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Circular Letter No.5037  
19 June 2025

To: All IMO Members  
Intergovernmental organizations  
Non-governmental organizations in consultative status

Subject: **Communication from the Governments of Estonia and Finland**

The Governments of Estonia and Finland have sent the attached communication, dated 18 June 2025, with the request that it be circulated by the Organization.

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**ANNEX**



**Letter**

18.6.2025

TRAFICOM/415357/04.05.04/2025



REPUBLIC OF ESTONIA  
TRANSPORT ADMINISTRATION

His Excellency Arsenio Dominguez  
Secretary-General  
International Maritime Organization  
4 Albert Embankment  
SE1 7SR London  
United Kingdom

Ref. GNSS interference

Dear Mr. Secretary-General,

Modern shipping relies heavily on satellite navigation services. These systems are the backbone of maritime safety, efficiency, and reliability. On behalf of the Governments of Estonia and Finland, we have the unfortunate responsibility to inform you that we are currently witnessing an increasing number of Global Navigation Satellite System (GNSS) disturbances in European waters, particularly in the Baltic Sea. These disturbances caused by GNSS interference are not just technical anomalies - they pose a growing and serious risk to maritime transport.

**GNSS interference**

Ships and ports increasingly depend on GNSS not only for positioning and velocity data, but also for precise universal and local time. Accurate time synchronization derived from GNSS signals is critical for the safe and efficient operation of navigation systems and essential services such as the Global Maritime Distress and Safety System (GMDSS).

GNSS interference disrupts the reception of satellite-based positioning signals, leading to inaccurate or lost location data. These disruptions can result from intentional jamming and spoofing, unintentional interference, or atmospheric conditions.

The disruption of GNSS signals through jamming or spoofing can compromise onboard operations and navigational accuracy, significantly increasing the risk of maritime accidents such as collisions and groundings. The risks are particularly severe in narrow fairways, congested waters, winter navigation and low-visibility conditions, where precise positioning is essential. While all vessels are affected, older ships with outdated or poorly maintained equipment are especially vulnerable, as they may lack modern multi-frequency receivers or integrated fallback systems.

Recent studies provide cause for concern, especially ship-based GNSS jamming activity in the Baltic Sea, confirming that at least some of the interference appears to originate from vessels in transit. Researchers identified multi-constellation jamming affecting GPS, GLONASS, BeiDou, and Galileo systems, indicating the use of high-power radio equipment capable of disrupting maritime navigation. If accurate, this raises serious safety and security implications for vessels operating in the region.

The integrity of the Automatic Identification System (AIS) is equally crucial in ensuring safe and efficient maritime operations. Keeping AIS active and preventing the falsification or spoofing of ship locations is essential for traffic management, collision avoidance, and emergency response. Manipulating AIS data not only creates confusion, but also increases the risk of accidents, undermines security efforts and complicates search and rescue operations. Trust in GNSS-based navigation and AIS system must be upheld through strict adherence to operational best practices and regulatory oversight.

### **Mitigation measures**

The consequences of these disturbances extend beyond individual vessels. They challenge the integrity of our entire maritime infrastructure. Disruptions can delay cargo shipments, interfere with port operations, and increase the workload of maritime professionals who must rely on alternative navigation tools under challenging conditions. Maritime operators have already begun adapting their procedures and updating guidelines to mitigate these risks. The use of radar, electronic nautical charts, and improved situational awareness strategies have become more essential than ever. At the same time, new technologies are being developed to better detect, identify, and mitigate GNSS interference, further strengthening the resilience of maritime navigation systems.

The hazardous situations due to GNSS interference highlight the need for all vessels to maintain robust backup navigation methods. Crew expertise plays a crucial role in handling these situations, highlighting the need for continuous training and preparedness. To address this, we bring to your attention that Finland has published a repeated Notice to Mariners [\\*126/2025\\*](#) (enclosed) to disseminate the issue to the attention of seafarers. Several NAVTEX messages have been also broadcasted. Furthermore, Finland and Estonia have published a joint Electronic Nautical Chart (ENC) update implementing a Caution Area (CTNARE) in the Gulf of Finland to raise awareness of GNSS and AIS interference. Further details of this chart update are enclosed in the annex.

Furthermore, we have compiled a list of preparations and actions to be taken onboard for GNSS interference situations. The list is enclosed in the annex.

The increasing frequency of harmful interference events has raised serious concern among international organizations. In a joint statement IMO, ITU and ICAO highlighted the growing risk to civil aviation, maritime vessels, and globally time synchronized infrastructures.

