



EU SPACE

Galileo Programme Status

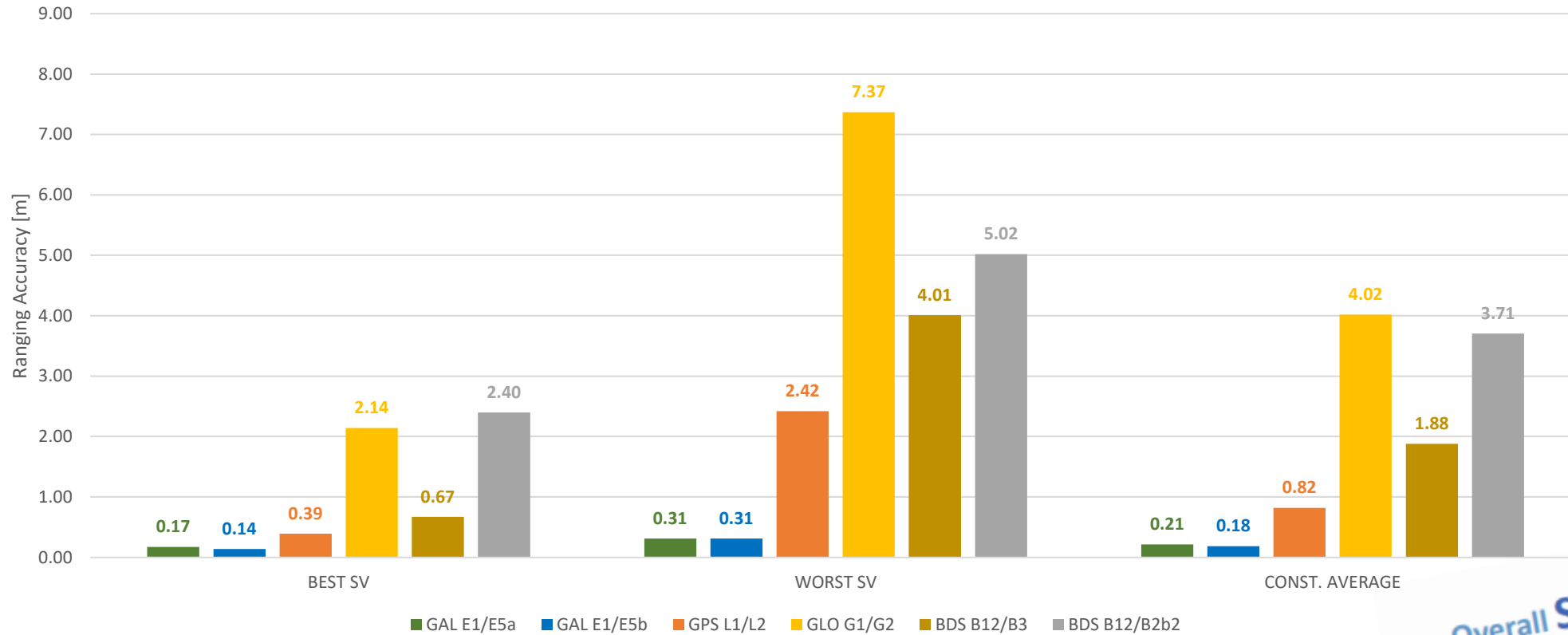
UN / Philippines
Workshop on the Applications
of Global Navigation Satellite
Systems

22 April 2024

Dominic HAYES, European Commission (EC)

Performance Above All

Ranging Accuracy, 95% @ AUL - Dual-Frequency - June 2023



Overall **SATISFACTION**
with Galileo continue to grow

82.35%

Expanded and Strengthened Ground Infrastructure

- New release at End 2023 (Focussed on system security)
- Deployment of New Sensor and TT&C Stations



Launchers

- Two delayed launches to reach Galileo FOC constellation level
- Further enhanced deployments planned with Ariane 6
 - Maiden Flight postponed to mid-2024



Credit ESA



Credit ESA

- Out-of-EU solution for next two launches - SpaceX

Spring and autumn 2024 timeframe

- Aiming for full constellation *with* adequate redundancy

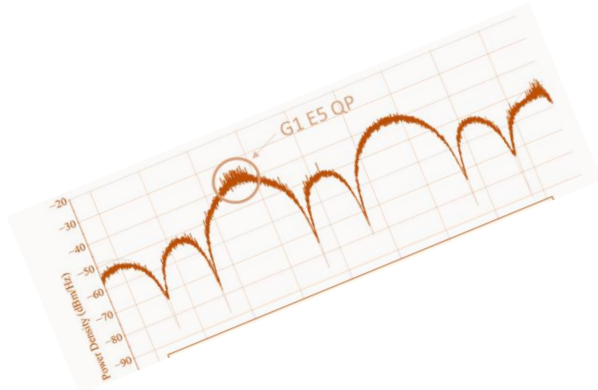
INAV Improvements and New Pilot Signal

- New Reduced Clock and Ephemeris Data
- Reed Solomon Outer Forward Error Correction
- Secondary Synchronisation Pattern

