

EASA views on the implementation of EGNOS-based operations

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Your safety is our mission.

ESSP SAS Oversight by EASA

ESSP SAS OVERSIGHT (I)



OVERSIGHT



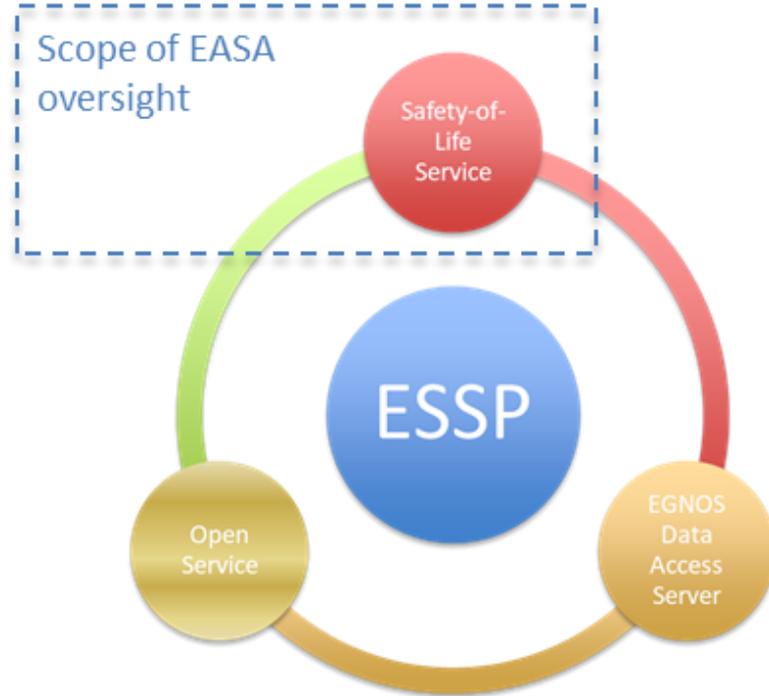
(National)
Competent
Authorities

OVERSIGHT

ATSPs
ADR Operators
...



ESSP SAS certificate renewed in December 2022



ESSP SAS OVERSIGHT (II)

→ Oversight Team:

- EASA Experts
- Seconded National Experts (SNE) and Experts from National Competent Authorities (NCA)

→ Continuous oversight:

- Execution of on-site/remote audits
- Desktop review of changes to functional system

→ Activities at:

- ESSP premises (Toulouse, Madrid)
- Hosting Entities (MCCs, RIMS, NLES)
- Services (TWAN)
- EGNOS Industry (e.g. software assurance audits)

APPLICABLE REGULATIONS

→ ESSP SAS as ANSP

→ **Regulation (EU) 2017/373** on ATM/ANS

→ EGNOS System

→ **Regulation (EU) 2023/1768** on Conformity Assessment of ATM Ground Equipment

→ Also applicable to ESSP SAS during the transition period

→ **Airspace: Performance Based Navigation (PBN) implementation**

→ **Regulation (EU) 2018/1048** laying down airspace usage requirements and operating procedures concerning PBN

OVERSIGHT OUTCOMES IN 2023

- ESSP SAS certificate was renewed in December 2022, on the basis of the new contract with EUSPA.
- Three audits were conducted during 2023.
- Acceptance of EGNOS ESR 2.4.2B, which was introduced into service in Q4 2023.
- Acceptance of updated SoL Service Definition Document (SDD), published in Q4 2023.

