

#EUSpace 

# EU SPACE WEEK 2023

7 - 9 November - Sevilla, Spain

## Horizon Europe EGNSS Mission and Service related R&D activities + Contribution to Ionospheric Prediction Service

Leo BIBOLLET, Hanaa AL BITAR (TAS-F)

Javier OSTOLAZA (EUSPA)



European  
Commission



# Horizon Europe EGNSS Mission and Service related R&D activities

- In 2022, European Commission entrusted EUSPA with technical supervision of 2 non-delegated projects under Horizon Europe EGNSS Upstream ‘Mission and Service (MAS)’:
  - Applied R&D on EGNSS Authentication → [E-GIANTS](#)
  - EGNSS Additional dissemination means → [IDEEAS](#)

# E-GIANTS

European GNSS Improved Authentication Solutions

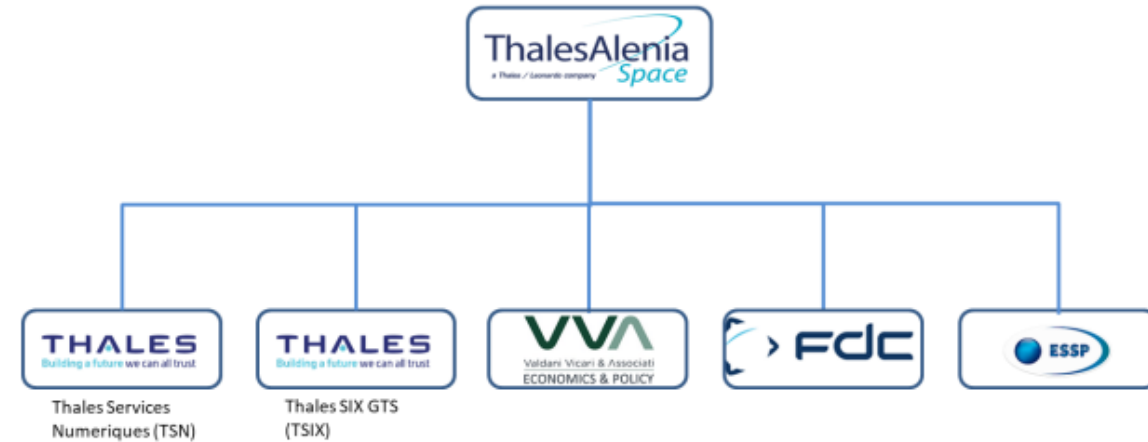


- T0 (signature of the contract): 05/05/2023
- Duration 18 months
- Budget 720 k€

**Objective:** to assess potential EGNSS authentication solutions that exploit the synergies between EGNOS and Galileo

Focus on:

- Improving the **performance and security** of the authentication services provided by EGNSS
- Supporting the definition of optimal **authentication solutions for EGNSS**, measure the **level of protection** achieved and the **impact** on the EGNSS service for non-aviation users



  
The solution must be validated by a proof of concept

# E-GIANTS

European GNSS Improved Authentication Solutions



- Do you use or plan to use the GNSS/SBAS positioning as a primary source in your solution
- What type of threats do you identify regarding the GNSS/SBAS positioning ?
- What benefits could you expect from an authentication services of the GNSS/SBAS ?
- Do the receivers used have an internet access
- Do the receivers have a storage capacity ? If yes, what size ?

**Thales Alenia Space**

- Prime contractor of the project
- In charge of the coordination of the consortium at management and technical level
- Leads the SBAS and OSNMA key management study (WP1) and the SBAS Authentication for non-aviation users (WP3)

**Thales Services Numeriques**

- Leads the additional dissemination and improvements to OSNMA work package (WP2)
- Particularly in charge of the design of the OSNMA improved service, the Proof-Of-Concept and the roadmap

**Thales SIX GTS**

- Expertise in key management and security analysis
- Supports the SBAS and OSNMA key management study (WP1) and the SBAS Authentication for non-aviation users (WP3)

**Valdani Vicari & Associati**

- Leads the user requirement assessments for all the work packages of the project

**FDC**

- Evaluates the impact of the proposed improved EGNSS authentication solutions at receiver level, assessing the induced cost and complexity

**ESSP**

- Expertise of EGNOS service provision
- Support for the consolidation of the SBAS key management and authentication provision scheme



