NATO STANDARD

AMP-11(SUPPLEMENT)

NAVAL MINE WARFARE INFORMATION - DATA TRANSFER AND MINE WARFARE DATA CENTRE INTEROPERABILITY

Edition A Version 3

JUNE 2017

NORTH ATLANTIC TREATY ORGANIZATION

ALLIED MINE WARFARE PUBLICATION

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NORTH ATLANTIC TREATY ORGANIZATION (NATO)

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NATO LETTER OF PROMULGATION

1 June 2017

1. The enclosed Allied Mine Warfare Publication AMP-11 (SUPPLEMENT), Edition A, Version 3 – NAVAL MINE WARFARE INFORMATION – DATA TRANSFER AND MINE WARFARE DATA CENTRE INTEROPERABILITY, which has been approved by the nations in the Military Committee Maritime Standardization Board (MCMSB), is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 1116.

2. AMP-11 (SUPPLEMENT), Edition A, Version 3 is effective upon receipt and supersedes AMP-11 (SUPPLEMENT), Edition A, Version 2, which shall be destroyed in accordance with the local procedure for the destruction of documents.

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4. This publication shall be handled in accordance with C-M(2002)60.

Edvardas MAŽEIKIS
Major General, LTUAF
Director, NATO Standardization Office

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NATO NATIONS

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATIONS BY NATIONS

Note

The reservations listed on this page include only those that were recorded at the time of promulgation and may not be complete. Refer to the NATO Standardisation Document Database for the complete list of existing reservations

RECORD OF RESERVATIONS

NATION	SPECIFIC RESERVATIONS
HRV	Reservations refer to the unavailability of the required geospatial data and to insufficient technical capabilities needed to fulfil all the requirements defined for data transfer
LTU	Lithuanian Naval Forces will use the 1st and 2nd methods for transfer of information. MWDC will be connected to NSWAN in 2015
ROU	Lacking (for the moment) of the bilateral accords between Romania and other states related with the transfer of maritime geospatial data

Note

The reservations listed on this page include only those that were recorded at the time of promulgation and may not be complete. Refer to the NATO Standardisation Document Database for the complete list of existing reservations

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3. RELATED DOCUMENTS

a. APP-06 Military Symbols for Land Based Systems.

b. AHP-01 Allied Worldwide Navigational Information System (AWNIS) - (STANAG 1104).

c. ATP-24 Vol I Naval Mine Countermeasures - Tactics and Execution - (STANAG 1132).

d. AHP-07 Dormant "Q" Message Publications - (STANAG 1177).

e. ATP-06 Vol I Naval Mine Warfare Principles - (STANAG 1242).

f. ATP-06 Vol II Naval Mine Countermeasures Operations, Planning and Evaluation - (STANAG 1243).

g. IGEO Geodetic Datums, Ellipsoids, Grids and Grid References - (STANAG 2211).

h. Additional Military Layers (AML) – Digital Geospatial Data Products - (STANAG 7170).

CONVENTIONS

1. WARNINGS, CAUTIONS AND NOTES

Warnings and cautions are not used in this publication. The following definition applies to notes used throughout this publication.

Note

A note is used to highlight to the reader, any operating procedure, practice or condition that requires emphasis.

2. CHANGE SYMBOLS

Revised text in this document is indicated by a black vertical line in the outside margin of the page. The change symbol indicates added or restated information. A change symbol adjacent to the chapter number, annex number or appendices number and title indicates a new or completely revised chapter, annex or appendices.

3. RESERVATIONS

Reservations of Nations are indicated by a capital letter 'R' in bold text positioned in the outside margin adjacent to the text to which the reservation applies. Details of the reservation will also be recorded on pages VI/VII of the Preliminary pages.

4. WORDING

Word usage and intended meaning throughout this publication is as follows:

'Shall' indicates the application of a procedure is mandatory.

'Should' indicates the application of a procedure is recommended.

'May' and 'need not' indicates the application of a procedure is optional.

'Will' indicates future time. It never indicates any degree of requirement for application of a procedure.

CHAPTER 1 - INTRODUCTION

0101 General

1. Nations with Mine Warfare Data Centres (MWDCs) have bespoke systems to manage Naval Mine Warfare (NMW) information and the way this information is received or transmitted from/to NMW forces could be completely different from one nation to another.

2. Secondly, the mix of national NMW assets within a NATO Task Group (TG) or Task Unit (TU) make it is necessary to standardize the way the information is managed in order that such data is received in a secure, effective, expeditious manner and in a useable format.

3. This publication provides the necessary formats and methods agreed by NATO Nations for promulgating and exchanging NMW information between NMW Units and National MWDCs. The formats and methods are those previously contained separately in STANAG 1116 and STANAG 1456 which were subsequently combined into a single STANAG 1116.

4. Environmental information provided in a Naval Mine Warfare Electronic Pilot (NMWEP) or in a Level 3 Signal Message (as described in para 0103), should support in form and content the requirements of current Allied Naval Mine Warfare publications namely ATP-06, ATP-24, AHP-07, AMP-16 and AMP-17.

