, page 4	Shore-to-shore information exchange	A standard for interoperable digital Nautical Information would facilitate shore-to-shore information exchange, noting that the coordinator has to liaise (and exchange information) with other coordinators and producers of nautical products. In some cases, nautical products updates relay warnings, then, it should be easy to convert a NW into T or P NM, to link and coordinate these different kinds of products.	When distributing the required information, the coordinator should maintain the data's security and custodianship information. The coordinator should utilise the necessary protocols, formats and data structures.	A digital standard should make possible conversion from NW to T or P NM.

Gaps – onshore side (NAV58/14 Annex 7)	*FR comments*	*AU comments*	*NO comments*
211-Gte01 Lack of a common maritime information/data structure harmonizing the policies for the security and use of data. Insufficient identification of harmonization needs for standards, formats and protocols. Lack of protocols, formats and data structure that enable shore-based authorities to exchange information with other authorized shore-based users. No standardized format for data exchange between VTS centres and other e-nav stakeholders	S100NW CG's works on a harmonized data structure for NW. To do that, we need to have some ideas on the future harmonized protocols (new ways of operations) onshore and aboard which will use the data, even if it is not directly in the scope of our CG. We should liaise with projects and other bodies including the WWNWS for the specification of the MSI Maritime Service Portfolios. To reduce the risk of an unsuitable format, the model should not be too much sophisticated.	Develop standardized format for information exchange between shore authorities including inter VTS exchange. Consider the use of open architecture systems to aid in forming the common maritime information/data structure.	Today VTS provides information to vessels that originates from other shore-based authorities. (MSI, NM, weather, etc) A standard data format could make all shore-based authorities capable of promulgating such information for onboard capture and presentation. This will reduced the need for VTS to provide such information to vessels as part of their information service.
235-Gte01 Insufficient delivery and presentation of maritime information that shore-based authorities are required to provide to ships. There are no standard data formats for onboard capture and presentation that cover the entire scope of information provided by a VTS.	See comment for Needs "Provision of information to vessels"	Shore authorities should provide MSI in such a format that can be captured onboard for display and presentation, as and when required.	See comments under "Provision of information to vessels".
235-Gop01 Lack of harmonized presentation of domain awareness to improve situational awareness for allied and other support services	A standard for interoperable digital NW will facilitate their dissemination in onshore information systems. Presentation in onshore systems could be quite similar to presentation aboard.	Develop common maritime information/data structure harmonizing policies to improve situational awareness.	No comment.

Please add other needs, gaps, general requirements for solutions and other comments for coordinator:

	France
1.	Often operators are mariners who rotate with other functions or jobs. They must quickly process information. Consequently, the process of making the NW must be fast, simple, natural for a mariner. Modeling should not weigh it down or require a significant learning (eg

	knowledge of a sophisticated objects catalogue) but it should help to produce clear information.
2.	It is the responsibility and the control of the coordinator (the Coastal State) to decide which ships must be informed and to send them the information, even if some of these ships could consider that they are not concerned (abusive use of filters).
3.	The structured information should be independent of the different broadcasting means and media (interoperability)
4.	The coordinator will easily provide a dual production (ie S100 NW and current VHF, NAVTEX, NAVAREA warnings) for the transition period. So, backward compatibility is essential (i.e. It should be possible to deduce S-53 NW (current NW) from S-100 NW model).
5.	The S100NW PS should be easy to implement by stakeholders for an easy worldwide transition, focus on the main benefits. The cost of the operations shouldn't increase (the decrease is the best).
6.	What are the main benefits and what is the quickest path to reach them while facilitating farther progress? A scenario of transition has to defined.

