

**10th MEETING OF THE IHO INTER-REGIONAL COORDINATING COMMITTEE
IHO-IRCC10
Goa, India, 4-6 June 2018**

Report of the Word-Wide Navigational Warning Service Sub-Committee (WWNWS-SC)

Submitted by:	Chair
Related Documents:	Joint IMO/IHO/WMO Manual on Maritime Safety Information (<i>IHO Publication S-53</i>)
Related Projects:	S-124 development
Chair:	Mr. Peter Doherty, USA
Vice-Chair:	Mr. Trond Ski, Norway
Secretary:	Mr. David Wyatt, IHO
Member States:	Argentina, Australia, Brazil, Canada, Chile, Cyprus, France, Greece, India, Japan, New Zealand, Norway, Oman, Pakistan, Peru, Russia, Spain, South Africa, Sweden, Turkey, UK, USA
Members:	IMO, WMO, IOC, IMSO
Expert: Contributors:	Inmarsat, SONSAT, CIRM, Iridium
<i>See Annex A for full details</i>	

1. Meetings Held During the Reporting Period

The WWNWS-SC monitors and guides the International Maritime Organization (IMO)/International Hydrographic Organization (IHO) World-Wide Navigational Warning Service (WWNWS, which includes NAVAREA and coastal warnings). The WWNWS-SC is responsible for studying and proposing new methods to enhance the provision of navigational warnings to mariners at sea, facilitating the implementation of the major changes in procedures for dissemination of navigational warnings and providing appropriate guidance to concerned IHO Member State Representatives to further the evolution of the WWNWS. The Sub-Committee also maintains a close liaison and cooperation with the WMO for its Worldwide Met-Ocean Information and Warning Service (WWMIWS).

The ninth meeting of the WWNWS Sub-Committee (WWNWS9) was hosted by the South African Navy Hydrographic Office and held at the Park Inn, Newlands, Cape Town, South Africa, from 28th August to 1st September 2017 under the Chairmanship of Mr Peter Doherty of the United States of America (USA). Commander Christoff Theunissen, acting Hydrographer of South Africa, welcomed the meeting which was attended by 51 delegates from 21 IHO Member States, and included the Secretariat of the World Meteorological Organization (WMO), the Secretariat of the International Mobile Satellite Organization (IMSO), the Chairs of IMO NAVTEX and International SafetyNET Coordinating Panels, Inmarsat, Iridium, South African Maritime Safety Agency (Maritime Rescue Coordination Centre) (SAMSA (MRCC)), Security of Navigation, Stabilisation, Advice and Training (including AWNIS) (SONSAT), Telkom Maritime Radio and the IHO Secretariat. The delegates included representatives of 19 NAVAREA Coordinators, one Sub-Area Coordinator and five National Coordinators.

All meeting documents are available from the IHO web site at:

https://www.iho.int/mtg_docs/com_wg/CPRNW/WWNWS9/WWNWS9.htm. The full report of the meeting is also available from this site.

The 16th meeting of the Document Review Working Group was held at the IMO, London, 27 February to 1 March 2018, the week immediately after the 5th session of the IMO Sub-Committee on Navigation, Communications, and Search and Rescue (NCSR 5). The meeting was attended by 5 member States (Canada, Norway, Spain, UK and USA), and the representatives from Secretariats of the IMO, WMO and IMSO, Inmarsat and Iridium.

All meeting documents are available from the IHO web site at:

http://www.iho.int/mtg_docs/com_wg/CPRNW/CPRNW_Doc-review/DRWG16/DRWG16.htm.

2. Work Programme

WWNWS Documentation

As a consequence of the decisions made at the NCSR 5, in particular the changes to the Inmarsat satellite constellation and services, the DRWG was invited to undertake a priority review of the IMO Resolutions A.705(17), as amended - *Promulgation of Maritime Safety Information*, A.706(17), as amended - *World-Wide Navigational Warning Service*, and A.1051(27) - *World-Wide Met-Ocean Information and Warning Service*. In addition, the DRWG was invited to review the IHO publication S-53 – *Joint IMO/IHO/WMO Manual on Maritime Safety Information (MSI)* – and the *International SafetyNET Manual* to ensure full harmonization with the IMO resolutions. The outcomes will be considered by the next (tenth) meeting of the WWNWS-SC (WWNWS10), which will be held from 27-31 August 2018 in Monaco and subsequently submitted to the 6th session of the NCSR in January 2019.