0102 Naval Mine Warfare Electronic Pilots

1. The Operational Command will designate areas of special interest to NMW planners. To support this planning, NMWEPs should be produced. Initially when the NMW objective areas are first designated, only limited data may be available. However it is important that NMWEPs are produced using the limited data available, progressing their development over time as the collection of information gathers pace or is accomplished.

2. This publication defines the general content of the NMWEPS on the assumption that should Naval Mine Warfare (NMW) forces be tasked to operate in another nation's waters they would be issued with a copy of the NMWEP by the appropriate national authority. There is no prescribed solution for the software that should be used to deliver NMWEPs other than what ever solution is chosen by individual nations, it should either be self-extracting or delivered with the appropriate software to enable the information to be viewed.

3. NMWEPs should contain information on the environment affecting NMW, priority being given to the areas and routes most likely to be used by shipping in times of conflict.

4. National authorities are responsible for the production and updating of the data sets covering their areas of responsibility as described in MC 296/1 para. 5.

5. A list of available NMWEPs is at Annex 1A. Requests for information from nations who produce NMWEP instead of paper MW Pilots are to be made to the nation’s MWDC who will determine the information to be supplied. At the time of writing DEU and GBR may provide MW information in electronic form on request. CAN produces NMWEPs on a 'as required' basis and therefore a request must be forwarded to the Maritime Survey Office as early as possible. DEU and POL publish paper MW Pilots in AMP-11 Vol V and Vol XV. See other volumes of AMP-11 for paper MW Pilots from all other countries.

0103 Level 3 Data Transfer

National MWDCs will also produce and transfer data in a digital form and it is essential that provision is made to transfer up-to-date, significant information. For urgent operational commitments when they do not permit the preferred means of promulgation (e.g. as an Additional Military Layer (AML)) a Signal Message may be used in the Level 3 format described in detail in Chapter 2.

0104 Geodetic Datum

In accordance with current NATO Doctrine and to standardize positional information all NMW forces shall be capable of receiving and transmitting data in latitude and longitude referred to geodetic datum WGS 84.

0105 Other NMW Information

1. Pre-determined Q-Routes are listed in AHP-07.

2. The Q-Message System, used by activated AWNIS Authorities to promulgate certain types of NMW information in times of conflict, is described in AHP-01.

ANNEX A TO CHAPTER 1 - LIST OF AVAILABLE NMW ELECTRONIC PILOTS (NMWEP)

1A01 Introduction

Table 1A-1 lists the available hard copy NMW Pilots and the available NMW Electronic Pilots (NMWEPs)

Table 1A-1. List of Available NMW Pilot Formats

VOLUME/PART	CUSTODIAN NATION	HARD COPY MW PILOT	NMW ELECTRONIC PILOT (NMWEPS)	Remarks
AMP-11, Volume 01	BEL/NLD			
AMP-11, Volume 02	CAN		As Required	
AMP-11, Volume 03	DNK			
AMP-11, Volume 04, Level 1, Part 1 AMP-11, Volume 04, Level 1, Part 2 AMP-11, Volume 04, Level 1, Part 3 AMP-11, Volume 04, Level 2	FRA	None	Only NMWEPS of the four parts	Some corrections are expected in 2016
AMP-11, Volume 05, Part 1 AMP-11, Volume 05, Part 2	DEU	Old and outdated pilots still exist.	DEU MWDC provides detailed NMWEPs on request.	All meteorological, hydrographical and seabed as well as tactical information can be provided in different AMLs of respective classification.
AMP-11, Volume 06, Part A	GRC	None	NMWEPS available	
AMP-11, Volume 07, Part A AMP-11, Volume 07, Part B AMP-11, Volume 07, Part C AMP-11, Volume 07, Part D AMP-11, Volume 07, Part E AMP-11, Volume 07, Part F	ITA	None	ITA MWDC produces NMWEPs on a 'as required' basis.	ITA have now compile the following NMWEPs: - ITA Territorial Waters; - Mediterranean Sea, Black Sea, Red Sea, Horn of Africa waters and Persian/Arabian Gulf in international waters and non NATO countries TTW in accordance of the Memorandum of Understanding (MOU) between the Ministry of Defence of the Republic of Italy and Supreme Headquarters Allied Powers Europe regarding use of the Mine Warfare Data Centre of the Italian Navy Command of MCM Forces (MARICODRAG) as “Mine Warfare Database” in support of Allied Maritime Command (MARCOM).