Nautical products producer (HO)

See NAV 56/WP.5/Rev.1	Needs	*FR comments*	*AU comments*	*NO comments*
Annex 3, page 1	Collection of information	See “Coordinator” needs.	The producer should collect all the required information in a standardised format from the identified data sources and store it in an appropriate data structure for optimal distribution.	A digital standard should make conversion from NW to T or P NM possible.
Annex 3, page 2	Management of information	Similar to Coordinator, noting that the lifecycle of some information products are interdependent.	The producer should securely manage the information, keeping the custodianship details, in a harmonized and holistic manner to a common maritime information data structure. The data needs to be organised to S-4 B600 in S-57 UOC. The producer should collaborate with the coordinator with respect to any requirement to update/elaborate nautical products, (includes foreign producers).	Display of NM information on ENC based on a digital standard will ease management of information and contribute to visual QA and validation of data and information.
Annex 3, page 3	Provision of information to vessels	Similar to Coordinator. IHO recommends to convert paper charts T&P NMs in ENC updates (ER). Most of the States are acting accordingly as it is currently the most practical and reliable way to provide the T&P information to the ECDIS user. But it is a heavy task for HOs (it isn’t always easy to encode and manage the resulting ER) and the temporary or preliminary aspect of the information isn’t well reflected when using ER. T&P NMs could be displayed in an overlay of the ECDIS like NWs. NW and T&P NMs contain almost identical information and often a T&P NM relays a NW via another media (charts updates flow). The two concepts contribute to same user need for safety related information. Then, they should be examined together to obtain a harmonized service of nautical information. So, it seems necessary to also model T&P NMs. With a question: where/when T&P NMs will be useful when NWs will be available in a standardized digital form (ie NW stored and displayed with the chart)? A same event leads the distribution of various forms of information products through various different infrastructures. Could some costly duplications be avoided in the future?	When distributing the required information, the producer should maintain the data’s security and custodianship information. The producer should utilise the necessary protocols, formats and data structures.	A digital standard must facilitate automatic on board display (ENC) of promulgated NM and other nautical information. A standard digital format will contribute to a more harmonized promulgation of NM and other nautical information worldwide.
Annex 3, page 4	Shore-to-shore information exchange	Similar to Coordinator. The nautical product producer has to liaise (and exchange information) with other coordinators and producers of nautical products	When distributing the required information, the producer needs to maintain the data’s security and custodianship information. The producer needs to utilise the necessary protocols, formats and data structures.	No comment.

Gaps – onshore side (NAV58/14 Annex 7)	*FR comments*	*AU comments*	*NO comments*
211-Gte01 Lack of a common maritime information/data structure harmonizing the policies for the security and use of data. Insufficient identification of harmonization needs for standards, formats and protocols. Lack of protocols, formats and data structure that enable shore-based authorities to exchange information with other authorized shore-based users. No standardized format for data exchange between VTS centres and other e-nav stakeholders	Similar to Coordinator	Develop standardized format for information exchange between shore authorities including other producers of nautical products and distributors.	No comment.
235-Gte01 Insufficient delivery and presentation of maritime information that shore-based authorities are required to provide to ships. There are no standard data formats for onboard capture and presentation that cover the entire scope of information provided by a VTS.	Similar to Coordinator. See also comment on producer needs (Provision of information to vessels)	Nautical product producers should provide MSI in such a format that can be captured onboard for display and presentation, as and when required.	No comment.
235-Gop01 Lack of harmonized presentation of domain awareness to improve situational awareness for allied and other support services	Similar to Coordinator	Develop common maritime information/data structure harmonizing policies to improve situational awareness.	No comment.

Please add other needs, gaps, general requirements for solutions and other comments for nautical products producer:

	France
1.	The S100NW PS for T&P NMs (if we decide to work on) should be easy to implement by stakeholders for an easy worldwide transition, focus on the main benefits. The cost of the operations shouldn't increase (the decrease is the best).
2.	The coordinator will easily provide a dual production (ie S100 T&P NW and current "paper" T&P NMs and associated ER) for the transition period. So, backward compatibility is essential.
3.	It should be easy to convert a NW into T or P NM (and keep a link between them?)