Iridium presented the initial version of their GMDSS mobile satellite system guidance document – *Iridium EGC Satellite Services Manual*, which was reviewed and a number of suggested amendments were offered by the Group. This follows the format of the *International SafetyNET Manual* but will remain a separate document until the system has been recognised by the IMO and a mature operational state has been achieved, after which consideration for a single generic manual for the two systems could be contemplated.

All draft documents under development by the Sub-Committee are available via the WWNWS page of the IHO web site. Member States are encouraged to review the documents and submit comments to the Chair (Mr Peter Doherty) and the IHO Secretariat (Assistant Director David Wyatt). Any proposed changes or amendments and further work will be undertaken at the DRWG17, which will be held the week after the sixth session of the NCSR at IMO Headquarters in London in late-January 2019. The drafting work will be finalised at WWNWS11, then submitted to the IMO for approval.

GMDSS / MSI Briefing

The Sub-Committee received MSI self-assessment reports from all 21 NAVAREAs. A number of issues were highlighted, which required further investigation and input from the Chair of the WWNWS-SC, as well as the Chairs of the IMO SafetyNET and NAVTEX Coordinating Panels. The Chair agreed to assist NAVAREA Coordinators, through the IHO Secretariat, to gain the support of National Coordinators in ensuring that all SOLAS MSI responsibilities were being met.

The contents of the relevant Annexes of the GMDSS Master Plan were reviewed. The IHO Secretariat highlighted a number of differences between the same information contained in the Annexes of the GMDSS Master Plan and that contained in IHO Publication C-55 – *Status of Hydrographic Surveying and Nautical Charting Worldwide*. NAVAREA Coordinators were requested to highlight to National Coordinators the conflicting information in the two documents and to request that they investigate to ensure consistency for their national entries.

The Secretariat of the WMO provided a brief on the activities of the Organization over the past year, this included details of the work programmes of the six regional associations and working groups and their activities, the need for increased cooperation between NAVAREA and METAREA Coordinators

and the continuous emergency response capability were all highlighted, as well as the activities of the regional training and global training centres. Preparations for the 5th meeting of Joint Commission on Oceanography and Marine Meteorology (JCOMM-5) were highlighted and the intention to complete the review of IMO resolution A.1051(27) ready for final harmonization at the DRWG16 meeting.

The Secretariat of IMSO provided a presentation on the activities of IMSO and an up-date on the technical assessments of the Iridium system and the Inmarsat Fleet Broadband system as they seek recognition as new GMDSS mobile satellite service providers.

The Sub-Committee also received several other briefings. Inmarsat reported on progress on the Inmarsat-C EGC SafetyNET system developments, including the new SafetyNET II system. The Chair of the S-124 Correspondence Group updated the Sub-Committee on the progress in the development of the S-124 Navigation Warning S-100 based Product Specification. The Coordinator of the Correspondence Group noted his desire to stand down from his position as soon as a replacement could be identified, although he indicated he would remain engaged with the development of S-124. Mr Eivind Mong, Canadian Coast Guard, has since filled that position. Iridium provided an update on developments of the Iridium Satellite system, as the process towards approval recognition as a mobile satellite GMDSS service provider progresses.

NAVAREA XIV highlighted that the transfer of responsibility for MSI from Land Information New Zealand (LINZ) to Rescue Coordination Centre New Zealand (RCCNZ) had been completed. NAVAREA XIV also provided a live demonstration of the systems in use for assessing and processing information by operations room personnel to help decision making and the issuing of warnings.