2023/1768 Conformity Assessment of ATM/ANS Ground Equipment

EU ATM/ANS GROUND EQUIPMENT FRAMEWORK AS OF OCTOBER 2023



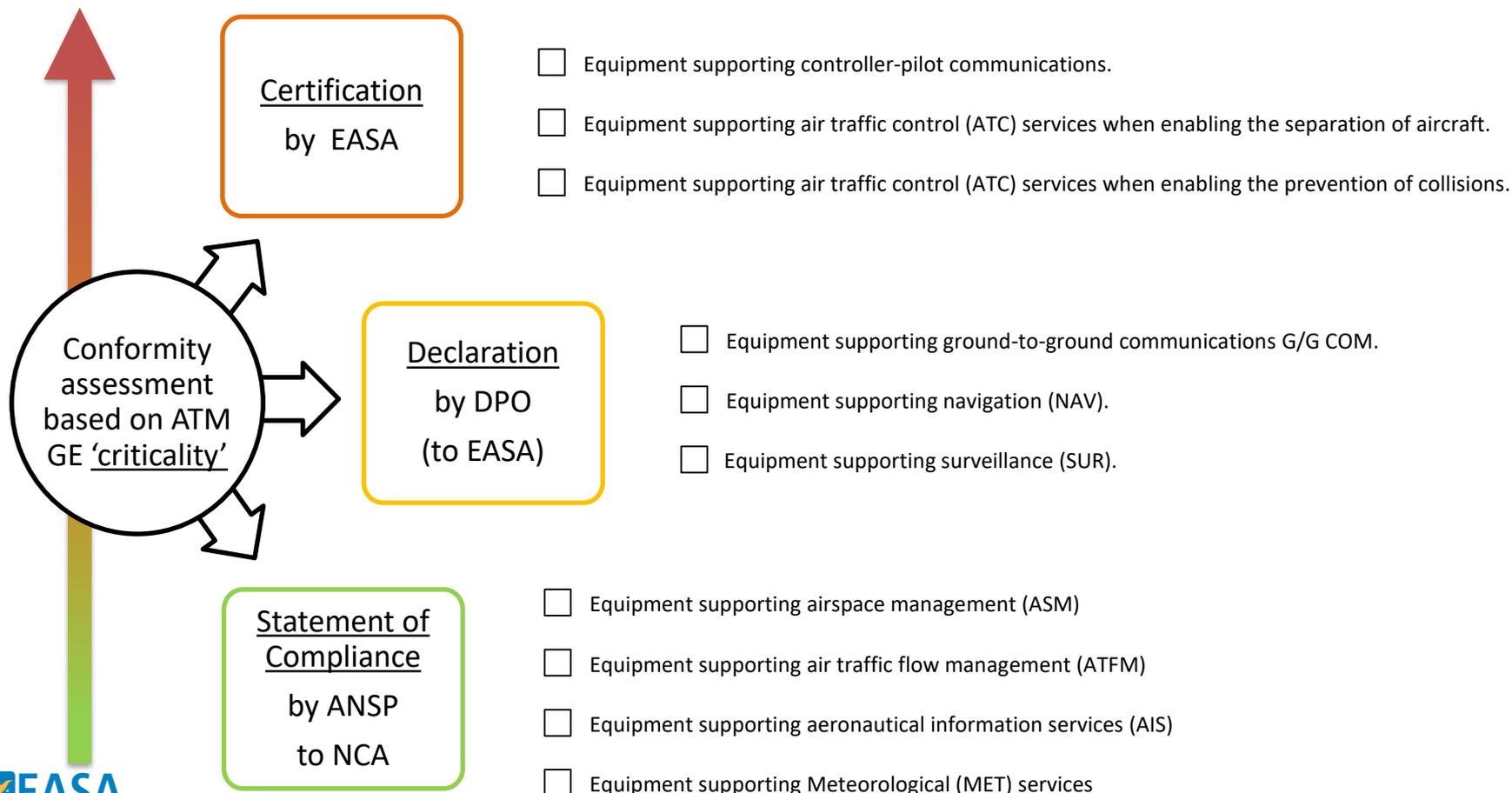
Delegated act on the rules for **conformity assessment of ATM/ANS ground equipment** introducing a regime with 3 methods of attestation (certification, declaration and statement of compliance) (**Regulation (EU) 2023/1768**)

Implementing act on **approval of design or production organisations** concerning obligations and privileges of such organisations (**Regulation (EU) 2023/1769**)

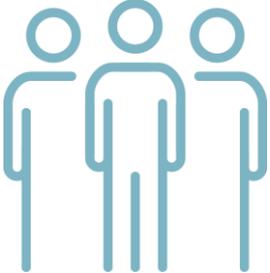


Implementing act on **airspace usage requirements** concerning required equipment on board the aircraft used for **communication, navigation and surveillance** for the use of **European airspace** (**Regulation (EU) 2023/1770**)

ATM/ANS ground equipment – Key elements (1/2): Proportionate approach



ATM/ANS ground equipment – Key elements (2/2): Building on industry standards



EASA Detailed Specifications



EUROCAE
(ED-xx)