Table 1A-1 (Cont). List of Available NMW Pilot Formats

VOLUME/PART	CUSTODIAN NATION	HARD COPY MW PILOT	NMW ELECTRONIC PILOT (NMWEPS)	Remarks
AMP-11, Volume 08, Part 1 AMP-11, Volume 08, Part 2 AMP-11, Volume 08, Part 3 AMP-11, Volume 08, Part 4	ESP		ESP in the process of converting hard copy pilots to NMWEPs	ESP in the process of converting hard copy pilots to NMWEPs.
AMP-11, Volume 09	NOR			
AMP-11, Volume 10	PRT			
AMP-11, Volume 11	TUR			
AMP-11, Volume 12, Part A AMP-11, Volume 12, Part B AMP-11, Volume 12, Part C AMP-11, Volume 12, Part D	GBR	None	GBR Issue NMWEPs which cover the previous four parts of AMP-11 Vol 12	GBR compile the following NMWEPS: UK North UK South The following NMWEPs are also available: North Training Pilot South Training Pilot Joint Warrior(JW) Pilot (issued to all JW participants)
AMP-11, Volume 13, Part 1 AMP-11, Volume 13, Part 2 AMP-11, Volume 13, Part 3 AMP-11, Volume 13, Part 4	USA			US Naval Oceanographic Office maintains the data for AMP 11 Vol 13. Selected information can be produced upon request.
AMP-11, Volume 14	ISL			
AMP-11, Volume 15	POL			
AMP-11, Volume 16	LTU			
AMP-11, Volume 17	LVA			
AMP-11, Volume 18	EST			

CHAPTER 2 - STRUCTURE OF NAVAL MINE WARFARE ELECTRONIC PILOTS (NMWEP)

0201 Introduction

The Naval Mine Warfare Electronic Pilots shall contain up to three levels of information. All three levels of information shall be presented, as far as possible in a form suitable for ease of use with computer systems. The security classification will depend on the classification of its content, and operational considerations. The three levels are described in para 0202.

0202 Levels of Information

1. Level 1. General information concerning the area of responsibility. Data may be available within the NMWEP or reference made to another readily available publication (eg. Environmental Briefing Docket (EBD)).

2. Level 2. Detailed information on environmental factors in the routes and/or areas of special interest.

3. Level 3. Detailed information that should be updated as frequently as possible. This information shall be promulgated to forces being tasked in a particular area.

0203 Content of Level 1 Information

1. Introduction. This background information, where available, may be either included within the NMWEP or reference made to other relevant and readily available publications:

a. Nature of the Area. A general summation of the gross characteristics to be encountered in this area.

b. Coastal Topography and Navigation. This includes general information on marginal topography, important natural and man-made navigational landmarks, hazards and facilities.

c. Human Activity. This includes general information on population factors, fisheries and fishing craft, port activities, recreational activities, military activities, military and civilian training areas, cables, pipelines, industrial activities such as oil rigs, commercial factories and refineries and power plants.

d. Climatology. This includes general information on climatic conditions, duration of darkness and natural light, visibility conditions, air temperature, winds, precipitation, frequency of storms and icing conditions.

e. Water Depth. General information on bathymetry and water depth fluctuation due to tides, seasonal storm and run-off (fresh water flood) conditions.

f. Obstacles and Obstructions. General information on obstacles to surface or sub-surface navigation.

g. Waves. General information on sea and swell conditions and surf characteristics.

h. Currents and Tidal Streams. General information on surface and sub-surface current patterns, including tidal and riverine originated currents.

i. Sea Ice. General information on occurrence and characteristics of surface ice.

j. Physical Properties of Seawater. This includes water temperature, salinity, underwater visibility and turbidity.

k. Seabed Characteristics. This includes general information on bottom relief, bottom materials, bottom strength and stability, depth of sediment and mine burial and seaweed.

l. Acoustic Environment. General information on sound velocity structure. Acoustic propagation/attenuation, acoustic scattering and reverberation and ambient noise.

m. Magnetic Environment. General information on electrical resistivity, magnetic fields and anomalies.

n. Bottom Pressure. General information on pressure fluctuations.

o. Biological Environment. General information on bio-fouling conditions, hazardous marine life and schooling characteristics.

0204 Content of Level 2 Information

1. Introduction. This provides detailed environmental information on routes and areas and should include the following, where available:

a. Positions.

(1) On a route, waypoint positions shall be expressed in latitude and longitude as in AHP-07 to a minimum of three decimal places of a minute.

(a) Examples

40º 12'.222N 75º 00’.252W
or
+4012.222 -07500.252

(2) Should the distance between adjacent lettered positions on a route be so great that the maximum separation between loxodromic route (rhumb line) and orthodromic route (great circle) is greater than 10 metres, then sufficient intermediate positions shall be defined to ensure that the separation between rhumb line and great circle shall be less than 10 metres. The intermediate position shall be labelled in accordance with AHP-07 and ATP-06 Vol II (para 0109-5 (J)).

(3) Wrecks, cables, pipelines, significant bottom features and minelike objects shall appear in such a way that their locations relative to a route or reference point are readily seen. The precise position of salient objects shall also be given in the format above.

b. Bearings. The up and down bearings along the various sections of the route shall be given.

c. Aids to Navigation

(1) Salient landmarks and fixed seamarks likely to be used in precise navigation shall be displayed or described. In addition their precise point positions shall be provided.