Broadcaster (NAVTEX coordinator, Coast Earth Station)

See NAV 56/WP.5/Rev.1	Needs	*FR comments*	*AU comments*	*NO comments*
Annex 3, page 2	Management of information	No comment	The broadcaster should use standardised tools to manage information in a common maritime information/data structure. There is a need to maintain data security and custodianship information. Need to take into account the benefits of open architecture systems.	Today several SafetyNet broadcasters offer web interfaces where coordinators can manage their own broadcast. (e.g Inmarsat common user interface). A digital standard will reduce the broadcasters need for "hands on" management of information.
Annex 3, page 3	Provision of information to vessels	A same event leads the distribution of various forms of information product through various different infrastructures. Could some costly duplications be avoided in the future?	Within the area of responsibility, the broadcaster should consider sending additional information including traffic and security-related information, updates to nautical publications, met-ocean information etc. The broadcaster should consider use of AIS binary messages.	See above.
Annex 3, page 4	Effective and robust Communications	No comment	The broadcaster needs to ensure that communication technology is reliable and adequate bandwidth is available for essential communication needs.	A digital standard should eliminate the need for broadcasters to retype or "cut and paste" information from one system to another. This saves time and reduce sources of error.

Gaps – onshore side (NAV58/14 Annex 7)	*FR comments*	*AU comments*	*NO comments*
211-Gte01 Lack of a common maritime information/data structure harmonizing the policies for the security and use of data. Insufficient identification of harmonization needs for standards, formats and protocols. Lack of protocols, formats and data structure that enable shore-based authorities to exchange information with other authorized shore-based users. No standardized format for data exchange between VTS centres and other e-nav stakeholders	No comment	Develop standardized format for information exchange between NAVTEX coordinator and NAVAREA coordinator.	No comment.
235-Gte01 Insufficient delivery and presentation of maritime information that shore-based authorities are required to provide to ships. There are no standard data formats for onboard capture and presentation that cover the entire scope of information provided by a VTS.	No comment	NAVTEX broadcaster should provide MSI in such a format that can be captured onboard for display and presentation, as and when required.	No comment.
235-Gop01 Lack of harmonized presentation of domain awareness to improve situational awareness for allied and other support services	No comment	Develop common maritime information/data structure harmonizing policies to improve situational awareness.	No comment.

Please add other needs, gaps, general requirements for solutions and other comments for broadcaster:

	France
1.	Potential solutions to broadcast digital NWs have to be identified (not in the scope of our CG). Their abilities and requirements on data should be known. AIS standards have to be examined (Application Specific Messages).
2.	The broadcasting lifecycle has to be examined.
…	

