**ANNEX B PRO-FORMA TEMPLATE**

Date: 13/03/2024 Service name: EGNOS Safety of Life assisted service for

Maritime users (ESMAS)

Brief Service Description:

Satellite based Augmentation System (SBAS), as the system providing wide area or regional GNSS augmentation, is recognized by IALA as an Aid to Navigation (AtoN). Thus, EGNOS as the European SBAS, provides the EGNOS SoL assisted service for Maritime Users (ESMAS) GPS augmentation service to enable maritime navigation for SOLAS operations.

EGNOS SoL assisted service for Maritime Users (ESMAS) offers a service tailored to maritime users enabling marine navigation in ocean waters, harbour entrances, harbour approaches and coastal waters of the European Union Member States and EGNOS contributing countries (Island, Norway and Switzerland) in line with IMO Resolution A.1046.

Further information can be found here: <https://edas-maritime.gsc-europa.eu/>

**Service Provider aspects**

Service provider Name: European Union Agency for the Space Program (EUSPA)

Service provider Address: Janovského 438/2, 170 00 Prague 7 – Holesovice, Czech Republic

Contact number: [Helpdesk](https://edas-maritime.gsc-europa.eu/helpdesk) 24/7. Call +34 911 236 555

Contact e-mail: [helpdesk@edas-maritime.gsc-europa.eu](mailto:helpdesk@edas-maritime.gsc-europa.eu)

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| **X** | I/we confirm that the service offered is operational and available for use by maritime stakeholders (mariners, maritime authorities and other relevant parties). |
| **X** | I/we confirm that any future changes in the GNSS augmentation service should not affect legacy users of the service. |
| **X** | I/we will confirm my/our commitment to update the information provided should any change occurs that modifies the characteristics of the service and/or requires mariners to update their equipment. |

Information relating to the commitment of the service provider (to include the service area and level of availability, accuracy, continuity, integrity etc.) can be found at:

EGNOS SoL assisted service for Maritime Users (ESMAS) Service Definition Document (SDD) can be downloaded here: <https://edas-maritime.gsc-europa.eu/documents/egnos-safety-life-assisted-service-maritime-users-esmas>

Terms and conditions to access the service can be found at:

EGNOS SoL assisted service for Maritime Users (ESMAS) Service Definition Document (SDD) can be downloaded here: <https://edas-maritime.gsc-europa.eu/documents/egnos-safety-life-assisted-service-maritime-users-esmas>

The service complies with the following specifications and/or requirements:

The augmentation provided by EGNOS SoL assisted service for Maritime Users (ESMAS) to GPS contributes to maritime navigation in line with the operational requirements of IMO (Resolution A.1046(27)) and supports mariners to achieve the required accuracy and integrity performance levels for the navigation both in ocean and coastal waters, harbour entrances and harbour approaches.

**Service provision characteristics**

GNSS and frequencies supported:

EGNOS SoL assisted service for Maritime Users (ESMAS) improves GPS performances by augmenting the L1 C/A signal with the provision of corrections and integrity information for positioning and navigation applications over the service area defined in Service Definition Document (SDD) can be downloaded here: <https://edas-maritime.gsc-europa.eu/documents/egnos-safety-life-assisted-service-maritime-users-esmas>. The broadcast of these corrections and integrity information is done through the Signal-in-Space (SiS) in L1 band (1575. 42 MHz) transmitted by GEO satellites. Additional details on EGNOS SiS RF characteristics can be found in the Service Definition Document (SDD).

The service is available within the following geographic service area:

EGNOS SoL assisted service for Maritime Users (ESMAS) service area is defined in the Service Definition Document (SDD) that can be downloaded here: <https://edas-maritime.gsc-europa.eu/documents/egnos-safety-life-assisted-service-maritime-users-esmas>.

The expected performance in terms of accuracy, availability, continuity and integrity along with any applicable performance specifications or requirements (i.e., *IMO A.1046*):

The EGNOS SoL assisted service for Maritime Users (ESMAS)committed performance can be found in the Service Definition Document (SDD) (available here <https://edas-maritime.gsc-europa.eu/documents/egnos-safety-life-assisted-service-maritime-users-esmas>). The committed performance meets the related operational requirements defined in IMO Resolution A.1046 (27) as it is stated as follows:

* In terms of GEO signal availability, 99.8% calculated over a period of 30 days, received from at least one EGNOS operational GEO, at any point over the service area with a receiver aligned with the receiver standards.
* About the system malfunction, non-availability, or discontinuity, it is committed a time to alert less or equal than 5.2 seconds, between the occurrence of the system integrity alarm condition and the arrival of the last bit of the alarm message to the antenna of the user receiver, received from at least one EGNOS operational GEO, at any point over the service area with a receiver aligned with the receiver standards.
* In regard to the Maritime Information Service (MSI), which delivers notifications to MSI providers about events affecting EGNOS SoL assisted service for Maritime Users (ESMAS) (e.g. emails to NAVAREA coordinators), it is committed that MSI proposals will be provided in case of SiS unavailability (outages) longer than 15 minutes in accordance the following event categorisation:
  + For planned events, MSI proposal to be provided at least 72 hours before the service is affected.
  + For unplanned events, MSI proposal to be provided at least within the 2 hours after the service is affected.

The EGNOS SoL assisted service for Maritime Users (ESMAS) typical performance (e.g.10 meters of Horizontal Accuracy at 95%) is also presented in the Service Definition Document (SDD) being also in line with the operational requirements defined in IMO Resolution A.1046 (27).

Augmentation data is provided in the following format(s) and corresponding communication method:

The EGNOS GEO satellites transmit right-hand circularly polarised (RHCP) signals in the L band at 1575.42 MHz (L1). The broadcast signal is a combination of a 1023- bit PRN navigation code of the GPS family and a 250 bits per second navigation data message carrying the corrections and integrity data elaborated by the EGNOS ground segment.

The use of ESMAS requires a type approved shipborne receivers (certified according to IEC 61108-7 standard for SBAS L1 receiver equipment) taking advantage of both the GPS Standard Positioning Service (SPS) broadcast signal and EGNOS messages to compute an enhanced positioning and navigation solution with navigational status indications to support a safe navigation.

**Any other information relevant to the general use of the service:**

ESMAS provides guarantees on the SBAS messages (at SiS level), not taking responsibility for the local environment impact at user level. Thus, ESMAS offers service (SiS) level commitments and typical performance based on EGNOS historical data, but no commitments on position domain performances.