ECTRL
ICAO

ETSI, CEN,
CENELEC

OTHER
STANDARDS

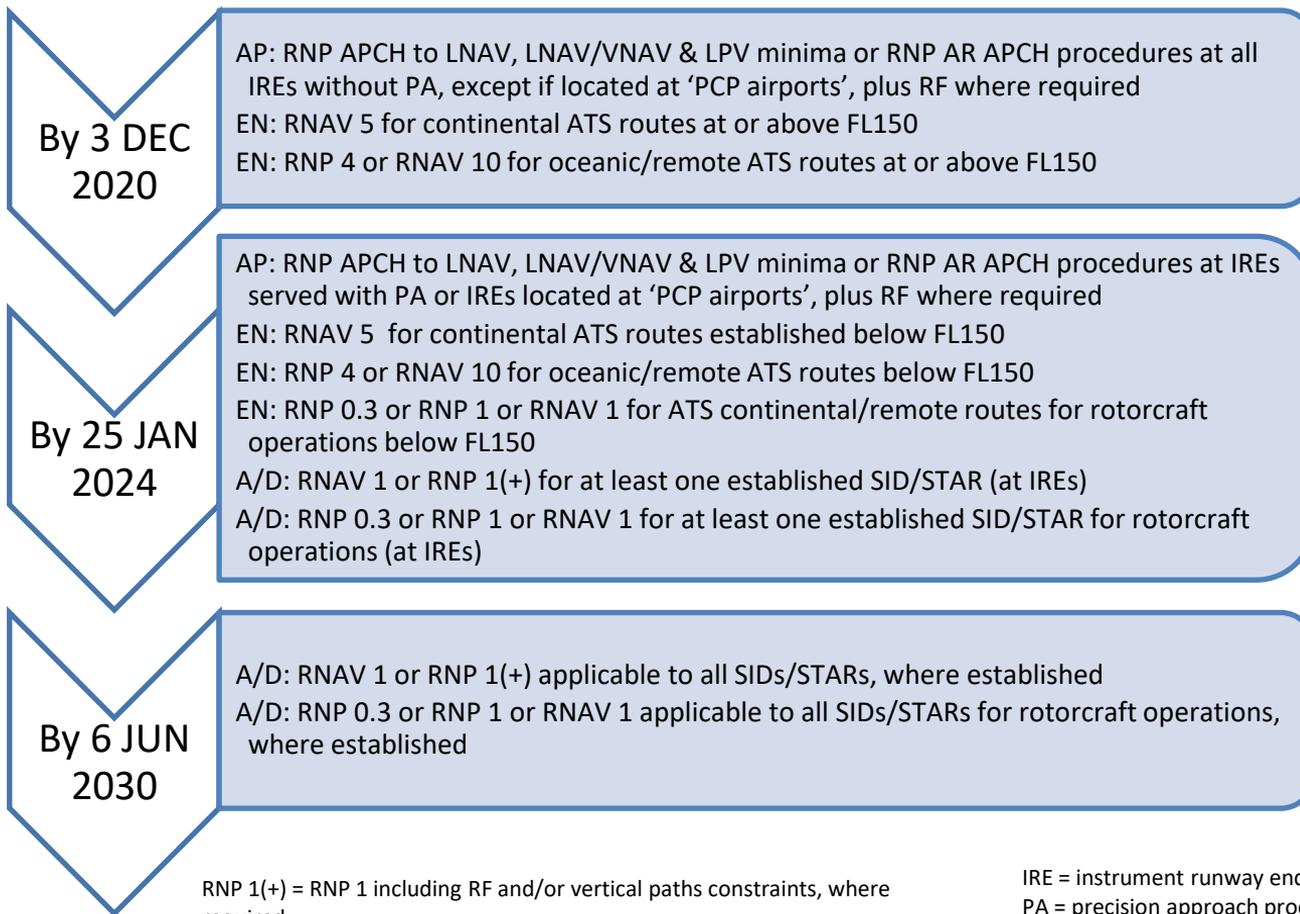
EGNOS SYSTEM CONFORMITY ASSESSMENT

- Dedicated treatment is given to EGNOS in Regulations (EU) 2023/1768 and 2023/1769.
- European Union Agency for the Space Programme (**EUSPA**) is identified as the organisation responsible for the EGNOS attestation through declarations of design compliance.
- EGNOS system oversight will be based on:
 - EASA – EUSPA periodical follow-up meetings.
 - EASA review of EGNOS declarations.
 - EASA inspections (e.g. system/software assurance) on the activities performed by the EGNOS industrial partners.

Performance Based Navigation

Implementation timeline

AP = approach
EN = en route
A/D = arrival/departure



Target navigation scenario after June 2030

- Exclusive use of PBN...
 - Only harmonised PBN applications and functionalities permitted
 - Conventional navigation procedures are no longer allowed
- ... except in the following cases
 - ILS CAT II & CAT III procedures
 - GLS CAT I, CAT II & CAT III procedures
 - **in the event of PBN contingencies**

What are the challenges?

- Operational restrictions to continue using conventional navigation procedures as of 6 June 2030,
 - Implementation delays experienced with the 2020 & 2024 deadlines.
 - Aircraft shall fly RNP approaches even when ILS CAT I equipment is in operation.
 - SBAS-equipment is necessary to reach CAT-I minima. Potential limitations in the aircraft equipage.
 - Some aerodromes might remain out of the EGNOS (EU's SBAS) service areas.
 - PANS-OPS design criteria might not be achievable at all targeted runways.
- GNSS RFI increase might put the benefits associated with PBN implementation at risk

