

REPORT BY THE TASK TEAM ON CALL SIGN MASKING AND ENCODING

(submitted by Graeme Ball on behalf of the Task Team)

1. Current Terms of Reference

Tasks

- (i) Oversee the implementation of MASK and ENCODE and develop guidelines as necessary;
- (ii) Review and approve national MASK schemes to ensure they remain unique and do not impinge on (1) the ITU callsign series allocated to a country, or 2) any other marine or oceanographic identification scheme used by WMO, e.g. buoy identification numbers;
- (iii) Ensure the MASK v REAL database is kept up-to-date by NMSs implementing MASK;
- (iv) Develop the ENCODE encryption strategy, as well as develop the encoding and decoding keys.

Members

- Graeme Ball (SOT Chairperson, Australia)
- Julie Fletcher (VOSP Chairperson, New Zealand)
- Scott Woodruff (ETMC Chairperson, USA)
- Hester Viola (DBCP/SOT Technical Coordinator, France)
- Colin Parret (United Kingdom)
- Robert Luke (USA)
- WMO Secretariat representative

2. Status of Action Items from SOT-IV

Nil action items.

3. Ongoing Activity / Standard Tasks

Task 1

- (i) The Task Team prepared instructions for members considering implementing a MASK Callsign Masking Scheme, see Appendix 1. The instructions, covering initial and ongoing requirements, were distributed via the SOT and VOS mailing list and are available on the VOS website at the following link:
- (ii) < http://www.bom.gov.au/jcomm/vos/documents/mask_implementation_instructions.pdf >.
- (iii) The Task Team established the rules for accessing the MASK v REAL database at JCOMMOPS. These rules were incorporated in a letter from WMO to PRs, ref: OBS/WIGOS/OSD/MAR/SOT, dated 26 January 2009.

Task 2

- (i) The Task Team approved a submission from Australia to implement a MASK callsign-masking scheme.
- (ii) The Task Team recorded the details of existing MASK-like schemes operated by E-Surfmar, E-ASAP and SeaKeepers.
- (iii) The Task Team was involved in the discussion pursuant to the establishment of a WMO numbering system for underway sampling reports (TESAC) from seals.

Task 3

- (i) JCOMMOPS has not yet developed the MASK v REAL database, but, as an interim measure, has developed a flat file available by secure FTP. The unique username/password to this FTP was provided to the SOT chairperson.

(ii) JCOMMOPS confirms that the MASK v REAL list is up-to-date. Routine updates were received from:

- (a) AU VOS. Quarterly, latest update on 11 February 2009 (4 Ships)
- (b) EU VOS. Quarterly, latest update on 15 January 2009 (135 Ships)
- (c) E-ASAP. Once only on 22 April 2008 (13 ships)

(iii) JCOMMOPS Tasks:

- (a) Upgrade the JCOMMOPS Information System to manage this new information: database structure modification, loading/export scripts development. (done)
- (b) Develop web based products to distribute such information, with appropriate security level (individual passwords for MASK Focal Points, web pages to browse archives) (March-April 2009)
- (c) Review security aspects of all existing web services (April 2009)
- (d) Adapt existing services to this new scheme (in particular the QC Relay tool) (April-May 2009)

Task 4

(i) No action during the inter-sessional period. This will be a focus of attention post SOT-V.

4. Recommendations

Nil.

5. Review the Terms of Reference

The Task Team does not propose any changes to the current Task List.

The Task Team recommends that Mathieu Belbeoch, new SOT/TC, replace Hester Viola, former SOT/TC, as a member of the Task Team.

6. Summary of action proposed

The panel is invited to:

- (i) Note the information contained in this report and comment as appropriate;
- (ii) Review the Tasks of the Task Team;
- (iii) Review existing Task Team memberships and encourage new members.

Annexes to Appendix I:

- Annex 1* Task Team recommendations for members considering implementing a MASK Callsign Masking Scheme
- Annex 2* Copy of the letter to the Permanent Representative of USA regarding archiving of unmasked VOS data for climate use
- Annex 3* Copy of the letter to the Permanent Representative of Japan regarding archiving of unmasked VOS data for climate use
- Annex 4* Copy of the reply from USA regarding the letter in *Annex 2*
- Annex 5* Copy of the reply from Japan regarding the letter in *Annex 3*
- Annex 6* Letter to the Permanent Representatives of Members regarding ship's masking schemes implemented as per Resolution 27 (EC-LIX)

ANNEX 1

TASK TEAM RECOMMENDATIONS FOR MEMBERS CONSIDERING IMPLEMENTING A MASK CALLSIGN MASKING SCHEME



SOT and VOS Focal Points
via JCOMMOPS mailing lists

IMPLEMENTING A MASK CALLSIGN MASKING SCHEME

Purpose

To advise SOT and VOS Focal Points of the initial and recurring obligations for a country implementing a **MASK** callsign-masking scheme.