It would be highly appreciated if you could bring this notification to the attention of all IMO Member States, Intergovernmental Organizations and Non-Governmental Organizations in consultative status by means of a circular letter.

Yours sincerely,

*Sanna Sonninen*

Sanna Sonninen  
Maritime Director  
Finnish Transport and Communications Agency Traficom

*Kristjan Truu*

Kristjan Truu  
Director of Maritime Division  
Estonian Transport Administration

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\* [https://www.traficom.fi/sites/default/files/media/file/TM\\_2025\\_15\\_EN-1.pdf](https://www.traficom.fi/sites/default/files/media/file/TM_2025_15_EN-1.pdf)

\*126/2025

Finland. Global navigation satellite systems disturbance. GNSS and AIS interference in waterborne transport.

Published 30.5.2025      VALID

References: [81/2025](#)

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GNSS and AIS interference in waterborne transport

The GNSS interference (Global Navigation Satellite System) that began in the spring of 2024 in the Gulf of Finland continues to affect waterborne transport. AIS systems (Automatic Identification System) are also experiencing interference. Reports of interference have been particularly frequent in the eastern Gulf of Finland, but interference also occurs more widely throughout the Gulf of Finland area.

Interference affects the reliability of positioning by disrupting GNSS reception. When interference occurs, mariners cannot fully trust widely used GNSS-based navigation systems but have to rely on back-up systems instead. AIS interference may cause vessels to appear at incorrect locations within the system.

If interference remains undetected, the risks caused by positioning errors increase, particularly in the narrow channels in the archipelago and in poor visibility. Interference is easier to detect when radar and electronic navigational charts are used simultaneously with radar image overlaid on the chart. The skills and professional competence of the crew are highlighted in the event of GNSS issues. If GNSS positioning data is lost, nautical charts, compasses and radars can still be used for navigation.

Fintraffic Vessel Traffic Services (VTS) supports ships and gives ships arriving in the VTS area all the information they need for safe navigation, including information about any GNSS issues.

The Finnish Transport and Communications Agency Traficom's website includes a situational picture of interference in satellite navigation services in Finland.

<https://tieto.traficom.fi/en/statistics/satellite-navigation-service-interference-finland>

Any radio interference observed at sea should always be reported to Traficom:

<https://traficom.fi/en/notifications-radio-interference>

Traficom, Helsinki/Helsingfors 2025

#### ENC Caution Area (CTNARE) – Gulf of Finland

To enhance mariners' awareness and preparedness, Finland and Estonia have jointly implemented a Caution Area (CTNARE) in ENC datasets covering Finnish and Estonian waters in the Gulf of Finland.

The CTNARE is included in General, Coastal, and Approach scale ENCs and alerts navigators during route planning and upon entering the area.

The CTNARE provides the following information:

*“GNSS and AIS interference occurs frequently in the Gulf of Finland. Disruptions may cause system faults and affect navigation system reliability. Continuously verify position using other methods. More information: <https://fiho.fi/lnk/gnss-if> ”*

## **Preparation and Action Onboard in GNSS Interference Situations**

1. Be aware of the risk: GNSS interference can occur anytime and anywhere in the Baltic Sea. Highest risk in in the Gulf of Finland.
2. Monitor maritime safety warnings actively!
3. Identify dependencies: Know which onboard systems rely on GNSS data (e.g. position, heading, speed, time).
4. Use alternative systems: Regularly use navigation methods that don't depend on GNSS, such as radar and paper/electronic charts. Use gyrocompass and log as needed.
5. Create a contingency plan: Prepare and practice alternative procedures for navigation during GNSS disruptions.
6. Recognize interference: Learn to detect GNSS interference, both spoofing and jamming. Not all disruptions mean total signal loss and during spoofing the navigations systems may fail to detect the spoofed information.
7. Know support along the route: Include in your passage plan the stations (e.g. VTS and SRS centers) you can contact if GNSS becomes unreliable.
8. Switch to visual and radar navigation: If GNSS is compromised, use manual steering. If gyro information is not available, use Head-Up radar mode. Disable navigation functions requiring heading input if needed.
9. Report incidents: Notify coastal state authorities (e.g. VTS and SRS) of any interference detected.
10. Stay aware of others: Even if your ship is not affected, nearby vessels may be experiencing GNSS interference. Remain vigilant and be prepared to assist or adjust accordingly.