(2) All radio navigational aids in the area shall be identified. Where practicable the fixed and variable errors should be shown.

d. Water Depth. All water depth information shall be relative to the chart datum and expressed in metres.

e. Sea Level Information

(1) Sea Level information should be given when it is deemed to have operational significance.

(2) Tidal Stream information at the surface and at depth shall be given in such a form that directions and rates at various stages of the tidal cycle can be derived.

(3) Sea Level change information due to meteorological conditions.

f. Mine Burial. The likelihood of mine burial on impact and the rate and cause of subsequent burial shall be indicated in accordance with ATP-06. Burial shall be expressed as a percentage related to a mine case mass of 500 kg and if available, μ_b

g. Pressure Mines. Information about pressure fluctuations (a and T) at the seabed shall be given, in accordance with ATP-06 Vol II and AMP-16.

h. Acoustic Minesweeping. Acoustic transmission loss parameters k1 and k2 for the nominal frequency bands of national acoustic sweeps shall be given in accordance with ATP-06 Vol II and AMP-16.

i. Magnetic Minesweeping. Magnetic sweep parameters Q and ED/AD shall be given in accordance with ATP-06 Vol II and AMP-16.

j. Mechanical Minesweeping. Any salient objects or seabed features which may affect mechanical minesweeping operations shall be indicated.

k. Acoustic Minehunting. Bottom type and clutter density as defined in ATP-06 Volumes I and II, and the fraction of undetectable mines (u') shall be given together with any environmental factor which materially affects the performance of minehunting sonars.

l. Magnetic Minehunting. Information about the density of metallic clutter and the position of magnetic anomalies which may affect magnetic minehunting sensors shall be given.

m. Diving, Underwater Vehicles and Visual Minehunting. Information about weed, sediment, underwater visibility and any other factor which affects the performance of divers, underwater vehicles or minehunting shall be given.

0205 Content of Level 3 Information

1. Introduction.

a. It is essential that provision is made to transfer up-to-date, significant information for urgent operational commitments when they do not permit the normal means of promulgation (eg. as an AML). The parameters and formats in Level 3 have been defined to facilitate the transfer of data in digital form. There are two types of Level 3 detailed data, namely:

(1) Contact data.

(2) Specific environmental data which has been updated.

b. The transfer of these two types of data will be preceded by general data relating to the detailed data. When completed this transfer message is to be classified in accordance with the highest classification of the content. More detailed information regarding the size, format and examples of Level 3 data format is available at Annex A.

2. Level 3. General Data. The data transfer message starts with the block $GENDAT and comprises the following components:

a. Originator.

b. Date and time group (time zone ZULU).

c. Identifier format for:

(1) Channel/route identifier CHANDAT.

Start position Q-Route waypoint designator from AHP-07.

Start position (Degrees, Minutes and decimal Minutes to three decimal places)

End position Q-Route waypoint designator from AHP-07.

End position (Degrees, Minutes and decimal Minutes to three decimal places).

Channel width in metres.

Or

(2) Area identifier AREA.

Area designator from AHP-07.

Corner Position (Maximum no. of Positions - 10).

Or

(3) Circular area identifier CIRC.

Circular area designator.

Circle Centre position (Degrees, Minutes and decimal Minutes to three decimal places).

Radius in metres.

d. Geodetic Datum (IAW. STANAG 2211 IGEO e.g WGS84).

3. Level 3 - Environmental Data. This data block, with the header $ENVDAT, is transferred to achieve the optimum employment of the MCMV in the operational area. The environmental data block has no position but should be associated to the position of either CHANDAT, AREA or CIRC identifier.

a. Bottom Composition - Type of bottom composition/grain size.

b. Bottom Type. In accordance with ATP-24 Vol 1 (permitted characters A - D).

c. Clutter density. Minelike Echo (MILEC) Density (permitted values 0-4 iaw ATP-24 Vol I), followed by Non-Mine Minelike Bottom Object (NOMBO) Density (expressed as NOMBOS per square nautical mile (nm), IAW AMP-17).

d. Burial. Estimated burial in percentage, followed by period (expressed as either D-day, W-week, M-month, Y-year) and followed by 30 characters of free text.

e. Bottom Reverberation. Expressed as either H (High), M (Medium) or L (Low).

f. Underwater Visibility at the Seabed. Estimated minimum/maximum in metres.

g. Vegetation. Expressed as Prairies Density, followed by Foliar Index, followed by free text, to describe seasonal variability or other significant detail. (Prairies Density is defined as the number of plants per square metre; Foliar Index is defined as the surface value in square centimetres of one significant leaf and is obtained by multiplying leaf length by leaf width).

