

12 – 15 September 2006, Buenos Aires,
Argentina

Origin: Inmarsat

Agenda item: 3.4.1

“MSI outside limits of WWNWS”
Establishment of new NAVAREAs/METAREAs in Arctic waters

IMO COMSAR 10 Sub-committee agreed that all Arctic waters should be included in the WWNWS and the concept of new NAVAREAs/METAREAs was supported. The following questions on the subject were addressed by the Sub-committee:

1. Should there be a northern limit to any new area? (*Inmarsat comments to follow*)
2. Can a seasonal service only be provided?
3. Who will act as NAVAREA co-ordinator and METAREA issuing service (do not have to be the same country)?
4. Would some of the proposed new NAVAREAs be better established in sub-areas of existing NAVAREAs?
5. How will warnings be transmitted and can they be monitored as required? Do systems other than Inmarsat (such as HF NBDP, NAVTEX or other satellite service providers) need to be considered? (*Inmarsat comments to follow on the first part*)
6. Who will undertake provision of SAR information?
7. How will the Inmarsat system definition manual and existing SafetyNET terminals be updated to allow receipt of the new NAVAREAs? Ideally this update needs to be co-ordinated with plans to include new areas in other parts of the world. (*Inmarsat comments to follow*)
8. Will assistance be required from IHO/CPRNW to support new NAVAREA co-ordinators or from JCOMM/ETMSS for METAREA issuing services?
9. How will WWNWS guidance and other relevant documents be updated? (*Inmarsat comments to follow*)

Inmarsat is able to provide comments on some of them:

1. Should there be a northern limit to any new area?

If Inmarsat C EGC SafetyNET service is used for promulgating Maritime Safety Information (MSI) for Arctic areas, a northern limit is required for any new area to support the service (*coastal warning addressing is not considered here*). It is required from the Inmarsat C system operational point of view only and has nothing to do with any international discussion or political decision on NAVAREA/METAREA limits. A limit can be inserted at any level, even beyond Inmarsat satellite coverage but MSI will be received only on those Inmarsat C EGC receivers that are inside the satellite coverage.

The International SafetyNET Manual defines three main services to promulgate scheduled MSI broadcast – addressing MSI to NAVAREAs/METAREAs or addressing to areas restricted by a circle or rectangle. The service codes are C2 = 31 (NAVAREA/METAREA) as the main (future) service and 04 (rectangular area) or 24 (circular area) as an interim solution.

To use the service code C2 = 31 (NAVAREA warnings or Met warnings or forecast to METAREA), a boundary of (a) new area(s) shall be programmed into the mobiles' memory with the appropriate number as it is done with the existing areas. When a message is addressed to the new area, e.g. NAVAREA XVII, a ship with an Inmarsat C terminal, which is inside the area, will recognise the message/address and receive/print it.

To use the service code C2 = 04 (Nav warnings to rectangular area), an area should also have a certain boundary limitation including a northern limit as required by the Inmarsat C system definition manual. Information on rectangular addressing is available in the IMO International SafetyNET Manual, Annex 4, section A, B and C. Limitation of (a) new area(s) is flexible and depends on operational requirements of MSI providers and can cover any area within the Inmarsat satellite coverage. If a message is sent to a rectangular area and a ship is navigating inside the area, the message will be received (and printed) by the ship's terminal.

The same applies if the service code C2 = 24 (Met warnings to circular area) is used, which requires definition of the centre of the circle and its radius in nautical miles. The service is less likely to be used for new areas since the previous two service codes are able to cover all operational requirements of MSI providers.

5. How will warnings be transmitted and can they be monitored as required? Do systems other than Inmarsat (such as HF NBDP, NAVTEX or other satellite service providers) need to be considered?

Warnings to new areas are transmitted in the same way as all existing SafetyNET messages with certain service codes. The only difference is to insert the correct address for the new areas.

NAVAREA/METAREA addressed MSI (service code C2 = 13) is sent to new areas, e.g. XVII, XVIII, etc. Rectangular (less likely circular) areas are defined by MSI providers and messages are addressed to the areas as required by the SafetyNET Manual.