**The solution must be validated by a proof of concept**

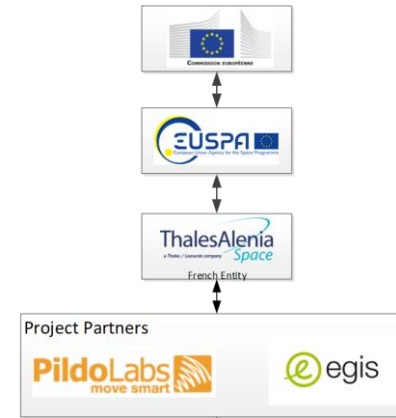
# IDEAS

## INNOVATIVE DISSEMINATION MEANS AS ENABLERS FOR EGNSS AUGMENTATION SERVICES

- T0 (signature of the contract): 14/03/2023
- Duration 18 months
- Budget 620 k€

### Scope:

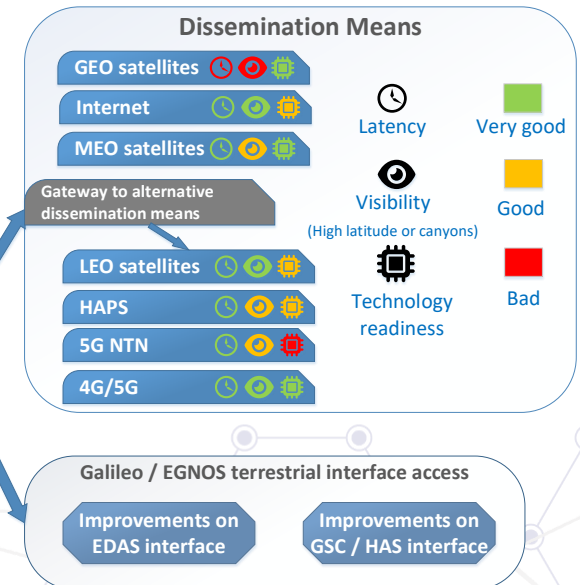
- analyze and define the **cost-effective potential data delivery means complementary / alternative to the current EGNOS and Galileo HAS ones** either from space and/or from ground/air
- **improve the current dissemination capabilities** in terms of potential users and enhanced commitments (e.g. provision of integrity through EDAS)
- propose a meaningful timeframe for the proposed dissemination mean, taking into account standardization and user terminal activities
- perform a **proof of concept of the service**