MSI Capacity Building (CB) Training Course

The meeting received updated information on the delivery of MSI training courses and the need for the NAVAREA Coordinators to work closely with the Regional CB Coordinators to help developing nations to reach the Phase 1 level (collection and circulation of nautical information, necessary to maintain existing charts and publications up to date) of the IHO CB Strategy. The meeting was informed that MSI courses had been conducted in 2017 in Barbados for members of the Meso-American and Caribbean Hydrographic Commission (MACHC) and in Fish Hoek, South Africa, for members of the North Indian Ocean Hydrographic Commission and the South Africa and Islands Hydrographic Commission. Additionally it was noted that a further three courses were planned in 2018 for the South West Atlantic Hydrographic Commission, South West Pacific Hydrographic Commission and the Mediterranean and Black Seas Hydrographic Commission. The e-learning guided sessions for the East Atlantic Hydrographic Commission were highlighted, it was agreed that these could not replace the MSI training course but were considered to be an ideal pre-course preparation, particularly for coastal states with no established MSI organization.

Election of Chair and Vice-Chair

Mr Peter Doherty, USA, was re-elected as Chair for the period 2017 to 2020 and Mr Trond Ski, Norway, was elected as vice-Chair. Two long serving members, Mr Alain Rouault (France), 7 years, and Mr Svante Håkansson (Sweden), 20 years, informed the meeting that they would be standing down from their positions as NAVAREA II and Sub-area Ib respectively and retiring at the end of the year.

Next Meeting

The tenth meeting of the WNWNS-SC (WWNWS10) will be held in Monaco, 27th to 31st August 2018 and it was proposed there could be joint sessions with the Worldwide Met-Ocean Information and Warnings Service (WWMIWS) Committee (the restructured JCOMM body to replace the Expert Team on Maritime Safety Services (ETMSS)) and METAREA Coordinators. All NAVAREA Coordinators and National MSI Coordinators are encouraged to attend the meetings of the WNWNS-SC to broaden their experience and interact with each other.

3. Progress on IRCC Action Items

1. Engage with Member States in their regions to identify potential instructors to accompany MSI trainings in order to become MSI trainers and report to IRCC.
 - WVNWS member regularly informed on the MSI Training Courses in their region and reminded of the necessity to support and participate as the NAVAREA MSI authority.
2. Consider using Trainer for Trainers (TFT) and e-learning methods to support the development of CB Phase 1 for developing coastal States and report back to IRCC.
 - No specific action taken at this time.
3. Encourage the attendance of Member States and Observers at WVNWS-SC meetings, to highlight the use of the Joint Manual on MSI to ensure correct terminology and formats used in MSI messages, to encourage closer engagement of the National MSI Coordinators of Member States with the relevant NAVAREA Coordinator(s) and report back to IRCC.
 - WVNWS members continually reminded to attend WVNWS meetings and the necessity for using the Joint Manual on MSI for format and structure of their messages. Additional guidance provided on the necessity for outreach to MS within the NAVAREA to enhance partnership engagement.
4. Encourage closer coordination between NAVAREA Coordinators and Regional CB Coordinators in planning and student selection for the CB MSI training courses.
 - Continued improvements made. MSI training course in Fish Hoek had proactive engagement with the planning arrangements and additionally, a high rate of competent and industry experienced students.

4. Problems Encountered

A critical issue for the continued success of the MSI course was the lack of qualified trainers; the Chair noted the only French instructor qualified and available to deliver the MSI course retired at the end of October 2017, this will restrict the opportunities for delivering courses in French. The lack of Spanish speaking instructors means that the course can only be delivered in English at present. It was suggested that a course could be developed to train new trainers, who had a suitable background and the necessary operational experience. It was recognised this would need to be funded and fitted into the IHO CB strategy plan, it was recommended this issue was raised to the next CBSC. The WVNWS-SC recorded its thanks to Australia, France, New Zealand, UK, and USA for their significant support in conducting the training courses and in the work undertaken in addressing the continuing requirement to review the training material to ensure consistency with the amended supporting documentation

5. Any Other Items of Note

The Chair highlighted the significant number of unannounced missile firings by the Democratic People's Republic of Korea (DPRK) and the grave concern over these operations, which pose a serious threat to maritime safety. The Chair noted the actions taken by NAVAREA XI to warn mariners after these rocket firings have occurred. The Chair also noted he would be highlighting this issue in his report to the NCSR5, requesting that the DPRK follow the requirements of IMO resolution 706(17), as amended, (MSC.1/Circ.1288, as amended) paragraph 4.2.1.3.13 and the Joint IMO/IHO/WMO Manual on MSI (MSC.1/Circ.1310, as amended) paragraph 2.4.1.4 to give a minimum of 5 days' notice prior to a firing.