4. Level 3. Contact Data. This data block, with the header $CONDAT, should only consist of authorized and non mine bottom objects/contacts and comprises the following components:

a Date and time group of last observation (time zone ZULU).

b. Contact identifier.

c. Position. Degrees, Minutes and decimal Minutes to three decimal places.

d. Accuracy Error Ellipse Data. Major and minor axis and orientation.

e. Contact amplifying data.

f. Object Length in metres.

g. Object Width in metres.

h. Object Height in metres.

i. Orientation in degrees (True).

j. Optimum Arc in degrees (True) from Bearing to Bearing, relative to the object in which the object is best viewed/ observed.

k. Scour Length in metres.

l. Scour Depth in metres.

m. Scour Aspect in degrees (True).

n. Water depth in contact position reduced to chart datum in metres.

o. Description. Coded description of object (non-minelike).

(1) Permitted Codes:

W – Wreck.
A – Anchor.
F - Little wreck or metallic fragments.
C - Chain or Rocks.
R - Separate Rock.
D – Drum.
H - Hole or Hollow.
L - Lost Container.
S – Other.

0206 Medium for Digital Data Transfer

The medium (tape or disc) to be used for the transfer of MW digital data should be arranged individually between the transferring data centres (see Chapter 3) and is determined by the hardware configuration installed at each location at any particular time. This is likely to change following technological advances and hardware updates, so the choice of a single standard medium is not practicable. Security reasons may dictate the means of transfer, either on-line or off-line.

CHAPTER 3 - INTEROPERABILITY BETWEEN MINE WARFARE DATA CENTRES

0301 Data, Data Format and Data Display

For reason of interoperability the data, data format and data display must be IAW with STANAG 7170 and APP-6. By doing so nations will ensure that only NATO symbols are exchanged.

0302 Methods

There are three methods in the transfer of information; each one will be performed using a specific procedure. Methods and procedures are detailed in following paragraphs. Transfer of classified information shall occur within a NATO approved security system. Secure and non-secure networks should remain separated with an air gap.

0303 Method 1

1. Purpose. The transfer of information by mutually agreed media through the post or courier service. (This method is considered to be the less desirable, and should only be used if Methods 2 or 3 are not possible due to lack of necessary hardware and/ or software tools).

2. Procedure

a. A nation requesting data will contact the providing nation stating the geographical area and environmental parameters it requires. A standard format is contained at Annex B

b. The nation receiving the request (the provider) will be responsible for verifying the ownership and classification of the data before complying with the request (i.e. the data is checked for any bi-lateral agreements in force regarding the data). Only after third party agreement (if required) can the data be released.

c. The provider will then send the data in the agreed AML format as described in STANAG 7170, on mutually agreed media via postal or courier service.

0304 Method 2

1. Purpose. The offline transfer of information from the MWDC through the Internet, or the NSWAN system (see note).

Note. *Request of NSWAN services remains a national responsibility.*

2. Procedure.

a. A requesting nation will contact the provider nation as in Method 1.

b. The provider will verify the ownership as in Method 1.

c. The provider will then send the data in the agreed AML format, as an attached file via the Internet (with the NATO approved security system for classified data) or the NSWAN system.

0305 Method 3

1. Purpose. The online browsing and downloading of information as in method 2 through the Internet or NSWAN using formal procedures. Method 3 is a procedure to be adopted when Nations MWDC are physically connected to the NSWAN or the Internet. Data could be sent or received via the NSWAN (preferred system) or Internet (unclassified data only) electronically by Nation's MWDC directly. When REA command and support centres are activated, releasable REA data will also be accessible via NSWAN. Data ownership and valid authorization to release it to the requestor must be checked by the provider either manually or automatically.

2. Procedure.

a. The nation requesting data interrogates the MWDC web page on the NSWAN or Internet and browses the Nation's Metadata and his entitlement.

b. Nation requesting data then completes data query column of catalogue and submits request. This can be augmented by signal request also. An example of the Signal Format is at Annex B.

c. Data can either be downloaded directly or sent by the provider as a file to requester's WEB page.

0306 Levels of Data - Metadata

1. The terms "Data Catalogue" and "Metadata" are used to indicate the information about the data holdings of the MWDC that each Nation want to publish to other Nations so that they know what is available. Metadata must include the ownership and the geographic coverage of a data set.

2. This data will be produced as hard copy in Method 1 or, posted on the NSWAN or Internet for Methods 2 and 3. The data catalogue should show what information is available for exchange and be organised in such a way that nations only see their own entitlements.

3 The AML product range includes a Data Set of MW Attributes and Parameters that can be exchanged. Information on the Attributes and Parameters can be found at STANAG 7170.

4 To aid the providers of information, requestors should specify the data required by using the line number within the Data Set of MW Attributes and Parameters. Requestors could also use paragraphs 0203 to 0205 in Chapter 2 to specify the Level of Data they are requesting.

0307 Technical Issues

1. In order to transfer static information there needs to be an understanding of the minimum requirements for MWDC. Nations will need to ensure that their national MWDC are capable of providing and receiving data in the Additional Military Layers format. (Technical information regarding AML can be found at STANAG 7170).