Background

2. At SOT-IV, Geneva 2007, there was considerable debate regarding callsign masking for the VOS and the methods by which this could be achieved. A long-term solution dependent on BUFR for message dissemination on the GTS, and utilising an encrypted callsign formed from random data elements in the message, gained widespread support. This solution however cannot be implemented until 2013 when BUFR is mandatory. In the short- to medium-term two schemes were ultimately endorsed as follows:
 - a. **SHIP**: where the true ITU callsign (**REAL**) is replaced by the generic callsign **SHIP**. This can be done either on the ship or by the NMS prior to distributing the BBXX on the GTS. NMS replacing **REAL** with **SHIP** prior to distributing the BBXX on the GTS are required to have systems in place that will make the original (**REAL**) data available for monitoring purposes in near real-time to the monitoring centres, or
 - b. **MASK**: where the true ITU callsign (**REAL**) is replaced in the BBXX sent from the ship by an alternative and unique callsign (**MASK**) provided by the NMS. NMS implementing this method are required to provide JCOMMOPS with a regularly updated list of their ships using **MASK**.
3. Japan and the USA have adopted the **SHIP** scheme and are working towards fulfilling their obligations to make the original (**REAL**) data available in near real-time.
4. Some other countries have introduced, or are considering introducing a **MASK** scheme. The remainder of this document is for countries implementing a **MASK** scheme.

Initial Obligations

5. Countries considering introducing a **MASK** scheme must first provide the details of their proposed scheme to the *SOT Task Team on Callsign Masking* < sot-tt-masking@jcommops.org >. The Task Team will review the scheme to ensure that it does not conflict with:
 - a. The official callsign series allocated by the ITU to another country;
 - b. The **MASK** scheme of another country; or
 - c. Any other known WMO numbering scheme.
6. If the Task Team discovers any concerns with the proposal, the submitting country will be invited to review its proposal and re-submit it to the Task Team.

Recurring Obligations

7. Countries implementing a **MASK** scheme shall provide JCOMMOPS < mask2real@jcommops.org > with a regularly updated list of ships involved in their national **MASK** scheme. This includes updating the list of ships if there are changes to the assigned **MASK** of a ship, or ships. The list shall be submitted as follows:
 - a. **Ship starts using MASK or is assigned a new MASK:**
 The list shall be submitted immediately. The list shall contain all active **MASK** ships including the new ship or new **MASK** that prompted the submission;
 - b. **Ship stops using MASK or changes its MASK:**
 The list shall be submitted immediately. The list shall contain all active **MASK** ships and also the de-listed ship or former **MASK** that prompted the submission with its corresponding **MASK** end-date (refer to requirements in para. 9); and
 - c. **Quarterly:**
 All active **MASK** ships if there are nil additions or deletions from the last submitted list.
8. It is recommended that the quarterly submission to JCOMMOPS is made at the same time as the quarterly WMO No. 47 (Pub47) update to WMO, i.e. by the 15th day of January, April, July and October.
9. The following details shall be provided in accordance with the scheduling outlined in para. 7:

Country-of-Recruitment	(1)	The country that recruited the vessel for the VOS.
Report-Date	(1)	The date when the current report was prepared.
nmsID	(2)	Unique identification number assigned by the NMS (if applicable).
MASK	(1)	The unique masked callsign provided to the ship by the NMS.
REAL	(1)	The official ITU callsign of the ship.

IMOn	(2)	The number assigned by the IMO to the hull of the ship (if applicable).
Start-Date	(1)	The commencement date of using MASK on the ship in question, and reported in YYYYMMDD format.
End-Date	(3)	The final date of using MASK on the ship in question (if applicable), and reported in YYYYMMDD format.

(1) Mandatory in every report | (2) Either or both | (3) Required only when **MASK** on the ship ends

10. The callsign list submitted to JCOMMOPS shall be a semi-colon delimited text file (.CSV) consisting of one ship per line comprising the details described above and formatted as follows:

Country-of-Recruitment;Report-Date;nmsID;MASK;REAL;IMOn;Start-Date;End-Date;

11. If a non-mandatory element is not available it shall be omitted, but the trailing semi-colon must be retained.

e.g. **AU;20080326;;ABC1234;DEFG;9123456;20080325;;**

12. Submissions to WMO No. 47 shall continue to list ships with **REAL**.

Action

13. That (1) you note the above, and (2) VOS Focal Points in countries implementing a **MASK** callsign masking scheme observe the initial and recurring obligations contained herein.

Graeme S. Ball

Chair, JCOMM Ship Observations Team (SOT)
Chair, SOT Task Team on Callsign Masking

11 April 2008

ANNEX 2

**COPY OF THE LETTER TO THE PERMANENT REPRESENTATIVE OF USA REGARDING
ARCHIVING OF UNMASKED VOS DATA FOR CLIMATE USE**



World Meteorological Organization
Organisation météorologique mondiale

Secrétariat
7 bis, avenue de la Paix – Case postale 2300 – CH 1211 Genève 2 – Suisse
Tél.: +41 (0) 22 730 81 11 – Fax: +41 (0) 22 730 81 81
wmo@wmo.int – www.wmo.int

Our ref.: 11105-08/OBS/WIGOS/OSD/MAR/MC

Dr John L. Hayes
Permanent Representative of the United
States of America with WMO
National Weather Service International
Activities
1325 East-West Highway
SILVER SPRING, MD 20910
United States of America

GENEVA, 11 December 2008

Subject: Archiving of unmasked Voluntary Observing Ship (VOS) data for climate use

Dear Dr Hayes,

As you will recall, Members in line with Resolution 27 (EC-LIX), have implemented specific ship's call sign masking schemes on a trial basis in order to address the issue of ship owners and masters' concerns with regard to Voluntary Observing Ship (VOS) data exchange. Resolution 27 was kept in force by EC-LX.