6. Conclusions and Recommendations

WVNWS Documentation:

- Decisions made at the NCSR5, in particular the changes to the Inmarsat satellite constellation and services, and the Iridium GMDSS mobile satellite system application continue to be the primary factors dictating the update of the WVNWS and WVMWS MSI documentation.

MSI Capacity Building and MSI Training:

- The MSI e-learning guided sessions are not suitable as a replacement for the MSI training course. The e-learning course is more appropriate for pre-course preparation, particularly for coastal states with no established MSI organization.
- The continued success of the MSI Training course is contingent upon qualified French and Spanish language instructors. Additional IHO CB Funds may be necessary to facilitate this training effort.

Other:

- The significant number of unannounced missile firings by the Democratic People's Republic of Korea (DPRK) over the past year poses a serious threat to maritime safety. The Joint IMO/IHO/WMO Manual on MSI (MSC.1/Circ.1310, as amended) paragraph 2.4.1.4 provides specific guidance on a minimum of 5 days' notification prior to any wide area firing exercise. National Coordinators are reminded of this notification responsibility.

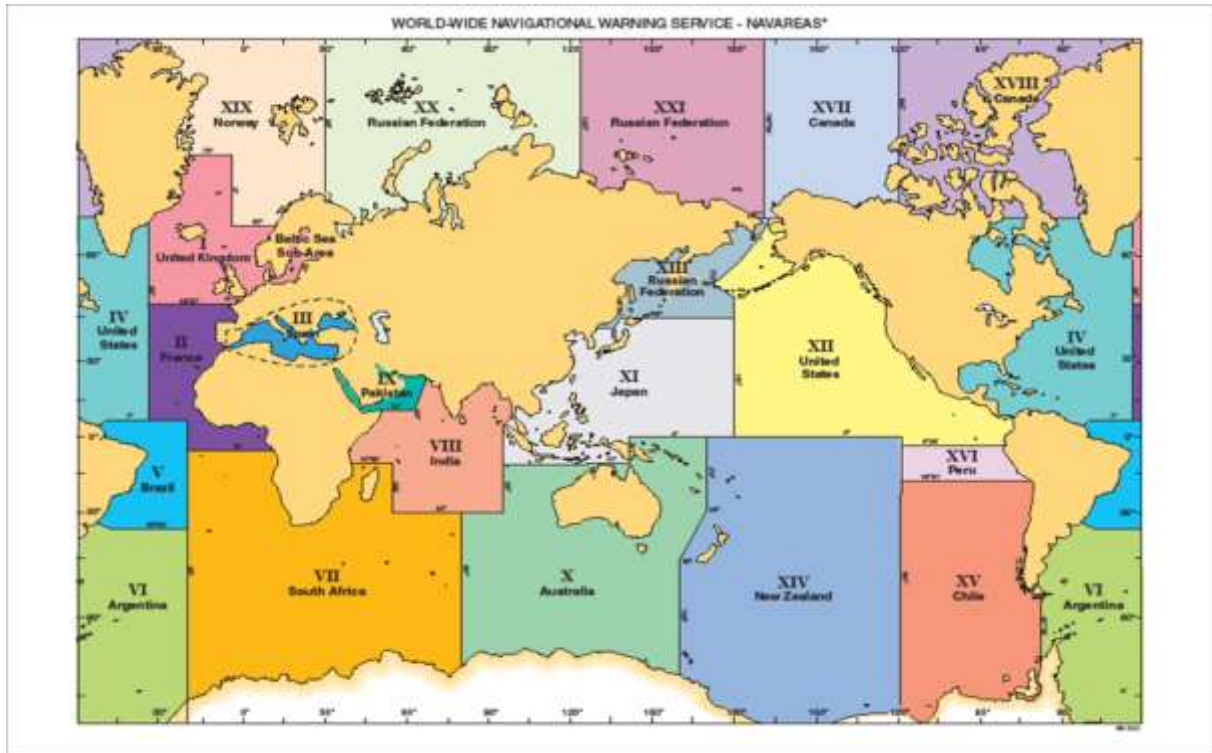
7. Justifications and Impacts

N/A

8. Action requested of the Committee

The Committee is invited to:

- a. take note of the information provided in this report on the outcomes of WWNWS9;
- b. request National Coordinators review the contents of the relevant Annexes of the GMDSS Master Plan and IHO Publication C-55 – *Status of Hydrographic Surveying and Nautical Charting Worldwide* – to ensure consistency for their national entries.
- c. urge the use of the Joint Manual on MSI to ensure correct terminology and formats are used in MSI messages;
- d. encourage closer engagement of the National MSI Coordinators of Member States with the relevant NAVAREA Coordinator(s);
- e. urge close liaison between regional CB Coordinators and the Chair WWNWS-SC on programming and candidate selection for MSI training;
- f. encourage the attendance of Member States and Observers at WWNWS-SC meetings; and
- g. take any other action it considers appropriate.



World Wide Navigational Warnings Service Sub-Committee (WWNWS-SC)**LIST OF MEMBERS as of 15 March 2018****NAVAREA and Sub-area Coordinators Permanent Members****CHAIRMAN/U.S.A. (NAVAREA IV & XII)**

Mr. Peter Doherty
Deputy Director NOX
ATTN: N65-SP
7500 GEOINT Drive
Springfield, VA 22150-7500
Tel: +1 (571) 557 6746
Fax: +1 (571) 557 3261

E-mail: Peter.M.Doherty@nga.mil
Christopher.G.Janus1@nga.mil
NAVSAFETY@nga.mil

ARGENTINA (NAVAREA VI)

Commander Alejandro Lucio José López
Head Maritime Safety Department
Naval Hydrographic Service
Montes de Oca 2124
C 1270ABV Buenos Aires
Tel: +54 11 4301-2249/4301-0061/67 Ext 4028
Fax: +54 11 4301-2249

E-mail: jsnautica@hidro.gov.ar
shn_orgint@hidro.gov.ar

AUSTRALIA (NAVAREA X)

Mr Craig Longmuir
Search and Rescue
Australian Maritime Safety Authority
GPO Box 2181
Canberra, ACT, 2601
Tel: +61 (2) 6230 6811
Fax: +61 (2) 6230 6868
E-mail: Craig.Longmuir@amsa.gov.au

Mr. Peter Naumovski
Nautical Assessment Officer
Australian Hydrographic Office
8 Station Street
Wollongong
NSW2500
Tel: +6 (02) 4221 8500
Fax: +6 (02) 4221 8599
Peter.naumovski@defence.gov.au

BRAZIL (NAVAREA V)

Lt Cdr Alexandre Mattos de Caúla e Silva
Head of Planning and Control Division
Brazilian Hydrographic Center

Rua Barao de Jaceguay, s/n°
Ponta D'Areia - Niteroi - RJ
CEP: 40.048-900
Tel: +55 21 2189-3023
Fax: +55 21 2189-3210

E-mail: caula@marinha.mil.br
segnav@marinha.mil.br

CANADA (NAVAREA XVII & XVIII)

Miss Lucia Bakker
Operational Support
Canadian Coast Guards
Centennial Towers
200 Kent Street
Ottawa
Ontario K1A 0E6
Tel: + 1 613 990 7572
Fax: + 1 613 990 4519

E-mail: Lucia.Bakker@dfo-mpo.gc.ca

CHILE (NAVAREA XV)

Rear-Admiral Patricio Carrasco
Director, Hydrographic and Oceanographic
Service of the Chilean Navy
Errázuriz 254
Playa Ancha
Valparaíso
Tel: +56 32 2266666
Fax: +56 32 2266542
E-mail: hidrografia@shoa.cl

FRANCE (NAVAREA II)

Mr Pierre-Jean Guionin
Assistant Chief of Department
"Informations et Ouvrages Nautiques"
Service hydrographique et océanographique
de la marine
13 Rue du Chatellier
CS 92803
29228 BREST Cedex2
Tel: +33 2 56 31 24 01
E-mail: pierre-jean.guionin@shom.fr
For operational matters concerning NAVAREA II:
Mr Marc Fromentin
marc.fromentin@shom.fr