2. In order for nations to implement Methods 2 and 3 they need to ensure that they have access to either the Internet, with a NATO approved secure system installed, should classified data be transferred, or the NSWAN system. National MWDCs are responsible for setting up their MWDC web pages, creating a download interface and connection to the NSWAN system.

3. Method 3 calls for the MWDC to be connected to either the Internet or the NSWAN system. Nations should note that the security of their national MWDC remains a national responsibility. It is not intended that National MWDC be accessed by other nations via Internet or the NSWAN system, but it is envisaged that data can be sent from a MWDC to the NSWAN electronically thus negating the need to transfer the information to the appropriate media.

0308 National Points of Contact

Annex 3C lists the details of the points of contacts for nations MWDCs.

ANNEX A TO CHAPTER 3 - DETAILED SPECIFICATION FOR THE FORMAT OF LEVEL 3 INFORMATION

3A01 Introduction

Level 3 data format can contain three kinds of data records:

a. General data ($GENDAT)

b. Environmental data ($ENVDAT)

c. Contact data ($CONDAT)

Notes:

1. All data is written in ASCII.

2. Additional headers are used for data identification.

3. Unknown data is represented by " - " (ASCII char 045)

4. The environmental data block has no position so should be associated to the position of either a CHANDAT, AREA or CIRC identifier

3A02 Level 3 Test Data File

A Level 3 test data file "Level 3 example data.txt" has been produced that contains unclassified example data which can be used for testing purposes. This file can be downloaded from the UKHO NSWAN site at http://nww.hydro.uk.nato.int.

Table 3A-1. Level 3 Data Formats

	Column name	Size	Format	Example	Notes
	Header General Data	7	$GENDAT	**$GENDAT**	
12a	Originator	15	freetext	UK_MWDC	
12b	Year, date and time	10	YYMMDDHHMM	0111081125	DTG Timezone ZULU (YY-year, MM-month, DD-day, HH-hour, MM-minutes)
For routes:					
12c1	Header route designator	7	CHANDAT	CHANDAT	
	Route start position designator	8	DDDLDD.D	539a00.0	AHP7 designator
	Route start lat/long & checksum	4.5/5.5	DDDD.DDDLD/DDDDD.DDDLD	5035.936N1/00009.194W3	
	Route end position designator	8	DDDLDD.D	539b00.0	AHP7 designator
	Route end lat/long & checksum	4.5/5.5	DDDD.DDDLD/DDDDD.DDDLD	5040.036N8/00010.394W7	
	Channel width (metres)	4	DDDD	1852	
Or for areas:					
12c2	Header Area Designator	4	AREA	AREA	
	Area Designator	3	DDD	121	Area id. From AHP7
	Corner Position Lat/Long & checksum	4.5/5.5	DDDD.DDDLD/DDDDD.DDDLD	5215.000N3/00336.000E2	Maximum number of Positions = 10
	Corner Position Lat/Long & checksum	4.5/5.5	DDDD.DDDLD/DDDDD.DDDLD	5216.678N5/00336.000E2	
	Corner Position Lat/Long & checksum	4.5/5.5	DDDD.DDDLD/DDDDD.DDDLD	5218.800N4/00336.550E2	
Or for circular areas:					
12c3	Header Circle designator	4	CIRC	CIRC	
	Circle designator	15	freetext	MDA1	
	Circle centre position & checksum	4.5/5.5	DDDD.DDDLD/DDDDD.DDDLD	5216.253N4/00336.270E1	
	Radius (metres)	5	DDDDD	01852	
12d	Geodetic Datum	15	freetext	WGS84	IAW STANAG 2211

Table 3A-1 (Cont). Level 3 Data Formats

	Column name	Size	Format	Example	Notes
	Header Environmental Data	7	$ENVDAT	**$ENVDAT**	
13a	Bottom Composition	20	freetext	Sand Wave Area	
13b	Bottom Type	1	L	D	Letters A - D [IAW ATP-24 Vol 1 Chap-4]
13c	Clutter Density	5	D/DDD	1/132	MILEC Density/NOMBOs nm² [IAW AMP-17 / ATP-24 Vol 1]
13d	Burial Percentage	3/1/up to 29	DDD/L/freetext	100/W/rugged	Estimated burial %/Period/freetext (Period = D-day, W-week, M-Month or Y-Year)
13e	Bottom Reverberation	1	L	H	High (H), Medium (M) or Low (L)
13f	Underwater Visibility (min/max)	2.2/2.2	DD.DD/DD.DD	10.00/20.50	
13g	Vegetation	4/3/up to 30	DDDD/DDD/freetext	0002/050/kelp	Prairies Density/Foliar Index/freetext (Prairie density defined as no. of plants per m², Foliar Index defined as surface value in cm² of one leaf)
	Header Contact Data	7	$CONDAT	**$CONDAT**	
14a	Year, date and time	10	yymmddhhmm	9601011201	DTG Time Zone ZULU
14b	Contact identifier	15	freetext	6	
14c	Contact position lat/long & checksum	4.5/5.5	DDDD.DDDLD/DDDDD.DDDLD	5040.935N6/00010.658W0	
14d	Accuracy Error Ellipse	3.1/3.1/3	DDD.D/DDD.D/DDD	030.0/030.0/070	Major Axis/Minor Axis/Orientation (degrees)
14e	Amplifying Data	15	freetext	Oildrum	
14f	Object Length (metres)	3.2	DDD.DD	002.00	
14g	Object Width (metres)	3.2	DDD.DD	003.00	
14h	Object Height (metres)	3.2	DDD.DD	001.00	
14i	Orientation(degrees)	3	DDD	020	