You will also recall that the Marine Climatological Summaries Scheme (MCSS), established in 1963 (Resolution 35, Cg-IV), has as its primary objective the international exchange, quality control and archival of delayed-mode marine climatological data in support of global climate studies and the provision of a range of marine climatological services. JCOMM has established a cross-cutting Task Team on Delayed Mode VOS Data (TT-DMVOS) and an ETMC Task Team on Marine-meteorological and Oceanographic Climatological Summaries (TT-MOCS) to assist in the modernization of the MCSS. In particular, the TT-DMVOS will focus mainly on modernizing the management and quality control of the delayed-mode VOS data, while at the same time exploring possible connections with the management of real-time VOS and other ship-based data. The TT-MOCS will develop a plan to modernize the production and dissemination of user relevant marine climatological summary products.

The VOS instrument / platform metadata, as provided in the WMO Publication No. 47, *International List of Selected, Supplementary and Auxiliary Ships*, permit to obtain important information about the observing instruments used onboard the ships, including their siting, and are therefore essential for climate studies and for bias correction. As climate studies are based on historical records, it is important to be able to establish the link between the VOS observations and the metadata in the long term archives. Preserving original ship's call sign information from real-time and delayed-mode VOS reports collected and archived by the MCSS Global Collecting Centres (GCCs) - operated by the Met Office, United Kingdom, and Deutscher Wetterdienst (DWD), Germany - is therefore required in order to permit this linkage with the ship's metadata.

cc: Executive Secretary, IOC
TT-DMVOS Members
ETMC Members
Chairperson, SOT
Chairperson, VOSP
Coordinator, JCOMM DMPA
Coordinator, JCOMM OPA
JCOMM Co-presidents

- 2 -

I am writing to you as a WMO Member implementing ship's call sign masking scheme and wishing to protect the identity of VOS as part of a collaboration with the ship owners and masters. I wish to recall that Resolution 27 (EC-LIX) asked all Members implementing a scheme, whereby the official ITU callsign is replaced with the generic SHIP callsign, to: (i) provide for the secure exchange of ITU call signs and reports affected by the masking process, (ii) assist in the timely resolving of real-time monitoring and climate analysis problems, and (iii) minimize the technical implications on the Quality Monitoring of Marine Data set by the Commission for Basic Systems (CBS) Lead Centre.

These issues were recently discussed at the first meeting of the TT-DMVOS and TT-MOCS (Gdynia, Poland, 10 May 2008), and it was suggested that the Global Collecting Centers (GCCs) should eventually be responsible for real-time data collection / storage and provide a secure environment for data processing. When authorized to do so, the GCCs which are collecting both real-time and delayed-mode data streams would be in a position to identify "masked" data and insert the real call sign information as appropriate. However, it is realized that many aspects of the issue still require substantial discussion with the Technical Commissions (i.e., JCOMM, CCI, CBS), and Members implementing such schemes.

As an important and time-critical intermediate step, and until a widely accepted solution is found, the Meeting therefore recommended that for subsequent use for climate studies, Members implementing the generic SHIP callsign masking scheme should ensure the long-term archival at the national level of all VOS data (i.e., FM-13 SHIP and IMMT), including confidential unmasked data and associated metadata, since the initiation of callsign masking. This would permit that all likely unforeseen problems arising from implementation of masking by different countries could eventually be rectified in the climate archives in due course.

I would therefore like to invite you to urgently consider (which hopefully might already be the case) the feasibility of managing and preserving nationally all of VOS data (including real callsigns) since the implementation of callsign masking as detailed above, and contribute, in collaboration with the Ship Observations Team (SOT) and the Expert Team on Marine Climatology (ETMC), to the definition of the conditions by which those unmasked data could be made available to the international archives including the GCCs, and the International Comprehensive Ocean-Atmosphere Data Set (ICOADS). In this regard, I would also be grateful if you could inform me of your perspective on this issue.

I look forward to your continuous and active participation in ocean observations and services activities.

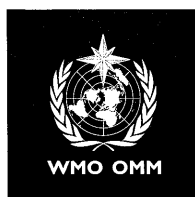
Yours sincerely,



(Hong Yan)
for the Secretary-General

ANNEX 3

COPY OF THE LETTER TO THE PERMANENT REPRESENTATIVE OF JAPAN REGARDING ARCHIVING OF UNMASKED VOS DATA FOR CLIMATE USE



World Meteorological Organization
Organisation météorologique mondiale

Secrétariat
7 bis, avenue de la Paix – Case postale 2300 – CH 1211 Genève 2 – Suisse
Tél.: +41 (0) 22 730 81 11 – Fax: +41 (0) 22 730 81 81
wmo@wmo.int – www.wmo.int

Our ref.: 11105-08/OBS/WIGOS/OSD/MAR/MC

Dr Tetsu Hiraki
Permanent Representative of Japan
with WMO
Japan Meteorological Agency (JMA)
1-3-4, Otemachi
Chiyoda-ku
TOKYO 100-8122
Japan

GENEVA, 11 December 2008

Subject: Archiving of unmasked Voluntary Observing Ship (VOS) data for climate use

Dear Dr Hiraki,

As you will recall, Members in line with Resolution 27 (EC-LIX), have implemented specific ship's call sign masking schemes on a trial basis in order to address the issue of ship owners and masters' concerns with regard to Voluntary Observing Ship (VOS) data exchange. Resolution 27 was kept in force by EC-LX.