To monitor broadcasts to Arctic areas, MSI providers are not required to set up a mobile terminal in the area to which messages are addressed as it is possible to use a terminal in any location within the coverage area of the satellite that is used for the SafetyNET broadcast.

If a message is addressed to a new Arctic NAVAREA/METAREA and the terminal is located outside the addressed area, it is required to set up the new area as an additional area on the mobile terminal via the EGC setup menu. This function is mandatory on all maritime terminals and at least one additional area is available. New Inmarsat mini-C models have up to four additional areas.

To monitor MSI addressed to a rectangular area (less likely to a circular area), it is required to set up a fixed position, which lies inside the addressed area, via the EGC setup menu. If it is required to monitor another rectangular area, a new fixed position, which is inside the other addressed area, should also be setup.

In both scenarios the mobile terminal, which may be outside the addressed areas, will receive MSI broadcast addressed to the rectangular (or circular) areas.

New paragraph:

It is important to keep the GPS position on the monitoring terminal valid or updated, either from an integrated GPS receiver or external navigation aid or entered manually. The terminal provides notification to the operator when the position has not been updated for four hours. If the terminal's position has not been updated for more than 12 hours, or is unknown, all SafetyNET messages will be received

7. How will the Inmarsat system definition manual and existing SafetyNET terminals be updated to allow receipt of the new NAVAREAs? Ideally this update needs to be co-ordinated with plans to include new areas in other parts of the world.

If/when the new NAVAREAs/METAREAs are defined and internationally agreed as the service code C2 = 31, it is required that the limits of the new areas shall be implemented/programmed by the Inmarsat C manufacturers into maritime mobile terminals. This job includes a few steps:

- IMO/IHO/WMO/IMSO should define the boundary of the new areas, as agreed and approved internationally;
- Inmarsat will issue a Change Proposal (CP) for the Inmarsat C System Definition Manual (SDM), based upon IMO requirements, and send it to the manufacturers and Land Earth Station (LES) Operators for comments and feedback;
- When comments and feedback are received, they are implemented into the CP, which is then issued as a Change Notice (CN) and becomes mandatory (if required by IMO) for Inmarsat C manufactures **(Note: no software or firmware changes for implementation of the new areas are required for Inmarsat C LESs and the network)**;
- Inmarsat C manufacturers will issue new software for new mobiles that can support MSI reception for new areas. It should be noted that some MES models are no longer supported by manufacturers and therefore they can not be updated with the new software. Some older models may also be unable to be updated.

The time frame between IMO approval of new areas and issuing new software may take up to one year.

When the new software for mobile terminals is available, it will be mandatory for implementation on new terminals, while existing terminals may be grandfathered for the update (shipowners may decide voluntarily to update existing terminals). It is

expected that a new software update for models, which are capable of being updated, can be carried out on board ship by a qualified service/installation engineer.

If some existing terminals (models) can not be updated for any reason (older models or models, which are no longer supported by manufacturers) they still may be used to receive MSI addressed to the new areas.

If a message is addressed to a new NAVAREA/METAREA, e.g. NAVAREA XVII, a ship's operator is required to set up area XVII as an additional area in the EGC setup menu and, as it is mentioned above in paragraph 5, this function is mandatory on all existing Inmarsat C mobile terminals. Some new Inmarsat C and mini-C models have up to four additional areas to setup.

If a message is addressed to a rectangular area, any ship in the addressed area will receive (and print) the message by default since her position is inside the area. It should be mentioned here that the ship's position from the built-in GPS receiver should be valid.

It is recommended that any update is coordinated and implemented with other plans/updates for the SafetyNET services, e.g. editing the existing areas, which was reported to the CPRNW at the previous meetings, and should be included in the same CP and CN.

9. How will WWNWS guidance and other relevant documents be updated?

Inmarsat will be able to provide updates for the IMO International SafetyNET Manual and give its comments on the other relevant documents.

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