Table 3A-1 (Cont). Level 3 Data Formats

	Column name	Size	Format	Example	Notes
14j	Optimum Arc (degrees)	3/3	DDD/DDD	180/190	Bearing to bearing, relative to the object, in which it best observed
14k	Scour Length (metres)	3.2	DDD.DD	007.00	
14l	Scour Depth (metres)	3.2	DDD.DD	000.80	
14m	Scour Aspect (degrees)	3	DDD	030	
14n	Water depth (metres)	3.2	DDD.DD	---.--	Unknown data is represented by " - " ((ASCII char 045)
14o	Description	1	L	D	Coded Description: W – Wreck A – Anchor F - Little wreck or metal fragment C - Chain or Rocks R – Rock D – Drum H - Hole or Hollow L - Lost Container S - Other
NATO-UNCLASSIFIED					

ANNEX B TO CHAPTER 3 - SIGNAL FORMAT FOR REQUESTING DATA

TO

FM

INFO

SIC

CLASSIFICATION

REQUEST FOR MW ENVIRONMENTAL DATA

1. GEOGRAPHIC AREA.

2. LEVEL OF DATA IAW AMP11 SUPPLEMENT CHAPTER 2 PARAS 0202 TO 0205.

3. LINES OF DATA IAW THE MW DATA SETS WITHIN AML STANAG 7170.

4. REMARKS. (TO INCLUDE ANY INFORMATION THAT WILL AID THE PROVIDER GIVING THE REQUESTED DATA).

ANNEX C TO CHAPTER 3 - NATIONAL MWDC CONTACT DETAILS

Table 3C-1 - National MWDC Contact Details

NATION	POSTAL ADDRESS	TELEPHONE No.	EMAIL ADDRESS	SIGNAL MESSAGE ADDRESS (SMA)
BEL	ABNL/MWC-NMW/MSCNMW/EGM Rm 1.14 BEL-NLD Mine Warfare School EGUERMIN 3de en 23ste Linieregimentsplein 8400 Oostende Belgium	Office: +3259563391 and/or GSM: +32475460507	abnl-nmwmsc@mil.be NSWAN: EGUERMIN HEAD MISSION SUPPORT CENTRE	(RQFNO /) MWC ABNL NMWMSC
BUL	TBA			
CAN	Canadian Forces Atlantic Headquarters (FAO: Maritime Survey Officer) PO Box 99000, Station forces Halifax, N.S Canada	(902) 427 7759	Scott.Moody@forces.gc.ca	CANFLTANTHQ//MSO//
DNK	Defense Centre for Operational Oceanography (DCOO) Forsvarsministeriets Materiel-og Indkøbsstyrelse Attn: Forsvarets Center for Operativ Oceanografi (FCOO), Lautrupbjerg 1-5 DK-2750 Ballerup Denmark	Commercial: +45 72815641 Mobile: +45 22505855	UNCLASSIFIED: bja@fcoo.dk fmi-ma-chomo@mil.dk NSWAN: DCOO DNK BJA	DCOO DNK
EST	PO Box 1549 Tööstuse 54a Tallinn 10402 Estonia	+372 717 7321	villu.klesmann@mil.ee	COMESTNAV
FRA	BCRM de Brest – ALFAN Brest CC 40 29240 Brest CEDEX 9 FRANCE	+33298140457 +33298240956	alfan-brest-mw-opsnat.chef-bureau.fct@intradef.gouv.fr	ALFAN BREST DIVISIONS