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cc: Executive Secretary, IOC
TT-DMVOS Members
ETMC Members
Chairperson, SOT
Chairperson, VOSP
Coordinator, JCOMM DMPA
Coordinator, JCOMM OPA
JCOMM Co-presidents

- 2 -

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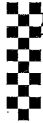
Yours sincerely,



(Hong Yan)
for the Secretary-General

ANNEX 4

COPY OF THE REPLY FROM USA REGARDING THE LETTER IN ANNEX 2



Jan 08 2009 2:40PM NWS IA

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p. 1



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL WEATHER SERVICE
1325 East-West Highway
Silver Spring, Maryland 20910-3283

JAN 8 2009

Recd WMO
REGISTRY (4) - 9 JAN. 2009

30319-09 OBS/WIGOS/
OSD
OSD W-J
15/1/09

The Secretary-General
World Meteorological Organization (WMO)
7 bis, Avenue de la Paix
Case postale No. 2300
1211 Geneva 2
SWITZERLAND

Dear Mr. Secretary-General:

In response to your letter, reference 11105-08/OBS/WIGOS/OSD/MAR/MC, and dated December 11, 2008, please be advised that the United States Voluntary Observing Ship (VOS) program, in conjunction with the Japan Meteorological Agency (JMA) VOS program, has been masking selected callsigns for over one year. Selected ships' call signs are replaced with the generic "SHIP" call sign at the National Weather Service Telecommunications Gateway (NWSTG) for release into the public domain. The periodicity, or control time, for this data is either (1) releasable after 90 days or (2) never released to the public as specifically requested by management of the shipping company. This effort has been a fully coordinated effort with the WMO Ship Observation Team (SOT) and its Task Team on Call Sign Masking and Encoding.

All controlled data, in real time, is sent from the NWSTG to the NWS National Centers for Environmental Prediction for inclusion into the models and to JMA and the U.S. VOS Program Manager, Mr. Robert Luke, at the NWS National Data Buoy Center. As agreed upon at the WMO SOT-V meeting in Geneva in 2007, JMA is the central clearing house for the periodicity-cleared data by NOAA's National Climatic Data Center (NCDC) as part of the International Comprehensive Ocean-Atmosphere Data Set (ICOADS). National hydrometeorological services (NHMSs) can obtain either real-time-controlled or periodicity-cleared data through JMA. Mr. Luke also submits the periodicity-cleared data from U.S.-controlled ships to NCDC and ICOADS for archival on a monthly basis. ICOADS access to the JMA data, the monthly releases from the U.S. VOS Program office, and the WMO No. 47 (International List of Voluntary Observing Ships) metadata allow ICOADS to remain an integral partner in the long-term archival of these critical marine observations.

Thank you for the opportunity to comment on U.S. procedures.

Sincerely,

for John L. Hayes
Permanent Representative
of the U.S. with the WMO

Printed on Recycled Paper

→ E. Hayes
AS AT 1/10/09



ANNEX 5

COPY OF THE REPLY FROM JAPAN REGARDING THE LETTER IN ANNEX 3



JAPAN METEOROLOGICAL AGENCY

1-3-4 Otemachi, Chiyoda-ku, Tokyo 100-8122

TELEPHONE : +81-3-3211-4966

TELEFAX : +81-3-3211-2032

E-mail : iao-jma@met.kishou.go.jp

Our reference: JMA09/A3/038

4 March 2009

Mr Michel Jarraud
Secretary-General
World Meteorological Organization
7 bis, avenue de la Paix
Case postale No. 2300
CH-1211 Geneva 2
Switzerland

Dear Mr Jarraud,

I refer to your letter 11105-08/OBS/WIGOS/OSD/MAR/MC dated 11 December 2008 regarding the archiving of unmasked Voluntary Observing Ship (VOS) data for climate use.

The Japan Meteorological Agency (JMA) shares the understanding that developing international archives of unmasked VOS data are essential for climate research, while it is also important to ensure the security of ships that provide VOS data to maintain and further promote the VOS programme.

JMA has been and will be preserving all ship data with original call signs. JMA also releases, after ninety days from the date of reporting in principle, VOS unmasked data that are permitted to be provided in delayed mode, based on the agreement of shipping agents and relevant organizations.

In addition, to facilitate their real time quality management, JMA can provide original ship data on real time to National Meteorological Services including the MCSS GCCs, the European Centre for Medium-Range Weather Forecasts and International Comprehensive Ocean-Atmosphere Data Set (ICOADS), on condition that they are not provided to any third party.