INDIA (NAVAREA VIII)

Joint Director of Hydrography
 Maritime Safety Information Services (MSIS)
 National Hydrographic Office
 107-A, Rajpur Road
 P.B. No. 75, Dehradun,
 Uttarakhand - 248 001
 Tel: +91 135 2747365
 Fax: +91 135 2748373
 E-mail: msis-inho@navy.gov.in
 (For urgent NAVAREA promulgation) inho@navy.gov.in

JAPAN (NAVAREA XI)

Mr. Shigeru Nishikubo
 Notices to Mariners Office
 Hydrographic and Oceanographic Department
 Japan Coast Guard
 3-1-1, Kasumigaseki, Chiyoda-ku,
 Tokyo 135-8932
 Tel: +81-3-3595 3571
 Fax: +81-3-3595 3647
 E-mail: tuho@jodc.go.jp
jcg-tuho@navareal1.go.jp

NEW ZEALAND (NAVAREA XIV)

NAVAREA XIV Coordinator
 Maritime New Zealand
 RCCNZ
 41 Percy Cameron Street
 Avalon Studios Level 1
 PO Box 30050
 Lower Hutt 5040
 Tel: +64 4 577 8030 (24 hours)
 FAX: +64 4 577 8038 (24 hours)
 E-mail: rcnz@maritimenz.govt.nz (24 hours)
 Website: <http://www.maritimenz.govt.nz/navarea>

NORWAY (NAVAREA XIX)

Mr. Trond Ski
 Department of Maritime Safety
 Norwegian Coastal Administration
 Postbox 1502
 6025 Ålesund
 Tel: +47 33 034808 /
 Tel Direct: +47 70 231064
 Fax: +47 70 231008
 E-mail: trond.ski@kystverket.no

PAKISTAN (NAVAREA IX)

Lt Cdr Manzoor Ahmed PN
 Area Coordinating Office NAVAREA IX
 PN Hydrographic Dept
 11, Liaquat Barracks
 Karachi - 75530

Tel: +92 21 48506151-4
 Fax: +92 21 99201623/99203246
 E-mail: hydrok@paknavy.gov.pk
hydrpk@gmail.com
 Website: www.paknavy.gov.pk/hydro

PERU (NAVAREA XVI)

Rear Admiral David Portilla
 Dirección de Hidrografía y Navegación
 Calle Roca No. 118
 Chucuito, Callao
 Tel: +51-1 465 8312/2078162/2078160
 Fax: +51-1 2078178
 E-mail: dihidronav@dhn.mil.pe

RUSSIA (NAVAREA XIII)

Captain Igor Viktorov
 Chief, Notice to Mariners Division
 Department of Navigation and Oceanography
 Ministry of Defence, Russian Federation
 2 Atamanskaya st.
 St Petersburg 191167
 Tel/Fax: +7 812 717 59 00
 E-mail: unio_navarea@mil.ru

RUSSIA (NAVAREA XX & XXI)

NAVAREA XX / XXI Co-ordinator
 Ръжук Юрий Евгеньевич
 Yuriy Ryzhuk
 Federal State Unitary Enterprise "Rosmorport"
 Bid. 7, 19 Sushevskaya Street
 Moscow
 127055
 Tel: 7 495 626 14 25
 Fax: +7 495 626 12 39
 E-mail: y.ryzhuk@rosmorport.ru
navarea@rosmorport.ru

SOUTH AFRICA (NAVAREA VII)

Captain Theo Stokes
 Hydrographer SA Navy
 Hydrographic Office
 Private Bag X1
 Tokai
 7966 Cape Town
 Tel: +27 (21) 787 2408 or 787 2445/44
 Fax: +27 (21) 787 2233 or 787 2228 (24hrs)
 E-mail: hydrosan@iafrica.com
 Website: <http://www.sanho.co.za/>

SPAIN (NAVAREA III)

Cdr. Alejandro Herrero Pita

Head of the Navigational Area
Instituto Hidrografico de la Marina
Plaza San Severiano No 3
11007 Cadiz
Tel: +34 (956) 599409; 599399
Fax: +34 (956) 599396
E-mail: avisosihm@fn.mde.es
ihmesp@fn.mde.es
<http://www.armada.mde.es/ihm/>

