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COMMISSION STAFF WORKING DOCUMENT

For the Council Shipping Working Party

**Proposal for a new unplanned output on the adoption of the Galileo GNSS into the
WWRNS – Annex 1: Information note on compelling need**

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PURPOSE

The document presented in Annex is a draft joint EU submission to the IMO MSC93. It should be transmitted to the appropriate technical body of the Council with a view to achieving agreement on its transmission to the IMO prior the required deadline, i.e. before 11 March 2014 at latest.

ANNEX



MARITIME SAFETY COMMITTEE
93rd session
Agenda item 20

MSC 93/INF.X
14/5/14 - 23/5/14
Original: ENGLISH

WORK PROGRAMME

**Proposal for a new unplanned output on the adoption of the Galileo
GNSS into the WWRNS – Annex 1: Information note on compelling need**

**Submitted by Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark,
Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania,
Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia,
Spain, Sweden, United Kingdom and the European Commission**

SUMMARY

Executive summary: This document offers additional information to the proposal for the inclusion of an unplanned output in the NCRS Sub-Committee's work program to recognise the GNSS system established under the EU's Galileo programme (hereinafter: 'Galileo') as a component of the IMO's WWRNS. The aim of this annex is to provide information about the compelling need for the early adoption of Galileo into the WWRNS.

Strategic direction: 5.2

High-level action: 5.2.4

Planned output: No related provisions

Action to be taken: Paragraph 8

Related documents: MSC-MEPC.1/Circ.4/Rev.2, MSC-MEPC.7/Circ.1, Resolutions A.577(14), A.915(22), A.947(23), A.1046(27), MSC.233(82), and NAV 59/INF.7.

Need or compelling need

1 IMO approval is required to allow the use of Galileo for maritime navigation. This paper offers additional information on the urgency of this recognition.

2 Galileo will start Early Operational Services by the end of 2014/beginning of 2015 with 6 to 8 operational satellites. Early services will include both Open Service and Search and Rescue Service (SAR). From this point on, the users will benefit of Galileo in combination with other GNSS and especially they will benefit of Galileo's full interoperability with GPS. The deployment of Galileo will then proceed rapidly as described in the "Proposal for a new unplanned output on the adoption of the Galileo GNSS into the WWRNS" items 4 to 6.

3 The Galileo constellation will increase service availability and reduce the risk due to failure in a single GNSS constellation or due to use of single frequency signals. Galileo will

thus improve navigation capability and safety at sea, contributing to a resilient positioning, navigation and timing (resilient PNT).

So far, GPS (CDMA) and GLONASS (FDMA) are recognized for navigation in ocean waters (HNSE<100 m with a probability of 95%). The signal structure of Galileo (using CDMA and transmitting in E1 and E5 frequencies) is designed to work closely with GPS; also the underlying time signal of Galileo is aligned to the GPS time reference. This interoperability with GPS allows a receiver using the two systems to reach increased location accuracy as well as increased robustness against failures and spoofing attempts. In addition, such benefits will be available to new combined GPS-Galileo equipment already at the time of early services with a reduced number of Galileo satellites deployed. Galileo dual frequency receivers will be compliant with the accuracy levels required for navigation in ocean and coastal waters, harbour entrances and harbour approaches (HNSE<10m with a probability of 95%).

4 It should be noted that, in addition to its navigation services, Galileo will offer a contribution to global Search and Rescue services of COSPAS SARSAT freely available. The significant and continuing growth in the size of ships, and the expansion of their operating areas to remote regions, has increased the safety risk; the Galileo unique SAR service can mitigate this risk, to the benefit of the ship, of the individual mariners falling in the sea, or of the lifeboats in case of emergency evacuation. From the Early Services phase onwards, the distress beacon location service will be usable enabling faster and more accurate location. A unique return link service, enabling to send an acknowledgment receipt messages to the vessel or person in distress, is planned to be operational by 2016.

5 The specificities of the Galileo constellation will also help covering the more challenging safety needs due to the increasing use of northern sea routes and particular difficult environments such as the Arctic. With the Galileo performance standards already in place (MSC.233(82)) since 2006, the only step remaining to trigger equipment of vessels with Galileo capabilities, is the recognition of Galileo as part of WWRNS by IMO. Receiver manufacturer need time, first to develop the equipment and then to get it type approved in order to place the product on the market. By recognizing Galileo in the IMO as soon as possible, specific devices designed for vessels that use signals from GPS and Galileo should become more widespread, avoiding the use, not uncommon at the moment even in quite large vessels, of GPS devices that are designed for different applications (e.g. cars) which are more prone to errors. If Galileo recognition is delayed, the maritime community will not benefit from Galileo until at the earliest in 2018. Conversely, the acceptance of this unplanned output in the 2014-2015 biennium for the inclusion of Galileo into the WWRNS will positively help for the development of new performance standards for multi-system navigation receivers (MSC 90/25/8). Moreover, the recognition of Galileo by IMO is a real step in creating one of the platforms that will support E-Navigation, an initiative supported by IMO.

6 The proposal for a new unplanned output on the adoption of the Galileo GNSS into the WWRNS at this stage also intends to reduce the workload of IMO committees by exploiting the synergies with the similar recognition process recently launched for BeiDou (MSC 91/19/5). Indeed, those two files will entail the review of technical material of similar nature and will rely on the same resources in the new NCRS Sub-Committee. Processing both files simultaneously will optimize the use of scarce resources as per the guidance provided by IMO Secretariat.

7 As a final consideration to be taken into account, the acceptance of this unplanned output will accelerate not only the inclusion of Galileo as part of the WWRNS but also will enable its inclusion in SAR beacons (EPIRB), where the use of an Internal GNSS navigation device is required as per RTCM 406 MHz EPIRB Standard 11000.3. The return link implementation in the second generation of SAR beacons (EPIRB) may be seriously affected if Galileo is not part of the WWRNS by 2016.

Action requested of the Committee

8 The Committee is invited to note the information provided.