INAV = Faster TTFF, simplified acquisition, and increased robustness

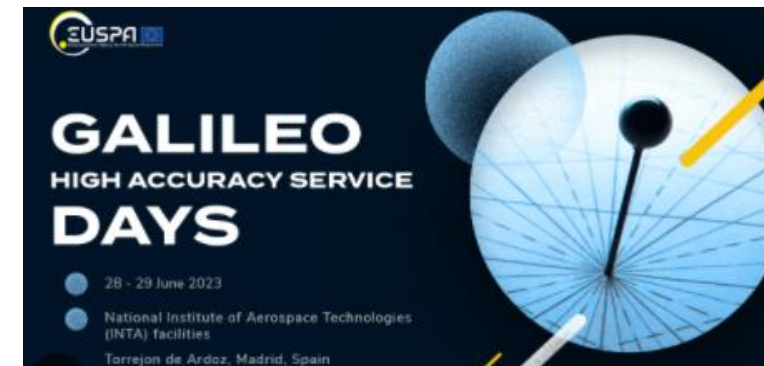
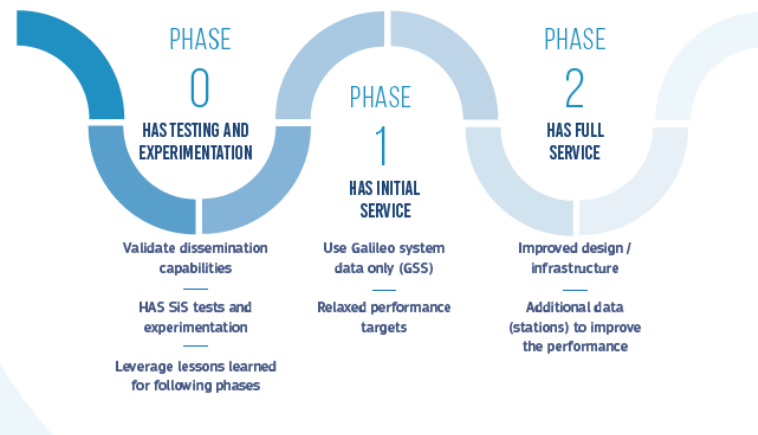
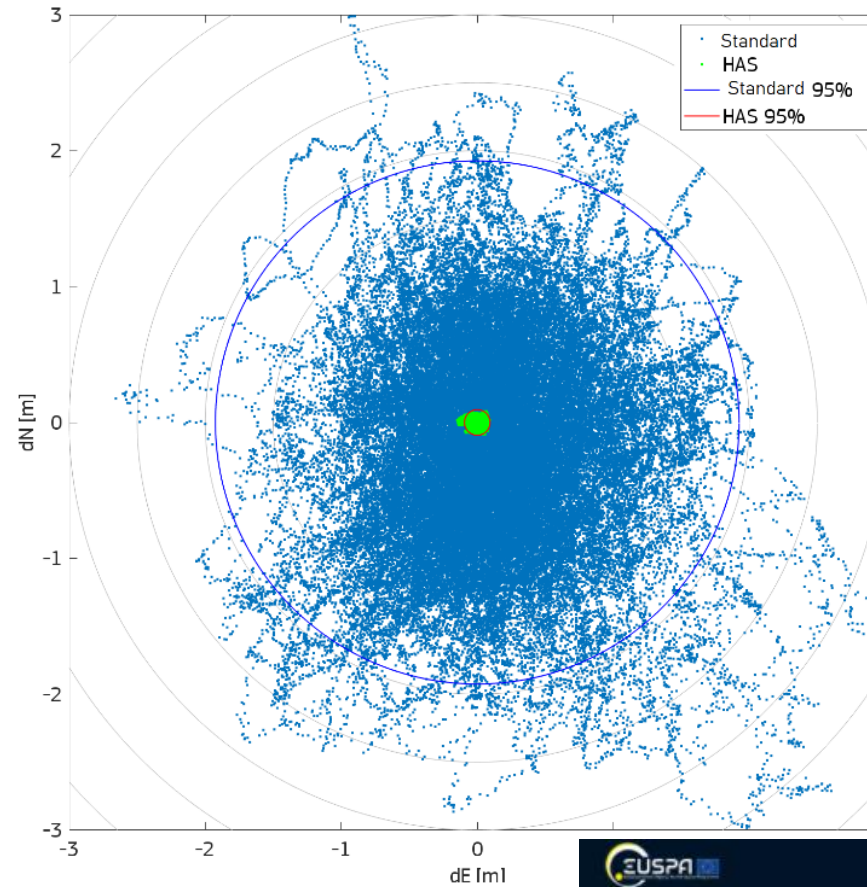
READY