Shipboard user

See NAV 56/WP.5/Rev.1	Needs	*FR comments*	*AU comments*	*NO comments*
Annex 2, page 3	User-Selectable Presentation of Information Received via Communication Equipment.	For safety information it could be antagonistic with "It is the responsibility and the control of the coordinator (the Coastal State) to decide which ships must be informed and to send them the information, even if some of these ships could consider that they are not concerned (abusive use of filters)". Onshore authorities should send a NW to the ships in the area in which ships must be informed (?). A same event leads the distribution of various forms of information product through various different infrastructures. Could it be optimized?	The shipboard user should be able to customise/filter the information received and they should be given access to real-time information for decision making purposes.	Shipboard users must not be able to de-select the presentation of MSI.
Annex 2, page 3	Maritime Safety Information (MSI): Mariners expressed a desire to sort and display MSI, such as NAVTEX, SafetyNET more effectively.	A S100 PS for NW is the solution. Read NAV55/11/4 (FR hasn't done yet!). Re-formatting of NAVTEX data is not sufficient to parse completely on client systems and to secure process. It is essential to identify possible functions attached to NW aboard (displays, alert, filters and requests, management …).	The shipboard user should have the ability to display the MSI (such as NAVTEX information) on navigation displays.	See above.
Annex 2, page 6	Guard Zones: desire to have more effective Guard Zones to notify watchkeepers of hazards pertaining to collisions and groundings.	Digital NW can be integrated in the Guard Zone system.	The shipboard user should have more effective Guard Zones for notifying hazards pertaining to collisions and grounding. Guard Zones facility should preferably be provided in an automated and integrated manner. Warnings from Guard Zones should be integrated into the bridge alert system.	No comment.
Annex 2, page 6	Reduction of administrative burden and increase use of electronic documentation	The management of nautical information should be more automated.	The shipboard user should be presented with an appropriate electronic format to improve efficiency and reduce administrative burden. Integrity of the electronic documentation needs to be included.	A digital standard for NW will facilitate automation of several processes that are done manually today.
Annex 2, page 7	Automated Updating of Base Line Data and Documents: Mariners expressed a desire for documents such as Charts, and Voyage planning publications to be automatically updated, with minimal shipboard intervention.	Except digital T&P NM, out the scope of S100NW CG. Charts (ENC) are automatically updated (ER).	The shipboard user should be provided with the automatic correction/updating facility for nautical charts and nautical publications so as to keep them up to date. All relevant information should be available and accessible from a centralized location.	See above.
Annex 2, page 8	Effective and robust communications	More structured NW could contribute if concerned. It should be possible to broadcast an S100 NW by voice.	The shipboard user should receive automated and standardized messages via a common marine/data structure. The	No comment.

			shipboard user should be able to minimise the amount of data storage required to store such data for decision making. There is a need to utilise AIS application specific messages. There is a need to use wireless technology (Wi-Fi and Wi-MAX).	

Gaps – aboard side (NAV58/14 Annex 7)	*FR comments*	*AU comments*	*NO comments*
111-Gte01 Lack of harmonized data formats for the transfer of information received via communication equipment (e.g., Maritime Safety Information MSI) for the navigational systems for presentation	A S100 PS for NW is the solution. The portrayal has to be defined but it depends on which system the information is displayed (ECDIS and Others?). The portrayal of NW should be very simple.	Develop standardized format for transmission of MSI between shore authorities and shipboard users so that the MSI can be can be captured onboard for display and presentation, as and when required.	No comment.
111-Gte05 There are no means of processing or filtering the information exchanged via communication equipment	A S100 PS for NW contributes to the solution.	The shipboard user should be able to customise/filter the information received and they should be given access to real-time information for decision making purposes.	No comment.
113-Gre01 Lack of standardized symbology of all information required to display on the navigational system(e.g. S-52 exist but lack of symbology for MIO elements)	The portrayal has to be defined in the S100NW PS.	Consider using relevant new IHO standard from S-100 group.	No comment.
120-Gte03 Lack of systems for source and channel management for communication equipment. Lack of seamless and communication mean dependent protocol for exchanging navigation information between ships Insufficient techniques and procedures for exchange of data between ship shore and on board. Insufficient data protocols to support the exchange of reliability information describing data and system integrity	No comment	Communication equipment and system capabilities differ from ship to ship. There is a need for the provision of a seamless data protocol for exchanging navigation information between ships and between ship to shore.	No comment.
134-Gte03 lack of harmonized symbology for whole potential e-navigation information	The portrayal has to be defined in the S100NW PS.	Consider using relevant new IHO standard from S-100 group.	No comment.
135-Gte01b Lack of technical harmonized solutions for processing, routeing, filtering and display of information received via communication equipment to enable transfer of the information to navigational systems	A S100 PS for NW contributes to the solutions.	At a technical level, there is a gap with regard to presentation of information received via communication equipment (e.g. MSI) on the navigation display. Consider using relevant new IHO standard from S-100 group.	No comment.
135-Gte01e Insufficient means for sorting and display of MSI such as NAVTEX, SafetyNET. Insufficient network of storage, sharing and distribution of MSI.	See comment on needs “User-Selectable Presentation of Information Received via Communication Equipment”.	The shipboard user should be able to customise/filter the information received and they should be given access to real-time information for decision making purposes.	No comment.
135-Gte01f Lack of user-selectable and task-oriented presentation of information received via communication equipment (including MSI) on navigational systems	See comment on needs “User-Selectable Presentation of Information Received via Communication Equipment” . It is	The shipboard user should be able to customise/filter the information received and they should be given access to real-time information for	No comment.