### End users – targeted use cases



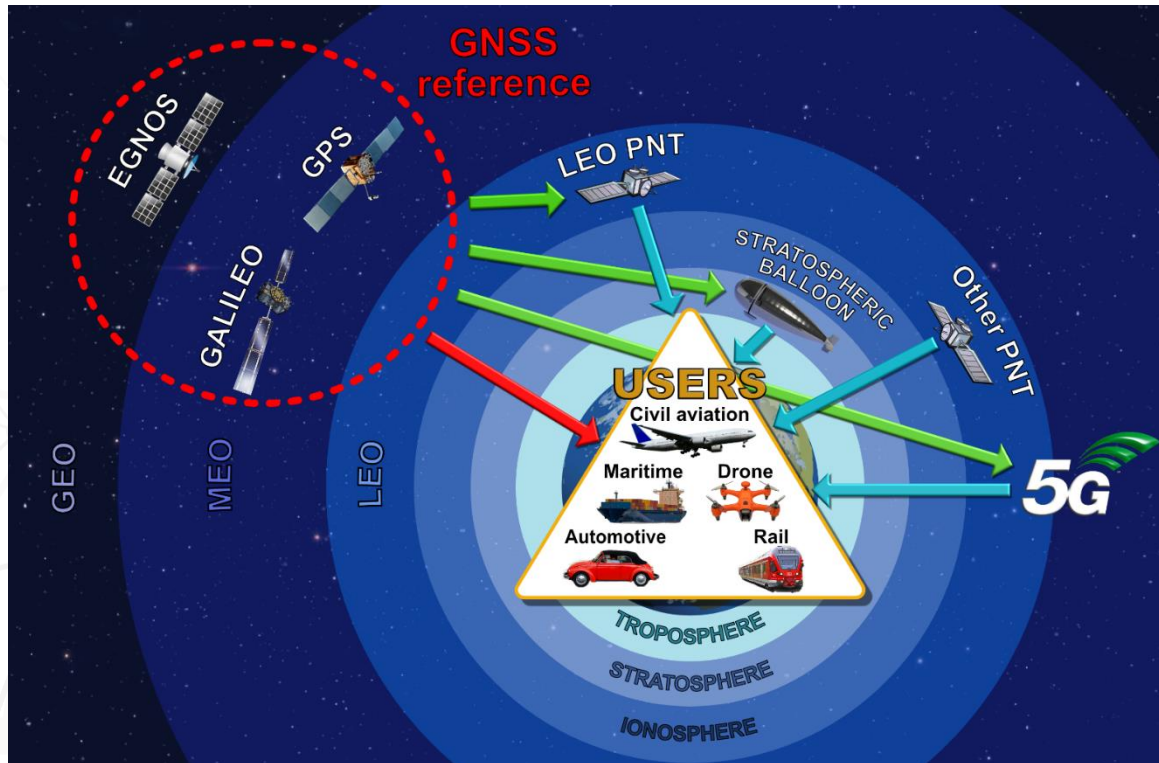
### User needs, and KPIs



The solution must be validated by a proof of concept

# IDEAS

**I**NNOVATIVE **D**ISSEMINATION MEANS AS **E**NABLERS FOR **E**GNSS **A**UGMENTATION **S**ERVICES



- How to support the dissemination of EGNSS augmentation services to different applications with stringent and diverse requirements?
- What are the main limitations of the current dissemination means (GEO/MEO)?
- How to ensure a transparent integration at receiver level of multiple dissemination means?
- How to target Safety of Life (SoL) applications through non-certified dissemination means?
- **How to minimize the impact on legacy services?**

Anchored in the new multi-layer system of system vision for EGNSS evolutions



The results of both projects (e.g. user needs, concepts proposed, costs and benefits, implementation roadmaps) shall be validated by a representative set of stakeholders across different sectors.

To participate or if you have any question, please feel free to contact us:

Contacts	E-GIANTS	IDEEAS
TAS	<a href="mailto:Leo.Bibollet@thalesaleniaspace.com">Leo.Bibollet@thalesaleniaspace.com</a>	<a href="mailto:Hanaa.AlBitar@thalesaleniaspace.com">Hanaa.AlBitar@thalesaleniaspace.com</a>
EUSPA	<a href="mailto:javier.OSTOLAZA@euspa.europa.eu">javier.OSTOLAZA@euspa.europa.eu</a>	<a href="mailto:javier.OSTOLAZA@euspa.europa.eu">javier.OSTOLAZA@euspa.europa.eu</a>

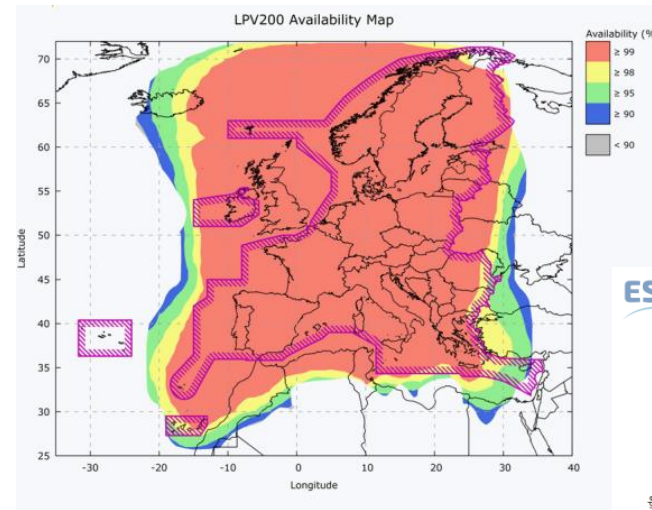
# Contribution to Ionospheric Prediction