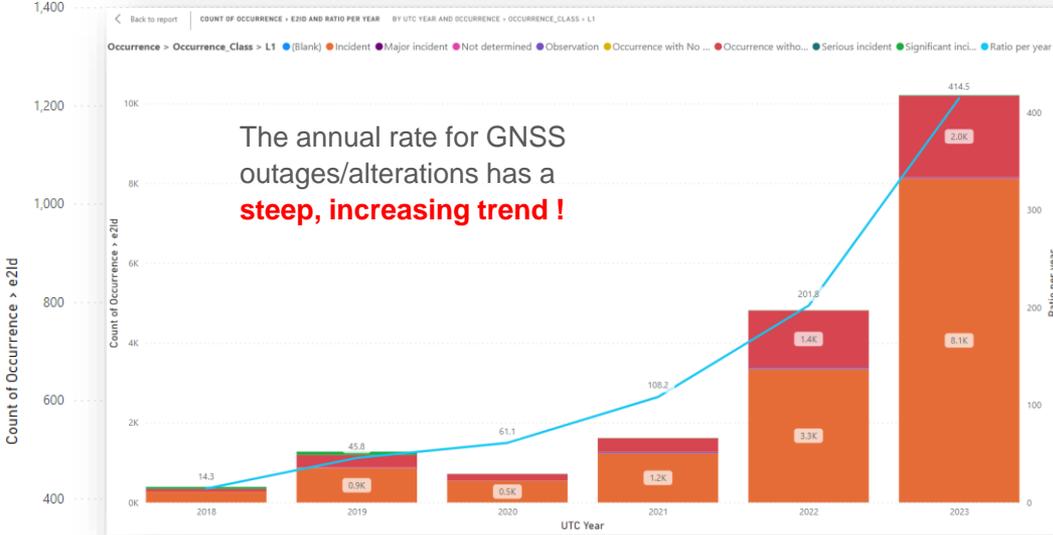
GNSS occurrences (ECR data)

19.73K

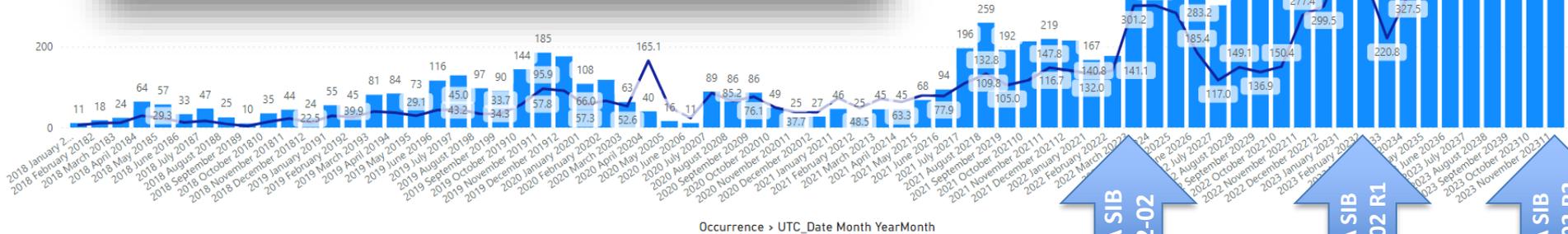
Count of Occurrence > e2Id...

Back to report | COUNT OF OCCURRENCE > E2ID AND RATIO PER MONTH | BY YEAR, MONTH AND YEARMONTH

Count of Occurrence > e2Id | Ratio per month



Continued increase in GNSS jamming and cases of spoofing resulted in EASA SIB 2022-02R2 being issued in November 2023



Rates are per 1.000.000 flights

EASA SIB 2022-02

EASA SIB 2022-02 R1

EASA SIB 2022-02 R2

Some EASA actions in response GNSS RFI

- Different activities are being conducted at EU level including the necessary coordination among European Commission, EASA, EUSPA and EUROCONTROL.
- **EASA SIB 2022-02R2** on Global Navigation Satellite System Outage and Alterations Leading to Navigation / Surveillance Degradation.
- ‘Over-reliance on satellite navigation’ is a potential safety issue (**SI-0034**) under assessment => completion by 2024 with proposed mitigations.
- CARI (CAW) for aircraft (TCH) and equipment (OEM) manufacturers to evaluate effects of GNSS jamming or spoofing on CS25/CS29 products at system and aircraft level.
- [EASA/IATA Workshop on PNT Resilience](#) hosted at EASA premises on 25 January 2024.

Potential regulatory amendments

- Evaluation of the operational restrictions imposed as of June 2030
 - Impact assessment of restrictions to use conventional navigation in consideration of
 - up-to-date risk assessment of GNSS jamming and spoofing,
 - PBN implementation status,
 - aircraft capabilities,
 - vulnerabilities of BARO-VNAV operations.
- Timeline:
 - Impact assessment completion by 2024.
 - New rulemaking task to propose regulatory amendments in 2025 (EASA NPA + Opinion).

Thank you for your attention

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An Agency of the European Union 