I hope JMA's data processing scheme will contribute to the development of ocean observation systems and international archives of marine meteorological data.

Yours sincerely,

Tetsu Hiraki

(Tetsu Hiraki)

Permanent Representative of Japan with WMO

→ *E. Frenne* *14/3/09* *E. Ch. 15/3/9*

Recd WMO REGISTRY (1)	11 MARS 2009
DSG	DSG
Assuato	
Annexes	Filed

Already registered as 30462-09/OBS

ANNEX 6

LETTER TO THE PERMANENT REPRESENTATIVES OF MEMBERS REGARDING SHIP'S MASKING SCHEMES IMPLEMENTED AS PER RESOLUTION 27 (EC-LIX)



World Meteorological Organization
Organisation météorologique mondiale

Secrétariat
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Tél.: +41 (0) 22 730 81 11 – Fax: +41 (0) 22 730 81 81
wmo@wmo.int – www.wmo.int

TEMPS • CLIMAT • EAU
WEATHER • CLIMATE • WATER

Our ref.: OBS/WIGOS/OSD/MAR/SOT

GENEVA, 26 January 2009

Annexes: 6 (Annexes II to VI available in English only)

Subject: Ship's callsign masking schemes implemented as per Resolution 27 (EC-LIX)

Dear Sir/Madam,

You may recall the concerns of the ship owners and masters' with regard to the issue of Voluntary Observing Ship (VOS) data exchange, as ultimately information on ship callsigns and position data appear on some public websites. During the fourth session of the JCOMM Ship Observations Team (SOT-IV), which was held Geneva, Switzerland, 16-21 April 2007, the meeting discussed and reviewed proposed ship's callsign masking schemes, and established a Task Team on Callsign Masking and Encoding for progressing on this matter and to seek the adoption of a universally accepted solution. Details concerning the SOT recommendations on this matter can be found in the Final Report from the session which can be downloaded from the WMO Website (JCOMM Meeting Report No. 52, under Programmes/APP/MMOP/Publications).

As per the SOT recommendations, the fifty-ninth WMO Executive Council (EC-LIX, Geneva, Switzerland, 28-30 May 2007) discussed the issue and passed Resolution 27 recommending in particular that Members, in consultation with ship owners, who wish to protect the identity of VOS, may extend the trial period for the implementation of their current callsign masking schemes as per Resolution 7 (EC-LVIII). All Members implementing such a process were asked to: (i) provide for the secure exchange of ITU callsigns and reports affected by the masking process, (ii) assist in the timely resolving of real-time monitoring and climate analysis problems, and (iii) minimize the technical implications on the Quality Monitoring of Marine Data

To: Permanent Representatives (or Directors of Meteorological or Hydrometeorological Services) of Members of WMO (PR-6403)

cc: Hydrological Advisers to Permanent Representatives)
Dr Patricio Bernal, Executive Secretary, IOC)
Drs Jean-Louis Fellous and Peter Dexter, co-presidents, JCOMM)
Dr Alexander I. Gusev, president, CBS)
Professor Geerd-Ruediger Hoffmann, vice-president, CBS)
Dr James F. W. Purdom, Chairperson, CBS OPAG-IOS)
Ms Candyce Clark, Coordinator, JCOMM Observations Programme Area)
Mr Robert Keeley, Coordinator, JCOMM Data Management Programme Area (for information)
Mr Graeme Ball, Chairperson, SOT)
Ms Julie Fletcher, Chairperson, VOSP)
Mr Gustavo Goni, Chairperson, SOOPIP)
Ms Sarah North, Chairperson, SOT Task Team on VOSClm)
Mr Rudolf Krockauer, Chairperson, SOT Task Team on ASAP)

- 2 -

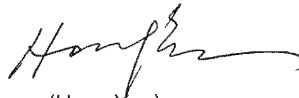
set by the Commission for Basic System (CBS) Lead Centre. The resolution also asked the Secretary-General to continue the High-Level Dialogue, involving affected Members, the International Maritime Organization (IMO), the International Chamber of Shipping, shipping companies, and other relevant Organizations and technical commissions (e.g., JCOMM, CBS and CCI), in order to review the implementation and impact of masking. The sixtieth session of the WMO Executive Council (EC-LX, Geneva, Switzerland, 18-27 June 2008) decided to keep Resolution 27 (EC-LIX) in force. The text of the resolution is reproduced in Annex I.

Japan and the United States have informed the WMO Secretariat of the technical details regarding the specific masking schemes they are currently implementing in accordance with Resolution 27 (EC-LIX). The details of these schemes are attached in Annexes II and III, respectively. Other Members, such as Australia, and European countries participating in E-SURFMAR, have also implemented masking schemes where the ship's callsign is replaced by a unique identification number allocated nationally and consistent with the recommendations from the Ship Observations Team. These schemes are also detailed in Annexes IV and V, respectively. Following the recommendations from SOT-IV, the JCOMM in situ Observing Platform Support Centre (JCOMMOPS) was asked to develop and implement a secured database to cross reference masked call signs (MASK) with unmasked call signs (REAL). The conditions for accessing JCOMMOPS database of MASK / REAL call signs are detailed in Annex VI.