	essential to identify possible functions attached to NW aboard (displays, alert, filters and requests, management …).	decision making purposes.	
135-Gte01h Unless having prior subscription, the current system does not allow for MSI and other navigational warnings/broadcast, etc. to be received in real-time mode and be integrated or in conjunction with the navigation display	A S100 PS for NW contributes to the solutions.	Reception of MSI should not be subscription-based,	No comment.
135-Gte01i Unavailability of information in real-time with possible presentation on the navigational display to support bridge operation	A S100 PS for NW contributes to the solutions.	To support effective decision making on board, real-time information should be provided.	No comment.
136-Gte01a New equipment/system or task based on INS-task (functionality) concept resolution MSC.252(83) for management of information formerly available in printed format is necessary.	A S100 PS for NW and T&P NMs contributes to the solutions.		No comment.
136-Gte01b Information may be difficult to localize in electronic documents (search function).	Out of the scope of S100NW CG	Provide a user-friendly search engine/function for locating appropriate electronic information from a centralized location.	No comment.
136-Gte01c Lack of automatic updating of documents.	Except digital T&P NM, out the scope of S100NW CG. Charts (ENC) are automatically updated (ER).	The shipboard user should be provided with the automatic correction/updating facility for nautical charts and nautical publications so as to keep them up to date. All relevant information should be available and accessible from a centralized location.	No comment.
136-Gte01d Electronic systems can not automatically determine the status of available data and automatically retrieve the most current and comprehensive data.	A S100 PS for NW contributes to the solution for MSI.	All relevant electronic information should be available and accessible from a centralized location.	No comment.

Please add other needs, gaps, general requirements for solutions and other comments for Shipboard user:

	France
1.	Inconsistencies between nautical information from various sources
2.	NW's display and content should be clear for an immediate knowledge of the event and its location on the chart.
3.	It is needed the ship receives the NW but it is also needed that the Officer Of the Watch (OOW) who is on duty knows this information.

From the e-navigation background, see also:

- RCO 1: Integration of navigation information and equipment including improved software quality assurance (cf. NAV/59, Annex 1, § 7.2.1)
- RCO 6: Improved shore-based services (cf. NAV/59, Annex 1, § 7.2.6)

Modernization of GMDSS background

Extract from COMSAR 15/INF.3

General feedback from users

1. In general, mariners were pleased with the GMDSS infrastructure and SAR response. However, onboard equipment was deemed to be overly complex, outdated, poorly supported and failed to take into account the benefits that could be achieved through integration with general communication and navigation systems.

4. Improvements were also thought to be achievable by making the GMDSS more focused on a vessel's navigational area. It was deemed that much of the GMDSS traffic (including false alarms) and in particular MSI are not pertinent to their areas of concern and therefore major distractions.

Preliminary onboard GMDSS User Needs

User needs	Justification	Issues to Consider
The need to display MSI (NAVTEX, SafetyNET, AIS) more effectively.	Currently the receipt and plotting of MSI from NAVTEX, SafetyNET, and AIS are uncoordinated. The assessment of risk and applicability of such information is done purely by human decision and subject to error. MSI received by ships is often not relevant to their area of navigation, thus causing distraction and fatigue.	Consideration should be given to displaying MSI graphically to improve decision making but in a coordinated way so as to avoid information overload and distraction. It was agreed that Narrow Band Direct Printing (NBDP) was not needed. In the near term, caution needs to be given for the use of safety messages via AIS as many ships have poor MDK displays or display AIS on Radar alone and not on ECDIS. If AIS is to be used for safety messages clear procedures and prioritization needs to be addressed.