YES

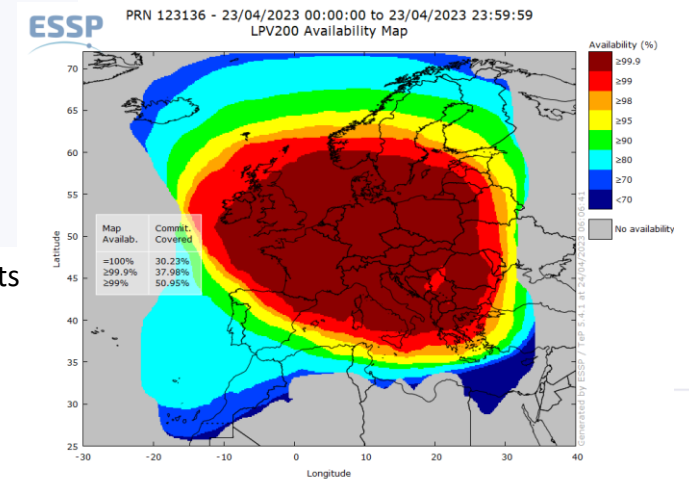
BUT



<https://www.discover-the-world.com/>



EGNOS SoL SDD commitments



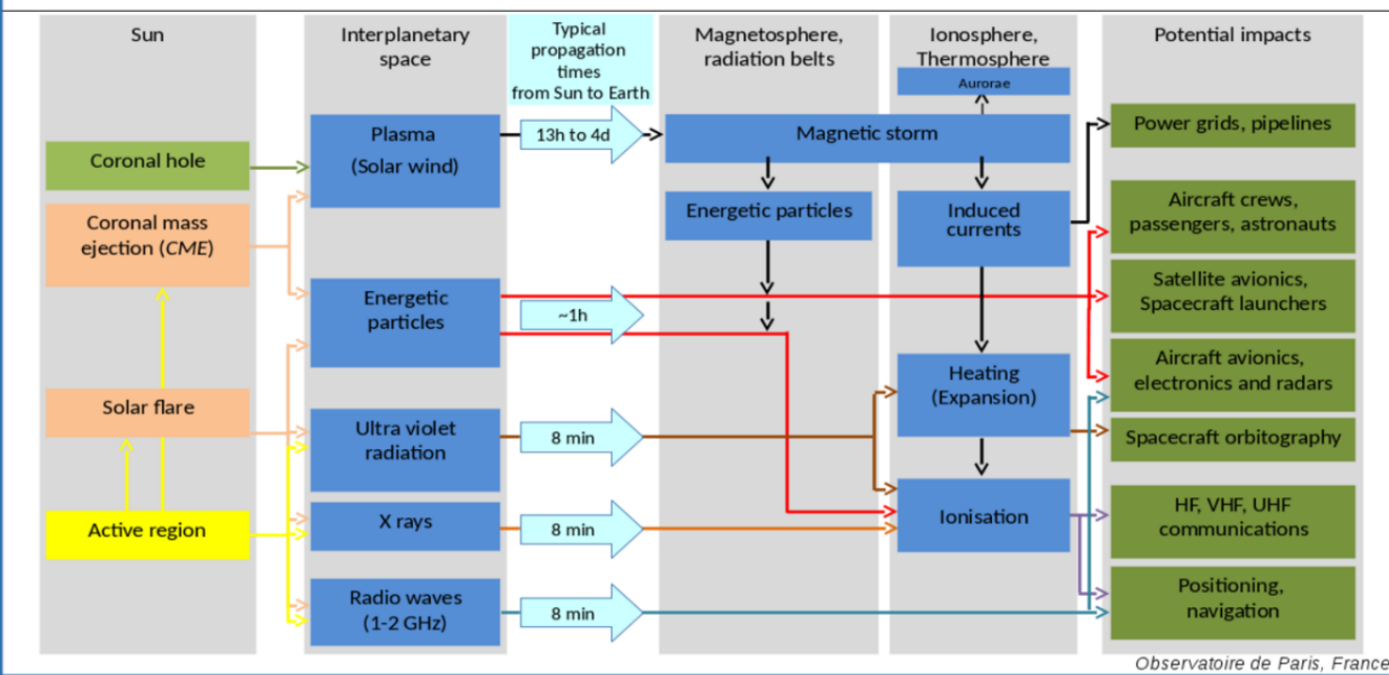
EGNOS SoL real performance



# Contribution to Ionospheric Prediction

EU  
SPACE  
WEEK  
2023






**Illustration of Sun-Earth relations** : colours in the first column show phenomena varying according to different timescales : coronal holes are stable for several solar rotations (27 days), active regions vary on timescales comparable to the Sun rotation period, while solar flares and mass ejections are explosive phenomena. All of these phenomena vary according to the 11 year activity cycle.



EUSpa


# Contribution to Ionospheric Prediction

## Next steps

-  Assess main contributors to space weather impact on EGNSS (EGNOS and Galileo)
-  Assess feasibility of predictions/forecast
-  Assess impact on user operations
-  Assess how to inform users on potential EGNSS underperformance
-  Define an operational service concept

To participate or if you have any question, please feel free to contact us:

[javier.OSTOLAZA@euspa.europa.eu](mailto:javier.OSTOLAZA@euspa.europa.eu)



EU  
SPACE  
WEEK  

---

2023

[www.euspaceweek.eu](http://www.euspaceweek.eu) | #EUSW

