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IEC Standardisation for SBAS L1 maritime receivers

# PURPOSE

EGNOS is the Satellite Based Augmentation System (SBAS) over Europe, which broadcasts correction messages that improve accuracy against GNSS standalone solution along with some integrity data that increase the confidence in the navigation position. SBAS systems are designed according to the same standard (SARPs [1]) worldwide. So far, SBAS have already been commissioned in Europe, USA, Japan and India. Analogous systems are under commissioning or deployment in other regions of the world.

The European Commission, EC (EGNOS owner), the EU Agency for the Space Programme, EUSPA (EGNOS Services Programme Manager), the European Satellite Services Provider, ESSP (EGNOS service provider) and the European Space Agency, ESA (EGNOS design agency) are working in close collaboration to provide an **EGNOS L1 maritime service by 2023** for “Harbour entrances/approaches and Coastal waters” and for “Ocean Waters” over Europe. The EGNOS L1 Maritime service aims at providing pseudo-range corrections, associated ranging integrity and alert information to GPS L1 signals to let shipborne receivers compute an enhanced navigation solution with respect to GPS standalone, meeting operational requirements included in the IMO Resolution A.1046 (27) [2] . The service will include performance monitoring reporting and provision of Maritime Safety Information (MSI) as well.

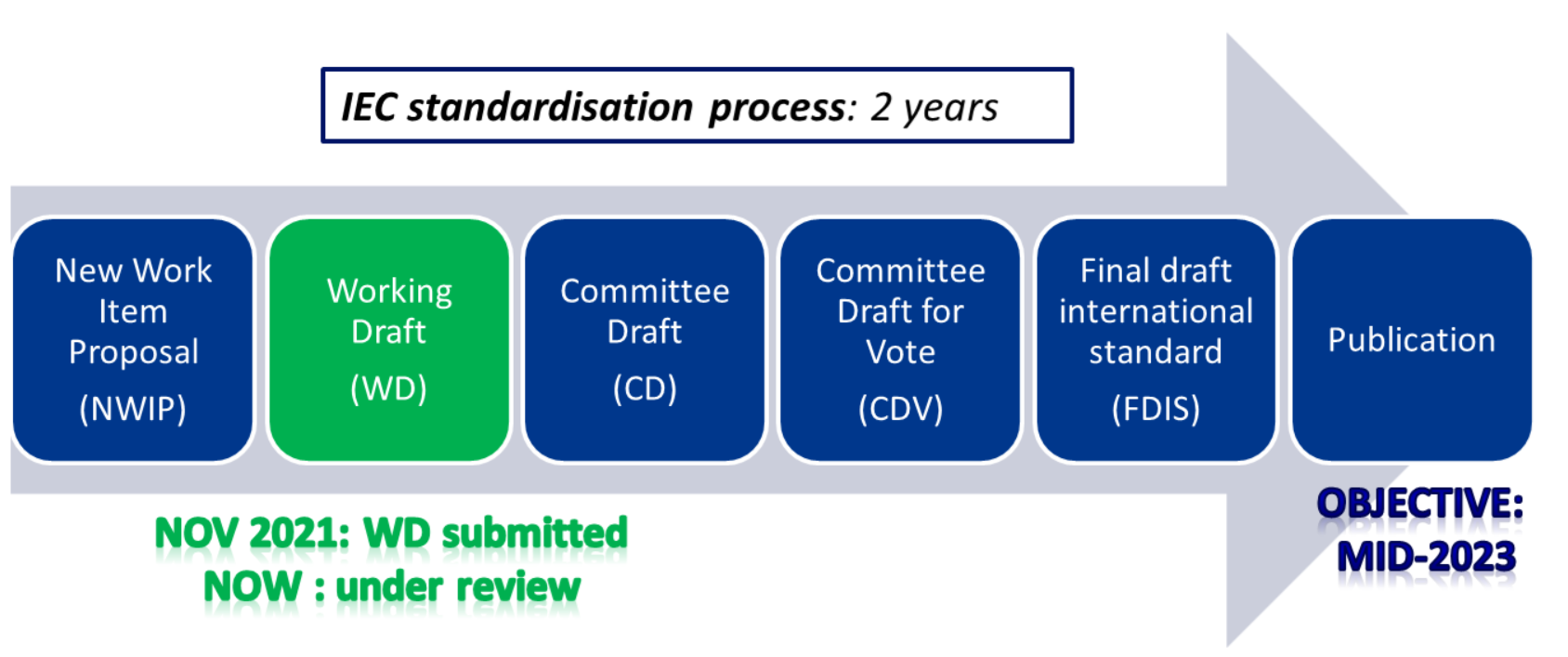
EGNOS L1 performance (accuracy, availability, continuity, integrity, time to alarm, coverage) was already analysed by 2018 concluding that **EGNOS L1 meets the operational requirements stated in International Maritime Organization (IMO) Resolution A.1046 (27)** [2] for “Harbour entrances/approaches and Coastal waters” and for “Ocean Waters” over Europe. Assessment is ongoing to define the potential servicer area for the EGNOS L1 maritime service, which plans to cover most of European coast and inland waters.

In addition, vessels should be equipped with type approved receivers for SBAS L1 in order to ensure the required operational performance for maritime community. For that, EC requested CEN / CENELEC to support the development of a test standard regarding SBAS L1 receivers for maritime applications, which will be covered in a new part standard in IEC 61108 series. The **IEC standardisation process has started** in February 2021, and is expected to be completed by 2023.

# STANDARDISATION PROCESS AND STATUS

The standardisation process to produce a new standard IEC 61108-7 has already started. The title proposal is “*Maritime navigation and radiocommunication equipment and systems - Global navigation satellite systems (GNSS) – Part 7: Satellite Based Augmentation Systems (SBAS) L1 – Receiver Equipment – Performance requirements and method of testing”*.

The New Work Item Proposal (NWIP) for maritime SBAS receiver was launched on February 2021 starting the international standardisation process on the International Electrotechnical Commission Technical Committee (TC) 80. In June 2021 the NWIP was approved by the group and a new Project Team at IEC TC80 was created, PT61108-7, to work on the development of the standard for SBAS L1 maritime equipment. In November 2021 the first working draft, *IEC 61108-7 WD*, was presented at IEC TC80 with the aim of having the Committee Draft, IEC 61108-7 CD, along 2022. The standard IEC 61108-7 is expected to be completed by 2023.



1. IEC steps for standardisation process

# References

1. ICAO Standards and Recommended Practices (SARPS) Annex10 Volume I (Radio Navigation Aids)
2. IMO Resolution A.1046 (27) Worldwide Radionavigation System, 30 November 2011

# request tO MARITIME COMMUNITY

In order to ensure a safe use of SBAS by all shipborne receivers, an IEC 61108 part 7 standard for SBAS receiver equipment is under development. The members of IALA ENG WG3 that would like to support this standardisation process are welcome to join and participate in CEN GNSS European Working Group (CEN/CLC JTC5 /WG 8) of SBAS receiver performance for maritime applications within Technical Committee 5 dedicated to Space and also in the Project Team PT61108-7 within IEC TC 80.

1. Input document number, to be assigned by the Committee Secretary [↑](#footnote-ref-1)
2. Leave open if uncertain [↑](#footnote-ref-2)