In this context, I am writing to you to: (i) inform you about the schemes; (ii) suggest upgrading your data processing and quality monitoring systems accordingly; (iii) invite you to provide the WMO Secretariat (echarpentier@wmo.int) with information regarding your national activities and needs in terms of quality monitoring for VOS data and climate studies based on VOS data; and (iv) nominate a focal point for each of those activities requiring access to the JCOMMOPS database of MASK / REAL call signs. Upon your nomination, your focal point(s) will be provided with the necessary codes to access the database.

I look forward to your continued and active participation in met-ocean observations and services activities.

Yours faithfully,



(Hong Yan)
for the Secretary-General

**Res. 27 (EC-LIX) – SHIP OWNERS AND MASTERS’
CONCERNS WITH REGARD TO VOS DATA EXCHANGE**

THE EXECUTIVE COUNCIL,

Recalling:

- (1) The request by EC-LVII to the JCOMM Ship Observations Team (SOT) to assess the risks associated with allowing Voluntary Observing Ships (VOS) callsigns and position data being made freely available on external Websites not maintained by the National Meteorological or Hydrometeorological Services (NMHSs), and to provide options to address the issue, as appropriate,
- (2) The request by EC-LVIII to the Secretary-General to establish, as a high priority issue, a high level dialogue, involving affected Members, the International Maritime Organization, the International Chamber of Shipping, shipping companies, and relevant Organizations and Technical Commissions, in order to determine if there is a link between VOS data availability on external Websites and piracy and other ship security issues; to review the implementation and impact of masking; and to propose a general and universally acceptable solution to the issue that would address ship owners and masters’ concerns as well as the data monitoring and quality information feedback requirements, for consideration by the fifty-ninth session of the Executive Council in 2007,
- (3) The recommendation by EC-LVIII to Members who, in consultation with ship owners, wish to protect the identity of VOS may implement ship callsign masking, for a trial period of one year, a process which would facilitate open distribution of masked data on the GTS,
- (4) The recommendation by EC-LVIII to all Members implementing such a process to provide for the secure exchange of ship callsigns and report affected by the masking process, so as to assist in resolving real time monitoring and climate analysis problems,

Noting:

- (1) The outcome, recommendations, and agreed principles by the High Level WMO/IMO Consultative Meeting (Geneva, Switzerland, February 2007), and its recommendation to seek a universally accepted global and standardized solution using an agreed international system of masked callsigns, yet to be developed,
- (2) The outcome and recommendations by the Second Session of the JCOMM Expert Team on Marine Climatology (Geneva, Switzerland, March 2007) and the Fourth Session of the JCOMM Ship Observations Team (Geneva, Switzerland, April 2007),
- (3) The trial ship masking schemes implemented by a few Members and their technical implications for quality monitoring, and climate related applications,

Recognizing:

- (1) That it is difficult to establish a relationship between VOS data availability on external Websites and piracy and other ship security issues, but that there is a perception that a connection exists in the shipping industry, and that such security concerns have to be addressed,
- (2) That there are also concerns on commercial considerations amongst the shipping companies,

Acknowledging:

- (1) The seriousness of the situation, which if not adequately addressed could lead to a decline of ships participating in the Voluntary Observing Ship (VOS) Scheme, and therefore a significant decrease of VOS reports available on the GTS,
- (2) The concerns expressed by ship owners and masters with regard to VOS data exchange,

Recommends:

- (1) Members who, in consultation with ship owners, wish to protect the identity of VOS may extend the trial period for the implementation of their current callsign masking schemes as per Resolution 7 (EC-LVIII);
- (2) Members who, in consultation with ship owners, wish to protect the identity of VOS and have not implemented such schemes yet, may implement a callsign masking scheme, as a process which would facilitate open distribution of masked data on the GTS;
- (3) All Members implementing such a process to:
 - (a) Provide for the secure exchange of ITU callsigns and reports affected by the masking process;
 - (b) Assist in the timely resolving of real time monitoring and climate analysis problems;
 - (c) Minimize the technical implications on the Quality Monitoring of Marine Data set by the Commission for Basic System (CBS) Lead Centre;
- (4) All Members implementing such a process, to seek long term solutions in a way consistent with recommendations raised by the High Level WMO/IMO Consultative Meeting (Geneva, Switzerland, February 2007), the Second Session of the JCOMM Expert Team on Marine Climatology (Geneva, Switzerland, March 2007), and the Fourth Session of the JCOMM Ship Observations Team (Geneva, Switzerland, April 2007);
- (5) To continue the trial masking schemes in successive years, unless decided otherwise by the Executive Council, while pending the universal acceptance and implementation of a more suitable solution and the CBS migration to table driven codes;

Requests the Secretary-General, as a high priority issue:

- (1) To continue the High Level Dialogue, involving affected Members, the International Maritime Organization, the International Chamber of Shipping, shipping companies, and other relevant Organizations and technical commissions (e.g., JCOMM, CBS and CCI), in order to review the implementation and impact of masking;
 - (2) To propose a general and universally acceptable solution to the issue that would address ship owners and masters' concerns as well as the operational, data monitoring and quality information feedback, and climate requirements;
 - (3) To bring this resolution to the attention of all persons concerned.
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Ship's callsign masking scheme as implemented by Japan per Res. 27 (EC-LIX)

The trial callsign masking of FM-13 SHIP reports operated by the Japan Meteorological Agency (JMA)

In accordance with World Meteorological Organization (WMO) Resolution 7 (EC-LVIII) and 7.7/1 (EC-LIX), the Japan Meteorological Agency (JMA) started implementing trial callsign masking of FM-13 SHIP reports at 00:00 UTC on 12 December 2007 in order to protect the identity of Voluntary Observing Ship (VOS) fleets and assist in resolving real-time monitoring and climate analysis problems.