**SWEDEN (BALTIC SUB-AREA,
NAVAREA I)**

Mrs Malin Liljenborg
Baltic Sea Sub-Area Coordinator
Swedish Maritime Administration
NtM/BALTICO
SE-601 78 Norrkoping
Tel: +46 727 29 05 35
E-mail: malin.liljenborg@sjofartsverket.se
ufs@sjofartsverket.se

UNITED KINGDOM (NAVAREA I)

Mr William Van-Den-Bergh MBE
United Kingdom Hydrographic Office
Admiralty Way
Taunton
Somerset TA1 2DN
Tel: +44 1823 723328
Fax: +44 1823 332352
E-mail: william.van-den-bergh@ukho.gov.uk

Secretary DRWG

Mr. Trond Ski
Department of Maritime Safety
Norwegian Coastal Administration
Postbox 1502
6025 Ålesund
Tel: +47 33 034808 /
Tel Direct: +47 70 231064
Fax: +47 70 231008
E-mail: trond.ski@kystverket.no

Coordinator S-124 Correspondence Group

Mr Eivind Mong
eNavigation System Analyst, Electronics and Informatics,
Integrated Technical Services
Canadian Coast Guard
Centennial Towers
200 Kent Street
Ottawa
Ontario K1A 0E6
Tel: + 1 289-983-9134
E-mail: eivind.mong@dfo-mpo.gc.ca

National Coordinators and Participating IHO Member States**CHINA**

Miss.Jun Chi
National Coordinator
Dept of Maritime Traffic Management
Maritime Safety Administration
11 Jianguomennei Avenue
Beijing 100736
China
Tel: +86 10 65292325
Fax: +86 10 65292465
warning@msa.gov.cn

ECUADOR

CPNV-EM Humberto Gómez P
Director, Instituto Oceanografico de la Armada
Casilla de Correos 5940
Guayaquil
Tel: +593 4 2 484 723
+593 4 2 481 300
Fax: +593 4 2 485 166
E-mail: inocar@inocar.mil.ec

EGYPT

Director, Navigation and Hydrographic Department
Ras El Tin
Alexandria
Tel: +20 3 480 1438/3077
Fax: +203 480 2233
E-mail: ashraf.elassal@gmail.com

GERMANY

Mr. Axel Nauendorf
Federal Maritime & Hydrographic Agency
Neptunalle 5
18057 Rostock
Tel: +49 (0) 381 4563 674
Fax: +49 (0) 381 4563 769
E-mail: axel.nauendorf@bsh.de

GREECE

Hellenic Navy Hydrographic Service
Commander Dimitrios Evangelidis HN
Director
Stratopedo Papagou
TGN 1040 Athens
Tel: +30 (210) 6551750; 6551751;
Fax: +30 (210) 6517811
Mob : 0030 6947159169
E-mail: director@hnhs.gr

IRAN

Mr Saeid Parizi
Ports and Maritime Organisation (PMO)
Maritime Affairs Department
South Didar Street Jahan-e Koodak Cross Road
Tehran, 15186
Tel: + 98 21 84931 Ext 2152

Fax: +98 21 84932675
E-mail: hydro@pso.ir
parizi@pso.ir

ITALY

Head Italian Coast Guard Headquarters
Viale Dell'Arte, 16
00143 – Rome
Tel : +390659083226
Fax +390659084793
+39065922737
E-mail : sergio.mingrone@mit.gov.it
navtex@mit.gov.it

MALTA

Mr Joseph Bianco
Hydrographer
Ports and Yachting Directorate
Transport Malta
Malta Transport Centre
Marsa
MRS 1917
Tel: +356 2291 4430
Fax: +356 2291 4429
E-mail: joe.bianco@transport.gov.mt

MONACO

Affaires Maritimes
Quai Jean Charles Rey
BP 468
MC98012 MONACO Cedex
Principauté de Monaco
Tel: +377 93 15 37 00
Fax: +377 93 15 37 15
E-mail: marine@gouv.mc