- New Test signals on GSAT 201 and 202
 - Pilot Signal on E5
- = Faster E5 acquisition and better single frequency potential

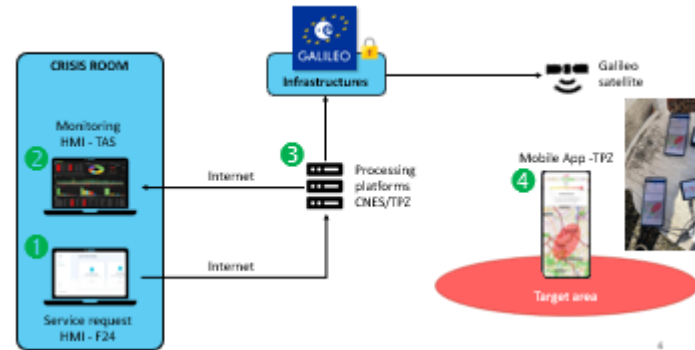


Highest Accuracy

- **High Accuracy** Initial Service Declared in early 2023 – one year of service
- **Very good performance since then!**
- Excellent feedback and interest for the internet distribution service.
- Start of HAS Phase 2 implementation actions



Emergency Warning Satellite Service



Showcase the end-to-end concept

Show user interfaces, functionalities, devices, infrastructures, performance

Consolidate the service concept

Collect feedback from civil protection authorities, to improve the initial service concept

Support the adoption by the civil protection authorities

Build awareness, generate interest, establish credibility

Explain users' duties and obligations, interface requirements, service limitation



SAR

Remote Beacon Activation

- EUROCAE standard approved
- Under consolidation

Two Way Communication

- Enabled by the long Return Link Message
- Based on predefined Q&A helping the rescue mission

Pilot services planned for both, 2025

Distress Position Sharing

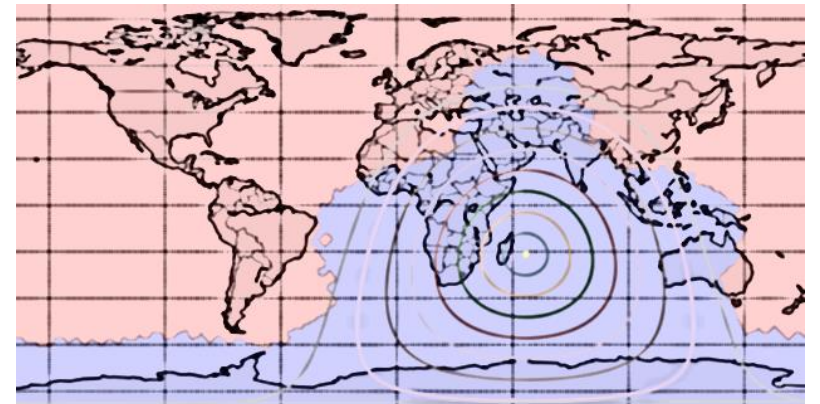
- Rescue Centres can contact Galileo to share the position of a beacon user in distress with other nearby users
- Enable quicker rescue deployment thanks to nearby users