1. Callsign masking

Upon request from the administrators of reporting ships such as ship owners and masters, JMA replaces callsigns included in incoming SHIP reports via the Inmarsat Yamaguchi Land Earth Station with a generic *SHIP* callsign before distribution on the Global Telecommunication System in order to ensure the security of such ships. This trial callsign masking started from 12 December 2007 along with the service of providing the original SHIP reports (referred to below as *Non-masked Data*) explained in the next section.

Regarding the registration of VOS fleets, VOS focal points are kindly requested to contact the relevant administrators to confirm whether trial callsign masking is required for their respective fleets. Those asking for the service are requested to fill out the registration form attached to the letter from JMA dated 27 November 2007 reference: JMA07/A3/222 and send it to JMA.

2. Provision of Non-masked Data

For the purpose of real-time monitoring and climate analysis by National Meteorological and Hydrological Services (NMHSs) and monitoring centers, JMA provides Non-masked Data with real callsigns to registered users (referred below as *Users*) only. This information has been available through JMA's Ship Data Website (referred to below as *the Website*), secured with ID and password authentication, since 12 December 2007.

Use of the Website is limited to NMHSs (including the CBS Lead Centre for the Quality Monitoring of Marine Data), the European Centre for Medium-Range Weather Forecasts (ECMWF) and the International Comprehensive Ocean-Atmosphere Data Set (ICOADS) project. Users must comply with the following terms and conditions for accessing the Website:

- a. Users shall not provide or expose Non-masked Data obtained via the Website or the IDs / passwords used to access the Website to any third party.
- b. If JMA or Users detect or are informed of the leakage of Non-masked Data or IDs / passwords, Users shall cooperate with JMA to investigate the causes of the leakage.
- c. JMA reserves the right to revoke IDs / passwords if either of the above items (a or b) is not observed.

Organizations interested in obtaining Non-masked Data are kindly requested to read the terms and conditions above and to complete the form attached to the letter JMA07/A3/222 and send it to JMA.

Ship's callsign masking scheme as implemented by USA per Res. 27 (EC-LIX)

The trial callsign masking of FM-13 SHIP reports operated by the United States' National Weather Service (NWS)

In accordance with World Meteorological Organization (WMO) Resolution 7 (EC-LVIII) and 27 (EC-LIX), the National Weather Service (NWS) started implementing trial callsign masking of FM-13 SHIP reports at 00:00 UTC on 12 December 2007 in order to protect the identity of Voluntary Observing Ship (VOS) fleets and assist in resolving real-time monitoring and climate analysis problems.

1. Callsign masking

Upon request from the administrators of reporting ships such as ship owners and masters, NWS replaces callsigns included in incoming SHIP reports via the Inmarsat Southbury or Santa Paula Land Earth Station with a generic SHIP callsign before distribution on the Global Telecommunication System in order to ensure the security of such ships. This trial callsign masking started from 12 December 2007 along with the service of providing the original SHIP reports (referred to below as Non-masked Data) explained in the next section. This masking is completed in conjunction with the Japan Meteorological Agency (JMA) to better expand their communication coverage area.

Ships and Shipping companies who request masking support shall provide the NWS with a completed Callsign Masking Registration/Change Form. This form also designates the public release periodicity level. With coordination from JMA, the standardized releasing periodicity is either fully public releasable after 90 days or never to be released publicly. This controlled data is shared only with NWS's Ocean Prediction Center (OPC) for inclusion into the real-time models, the U.S. VOS program for management, and JMA for release control of Non-masked data.

Callsigns have also been completely removed from all OPC analysis charts released to the public regardless of their enrolment in the masking scheme. The OPC is now able to allow select call sign re-appear back on the analyses if requested by the ship and or shipping company. The U.S. VOS program is maintaining this "display" list.

2. Provision of Non-masked Data

For the purpose of real-time monitoring and climate analysis by National Meteorological and Hydrological Services (NMHSs) and monitoring centers, the U.S. and Japan VOS programs have agreed that JMA will be the focal point location to provide Non-masked Data with real callsigns to registered users as described in Annex II.

Ship's callsign masking scheme as implemented by Australia per Res. 27 (EC-LIX)

The Australian Bureau of Meteorology (BOM) has introduced on a trial basis, and on a limited number of ships, a masking scheme whereby the official ITU callsign is replaced by an alternative and unique callsign. The name given by SOT to this form of masking scheme is MASK.

The Australian MASK broadly follows ITU callsign practices, but explicitly uses unallocated and reserved 'not for future use' callsigns from the ITU Table of Callsigns (<http://life.itu.int/radioclub/rr/ap42.htm>).