OMAN

Cdr Saleh Mohammed Al Rahbi
Oman National Hydrographic Office
Bait Al Falaj
P.O Box 113 –Muscat
Postal code 100
Tel (Office): 00968 24312166
(Fax) 00968 24312460

E.mail: nhooman@omantel.net.om

TURKEY

Ms Pervin Keser (Navtex Broadcast Co-ordinator)
(General Directorate of Coastal Safety – Turkish Radio)
Havaalanı E Kapısı Shell Benzinlik Karşısı
34630- Sefakoy -Istanbul
Tel: +90212 4259734
Fax : +90212 5410338
E-mail: Pervin.Keser@kiyiemniyeti.gov.tr

Office of Navigation, Hydrography and Oceanography
(National Co-ordinator)
SHODB, 34805, Çubuklu
Istanbul
Tel: +90 216 322 2580
Fax: +90 216 331 0525
Email: info@shodb.gov.tr
hkuslsroglu@shobd.gov.tr

Ex-Officio Members**IHO**

Mr David Wyatt
 International Hydrographic Bureau
 4B Quai Antoine 1^{er}, BP 445
 MC 98011 MONACO Cedex
 Principauté de Monaco
 Tel: +377.93.10.81.03
 Fax: +377 93.10.81.40
 E-mail: adso@iho.int

Director General
 International Mobile Satellite Organization (IMSO)
 99 City Road
 London EC1Y 1AX
 United Kingdom
 Tel: +44 (0) 20 7728 1497
 Fax: + 44 (0) 20 7728 1172
 E-mail: dg@imso.org
jenny.ray@imso.org

IMO

Mr. Osamu Marumoto
 Maritime Safety Division
 International Maritime Organization (IMO)
 4 Albert Embankment
 London SE 1 7 SR
 United Kingdom
 Tel: +44 (0) 20 7587 3161
 Fax: +44 (0) 20 7587 3210
 E-mail: omarumot@imo.org
hvander@imo.org

WMO

Dr Sarah Grimes
 Officer in Charge
 Marine Meteorology and Ocean Affairs Division
 Weather & Disaster Risk Reduction Service Department
 World Meteorological Organization
 7bis, Avenue de la Paix,
 Case postale No 2300
 CH-1211 Geneve 2
 Switzerland
 Tel: +41 22 730 8242
 Fax: +41 22 730 8128
 Email: sgrimes@wmo.int

Mr. Neal Moodie
 Chair WMO/IOC JCOMM ETMSS
 National Manager - Marine Weather Services
 Bureau of Meteorology, Melbourne
 700 Collins Street
 Docklands
 GPO Box 1289
 Melbourne VIC 3001
 Australia
 Tel: +61 3 9669 4768
 E-mail: N.Moodie@bom.gov.au

IMSO

Capt Moin Ahmed

Expert Contributors**Inmarsat Global Ltd**

Mr John Dodd
99 City Road
London
EC1Y 1AX
United Kingdom
Tel: +44 207 7281095
E-mail: John.Dodd@inmarsat.com

Tel: +1 703 287 7483
Mobile: +1 202 372 5538
E-mail: larry.solomon@iridium.com

SONSAT (inc. AWNIS)

Mr Michael White
BMEZZ 2
United Kingdom Hydrographic Office
Admiralty Way
Taunton
Somerset TA1 2DN
Tel: +44 1823 483446
Mobile: +44 7766 424188
E-mail: michael.white@ukho.gov.uk

Iridium Ltd

Mr Christopher Snowdon
Advisor to Iridium
Access Partnerships Ltd
4th Floor
Broadway Studios
20 Hammersmith Broadway
London
W6 7AF
Tel: +44 20 8600 0630
E-mail: chris.snowdon@accesspartnership.com

Iridium Ltd

Mr Brian Pemberton
Vice-President and General Manager Aviation and
Maritime Businesses
Iridium Satellite
1750 Tysons Boulevard, Suite 1400
McLean
VA 22102
Tel: +1 703 287 7429
Mobile: +1 240 274 2867
E-mail: brian.pemberton@iridium.com

Iridium Ltd

Mr Larry Solomon
Maritime Safety Services Programme Manager
Iridium Satellite
1750 Tysons Boulevard, Suite 1400
McLean
VA 22102