Galileo
SAR/Remote
Beacon
Activation



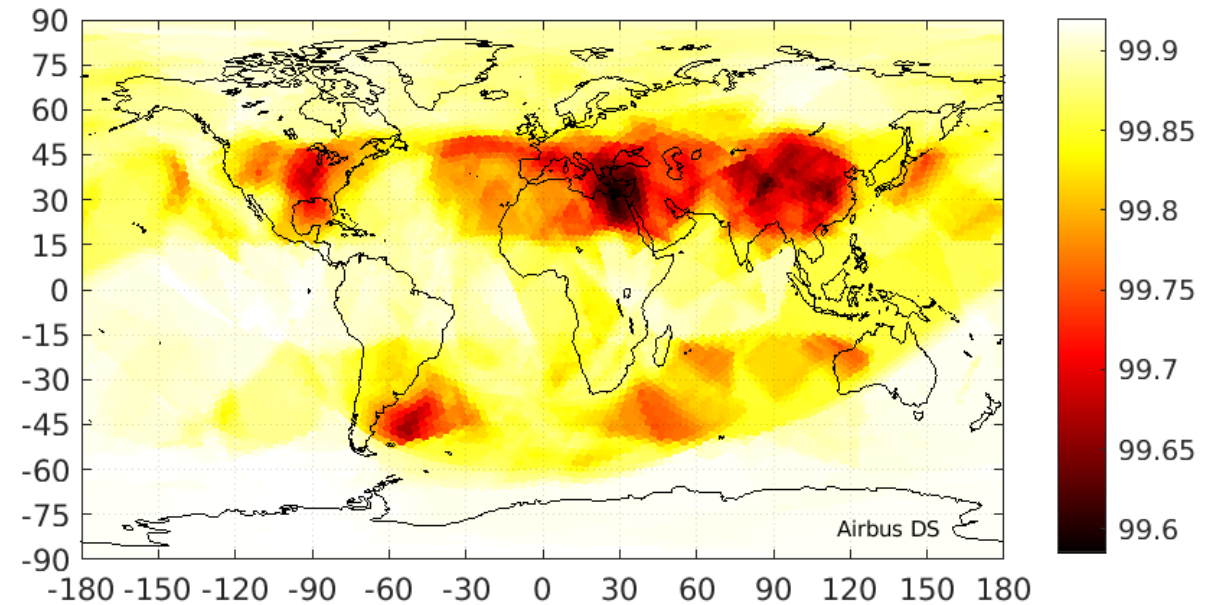
New MEOLUT In Reunion Island

Improves SAR coverage reliability in the Indian Ocean region



The Spoofing Challenge

- OS NMA - Long awaited GNSS feature
- Final OSNMA SIS ICD and receiver guidelines published in late 2022
- Transition to final signal broadcast in July 2023.
- Public Key Infrastructure under finalisation
- Initial Service declaration later in 2024
- First OSNMA receivers on the market



Galileo 2nd Generation

Robustness

New Signals

New and Improved Services

More Data Capacity

State of the Art Technology

Flexibility

Backward Compatibility



Future Evolution



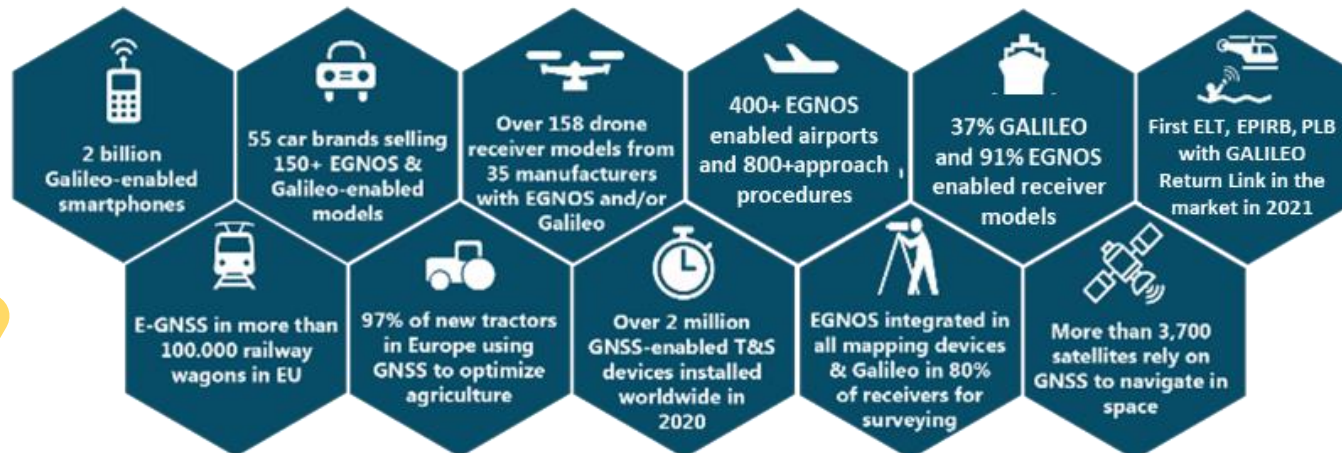
Support Galileo Global Users

4 000 846 595

Estimated number of Galileo enabled smartphones sold until today.



And many more Galileo enabled devices
Find you Galileo enabled device at www.useGalileo.eu



Download the new EO and GNSS EUSPA Market report www.euspa.europa.eu