Other Onshore User

See NAV 56/WP.5/Rev.1	Needs	FR comments	AU comments	*NO comments*
Annex 3, page 1	Collection of information	Access to NW and their integration in onshore systems will be facilitated by their standardized digital form.	The other onshore user should be able to receive the relevant nautical information within the appropriate period of time and for its particular area.	No further comment.
Annex 3, page 2	Management of information	Modelling digital nautical information will ease to share information.	The other onshore user should utilise effective and standardised tools for managing increased levels of information. Consider a harmonised approach to managing a diverse range of information from dissimilar systems.	No further comment.
Annex 3, page 3	Provision of information to vessels	S100NW PS should be consistent with other S100 PS.	Note that there is no provision for other onshore users to provide information to vessels within the Scenarios V0 and Use Case Diagram V0.	No further comment.
Annex 3, page 4	Shore-to-shore information exchange	Modelling digital nautical information will ease to share information.	Note that there is only the provision for other onshore users to receive information to from Nautical products producer within the Scenarios V0 and Use Case Diagram V0.	No further comment.
Annex 3, page 4	Effective and robust Communications	No comment	The other onshore user should receive automated and standardised messages via a common marine/data structure. It should be ensured that adequate bandwidth is available for essential communication needs.	No further comment.
Annex 4, page 1	SAR should have access to relevant information contained within the e-nav domain	Extract from S-53 : Communications related to search and rescue operations such as distress alerts, coordination of operations, local communications and positioning signals are never MSI, even when (for some shore-to-ship alerts) they use the International SafetyNET or NAVTEX services which are also used for MSI. … Search and Rescue operations may, however, involve the broadcasting of MSI in the navigational warning category.	SAR authorities should be provided with a full range of information pertaining to ships and their domain to determine appropriate SAR capability and support effective incident response.	No further comment.
Annex 4, page 1	Effective Communication and information sharing.	No comment	SAR authorities should be able to use the common data structure to communicate and share information effectively with all parties involved in an incident. SAR authorities should be able to determine the most effective means of communication to maximise incident response.	No further comment.

Gaps – onshore side (NAV58/14 Annex 7)	*FR comments*	*AU comments*	*NO comments*
211-Gte01 Lack of a common maritime information/data structure harmonizing the policies for the security and use of data. Insufficient identification of harmonization needs for standards, formats and protocols. Lack of protocols, formats and data structure that enable shore-based authorities to	A S100 PS for NW contributes to the solutions.	Note that there is no provision for other onshore users to provide information to vessels within the Scenarios V0 and Use Case Diagram V0.	No further comment.

exchange information with other authorized shore-based users. No standardized format for data exchange between VTS centres and other e-nav stakeholders			
235-Gte01 Insufficient delivery and presentation of maritime information that shore-based authorities are required to provide to ships. There are no standard data formats for onboard capture and presentation that cover the entire scope of information provided by a VTS.	A S100 PS for NW contributes to the solutions. Should the NW's portrayal in onshore systems be the different than in aboard system?	Note that there is no provision for other onshore users to provide information to vessels within the Scenarios V0 and Use Case Diagram V0.	No further comment.
235-Gop01 Lack of harmonized presentation of domain awareness to improve situational awareness for allied and other support services	A S100 PS for NW contributes to the solutions.	Other onshore users should be provided with a harmonised presentation of MSI to improve situational awareness.	No further comment.
310-Gte01 Lack of mechanisms to provide SAR (RCC) function with the full range of relevant e-navigation information in digital format	A S100 PS for NW contributes to the solutions.	SAR authorities should be provided with a full range of information pertaining to ships and their domain to determine appropriate SAR capability and support effective incident response.	No further comment.

Please add other needs, gaps, general requirements for solutions and other comments for Other Onshore User:

	France
1.	It is important to take into account NW in the situational awareness.
2.	……
…	