Table 3C-1 (Cont) - National MWDC Contact Details

NATION	POSTAL ADDRESS	TELEPHONE No.	EMAIL ADDRESS	SIGNAL MESSAGE ADDRESS (SMA)
DEU	Navy Headquarters GERMAN MWDC Kopernikusstraß1 18057 ROSTOCK Germany	+49 381 802 52644	UNCLASSIFIED: MarKoEinsGeo05@bundeswehr.org NSWAN (Classified): navoffgeo1@navy.ge.nato.int navoffgeo1@mar.op	MM-MARKDO-ABT-EINSATZ-GEOINFO-ROSTOCK
ESP	Centro de Datos de Guerra de Minas Fuerza de MCM Arsenal de Cartagena C/Real S/N 30290 Cartagena Naval Murcia Spain	+34 968 127423	mwdc_esp@mde.es NSWAN CDGM@navyphq.esp	MECOMDAT
GBR	UK Mine Warfare Data Centre, Beaufort Room 209 Terrestrial Team Scientific Analysis Group The United Kingdom Hydrographic Office. Admiralty Way Taunton, Somerset TA1 2DN United Kingdom	+44 (0)1823 484245	UNCLASSIFIED: robin.ponting@ukho.gov.uk or UKHO-DMGIC-MWTeamLeader@mod.gov.uk	HYDROUK TAUNTON 'FAO; MWDC' as 1st Line of text
GRC	HELLENIC MINEWARFARE COMMAND MWDC- SALAMIS NAVAL BASE – POSTAL CODE 18900	00302104648431 00302104648440	dnar_ke@navy.mil.gr	HELMINECOM SALAMIS GRC
HUN	TBA			
ITA	MARICODRAG Viale Amendola, 1 19121 - LA SPEZIA ITALY	+39 0187 782803	UNCLASSIFIED: Maricodrag.mwdc@marina.difesa.it NSWAN: cfdnitds1@medcent.nato.int	MARICODRAG LA SPEZIA

Table 3C-1 (Cont) - National MWDC Contact Details

NATION	POSTAL ADDRESS	TELEPHONE No.	EMAIL ADDRESS	SIGNAL MESSAGE ADDRESS (SMA)
LVA	Latvian Mine Warfare Data Centre Ronu 2 Liepaja LV 3401 LATVIA	+371 634 04 263	navyhq@mil.lv mwdc@mil.lv NSWAN lvnavyregistry@mod.lv.nato.int	
LTU	TBA			
NLD	RNLN Hydrographic Office MEIC PO. Box 90701 2509LS The Hague The Netherlands	+31703162803	MEIC@mindef.nl NSWAN: NLD NAVY MEIC DEPHMEIC	RNLN MEIC
NOR	Norwegian Naval Mine Warfare Data Centre POB 50 Haakonsvern Naval Base N-5886 Bergen Norway	+47 55 50 40 86 +47 55 50 40 88	jarnsen@mil.no kaengen@mil.no	None
POL	Centrum Operacji Morskich – Dowodztwo Komponentu Morskiego Wydzial Danych Wojny Minowej Waszyngtona 44 str. 81-301 Gdynia Poland	+ 48 261 26 38 03 + 48 261 26 38 16	polmwdc@mw.mil.pl	None
PRT	TBA			
ROU	Romanian Hydrographic Directorate ROU Mine Warfare Data Centre Fulgerului No. 1 900218 Constana Romania	+04(0) 214 651 040	UNCLASSIFIED: centruldemine@dhmfn.ro NSWAN camelia.sandu@mod.rou florin.constantinoiu@mod.rou	

NATION	POSTAL ADDRESS	TELEPHONE No.	EMAIL ADDRESS	SIGNAL MESSAGE ADDRESS (SMA)
SVK	TBA			
SVN	TBA			
TUR	Mayin Harbi Veri Merkezi Amirliği Erdek/Balikesir/Turkey	0090 2668 35 1070 (2920)	None	COMTURMINGROUP
USA	Naval Oceanographic Office 1002 Balch Boulevard ATTN: Mine Warfare Department, Code NP6 Stennis Space Center, MS 39522-5001 USA	(228) 688-5767	cso.navo.fct@navy.mil.	NAVOCEANO STENNIS SPACE CENTER

LEXICON OF ACRONYMS AND ABBREVIATIONS

A

AAP	Allied Administrative Publication
AHP	Allied Hydrographic Publication
AJP	Allied Joint Publication
AML	Additional Military Layer
APP	Allied Procedural Publication
ATP	Allied Tactical Publication
AWNIS	Allied Worldwide Navigation Information System

C

CHANDAT	Channel Data
CIRC	Circle
CONDAT	Contact Data

E

EBD	Environmental Briefing Document

G

GENDAT	General Data

I

IGEO	Inter-service Geographic Working Group

M

MC	Maritime Commander or Military Committee
MCM	Mine Countermeasures
MCMV	Mine Countermeasures Vessel
MILEC	Minelike Echo
MW	Mine Warfare
MWDC	Mine Warfare Data Centre

N

NATO	North Atlantic Treaty Organisation
NGIA	National Geospatial Intelligence Agency
NMCM	Naval Mine Countermeasures
NMW	Naval Mine Warfare
NOMBO	Non-Minelike Bottom Object
NSA	NATO Standardisation Agency
NSWAN	NATO Secret Wide Area Network
NU	NATO-UNCLASSIFIED
NMWEP	Naval Mine Warfare Electronic Pilot

R

REA	Rapid Environmental Assessment

S

STANAG	Standardisation Agreement

T

TG	Task Group
TU	Task Unit

W

WGS	World Geodetic System