The format of the Australian MASK is CNCNNNN, where C = character (A - Z) and N = number (0 - 9, or 2 - 9 for N in the second position in the MASK in accordance with ITU directives).

The two numeric components of the MASK (N and NNNN) are automatically generated for every ship recruited by Bureau (regardless of whether the ship participates in the MASK trial or not), and is derived from the unique database ID number assigned to the ship.

The callsign series approved for use by the Bureau by the SOT Task Team on Callsign Masking and Encoding comprises B2M0000 - B2M9999 through to B9M0000 - B9M9999.

In accordance with the procedures developed by the Task Team, specifically to assist with real-time quality monitoring and long-term data archival, Australia provides JCOMMOPS with a quarterly list linking the official ITU callsign (REAL) with MASK, or immediately whenever a change is made to the list of MASK ships.

Ship's callsign masking scheme as implemented by European Countries participating in E-SURFMAR per Res. 27 (EC-LIX)

As of 1 September 2006, in accordance with Resolution 7 (EC-LVIII) and Resolution 27 (EC-LIX), and in order to protect the identity of Voluntary Observing Ships (VOS) fleets and to assist in resolving real-time monitoring and climate analysis issues, some countries participating in the Surface Marine programme of the Network of European Meteorological Services, EUMETNET (E-SURFMAR) started implementing on a trial basis a common ship's callsign masking scheme for ship reports distributed on GTS in FM-13 SHIP format.

1. Callsign masking

E-SURFMAR *MASK* callsigns (*ttccnn*) are based on the following format: a 3-character prefix (*ttt*) indicating the type of observing station installed onboard the ship; a 2-character string (*cc*) corresponding to the country recruiting the ship; and a 2-character string (*nn*, from 00 to ZZ) allowing to identify up to 1296 VOS for any given type and country. A few prefixes were allocated for the following types of observing stations: TBW for Turbowin conventional VOS stations; AVO, BAR, BAT, MIN, MPD for Avos, Baros, Batos, Minos and Met Pod Automated Weather Stations, respectively; IDD for Iridium Deck Drifters. The country code may be the 2-character ISO country code (ISO 3166-1:2006) but this is not mandatory. The probability to have an E-SURFMAR *MASK* identical to a *REAL* ITU callsign is extremely small. In such a case, the corresponding *MASK* would be frozen. Since September 2006, about 125 such *MASK* callsigns have been allocated to VOS ships participating in the E-SURFMAR programme.

2. Provision of masks

In accordance with the rules proposed by the JCOMM Ship Observations Team (SOT) Task Team on Callsign masking and encoding, the E-SURFMAR Management team regularly provides JCOMMOPS with a cross-reference list of *MASK* vs. *REAL* callsigns. The data centres that are using real-time VOS reports, and need access to the related metadata records from the WMO Publication No. 47 require this list. It must be noted here that, due to the knowledge of the country code - included in the *MASK* -, the national focal point for VOS Programmes can be easily identified (i.e. access to WMO Publication No. 47 metadata is not required) and contacted if necessary. For example, this would facilitate feedback from data users to VOS operators in order to undertake corrective actions for ships reporting systematic errors (i.e. through the Quality Information Relay of JCOMMOPS).

3. Provision of WMO Publication No. 47 metadata

WMO Publication No. 47 metadata from VOS participating in the E-SURFMAR programme (half of the world's fleet) are made available on a password-protected web site. Metadata from non E-SURFMAR VOS may also be hosted on this website, as is already the case.

In addition, the E-SURFMAR Management team, on a quarterly basis, is providing the WMO Secretariat with the WMO Publication No. 47 metadata from E-SURFMAR VOS. Ships are identified through their *REAL* callsigns and their IMO numbers. *MASK* callsigns are not submitted with the WMO Publication No. 47 metadata.

Conditions for accessing JCOMMOPS database of masked call signs

1. Access to the MASK vs. REAL list shall be restricted to WMO approved subscribers contributing to WMO Programmes or co-sponsored Programmes and with legitimate requirements for:
 - 1.1 Real-time quality monitoring of VOS data;
 - 1.2 Climate database applications (e.g., linking archived MASK observations with REAL WMO Publication No. 47 metadata); and
 - 1.3 National VOS and PMO activities (e.g. provision of monitoring feedback and encouragement to ships; ensuring a ship under consideration for recruitment is not already a member of another national VOF).
 2. Requests for access shall be made by means of a letter from the PR of a country to the WMO Secretary-General, who, in consultation with WMO experts and concurrence from the SOT Chair, will grant access.
 3. Approved subscribers may include:
 - 3.1 Recognised monitoring centres, including RSMC Exeter, and VOSclim RTMC;
 - 3.2 NMHSs;
 - 3.3 Recognised JCOMM DACs or GCCs;
 - 3.4 National VOS Programme Managers; and
 - 3.5 Port Meteorological Officers.
 4. An approved subscriber shall not: (1) disclose, (2) confirm, or (3) otherwise make publicly available; the masking details of any ship or group of ships, without written permission from the Programme Manager implementing the masking scheme.
 5. Failure to observe these rules shall result in a loss of access privileges.
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