EGNSS Centre of Excellence

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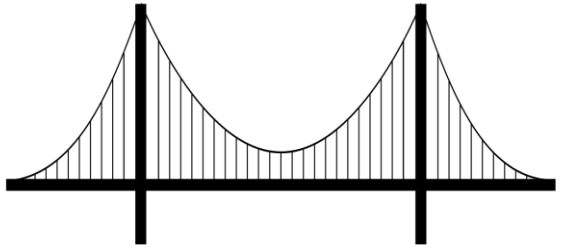
GNSS Background

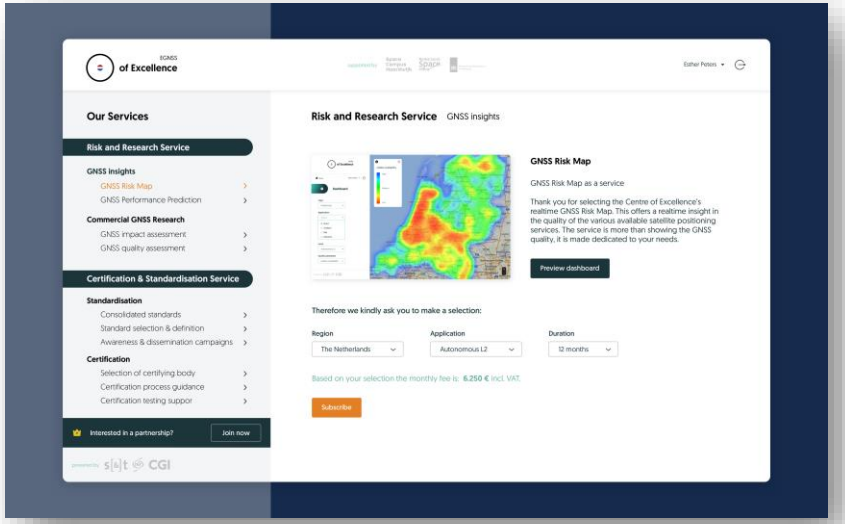
- E-GNSS = European GNSS
- GNSS = Global Navigation Satellite System
  - GPS, Galileo, Beidou, Glonass
  - Augmentation systems: EGNOS
    - Additional accuracy and information about integrity
  - Used for Position, Navigation and Timing (PNT) information
- You all know GNSS, but that is the **open services** (no guarantees)
- Galileo has **additional services**:
  - Secure authentication: Public Regulated Service (PRS)
  - High Accuracy Service (HAS)
  - Precise Timing Service (PTS)
- E-GNSS =
  - Galileo and EGNOS space component and the ground Infrastructure for reference measurements
  - User segment, e.g., receivers to handle the special services

E-GNSS CoE



- The infrastructure of CoE creates a fundament for safe space data usage

E-GNSS CoE can develop into a Space Center of Excellence to enable safe and conscious use of space data in Europe!



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01/20/2022

NL SPACE CAMPUS Connecting the curious

Netherlands Space Office

CGI

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51 EGNSS applications for Smart mobility

- Project size: 2- 3MEURO; 5 will be awarded
- TRL 7– 9 at the end
- Development of EGNSS based accuracy, safety-and liability-critical applications in long lead time market segments such as aviation, maritime, rail, road transportation and multi modal domains.
- EGNSS response to the increasing mobility demands and emerging transport solutions, such as those enabled by autonomous or unmanned platforms, supporting new policies aimed to incentivise green and sustainable transportation of goods and people.
- The action aims at fostering the EGNSS market uptake in transport. Applications should demonstrate the advantage of Galileo and EGNOS specific features and differentiators for their use in smart and green mobility, and should contribute to a resource efficient, safe, climate and environmentally friendly transport, that will be for the benefit of citizens, the economy and society.
- Aviation / Maritime / Road / Rail
  - Maritime: e.g., improve port efficiency, inland waters, …
  - Road: Smart tachograph, AI-based cyber threat mitigation (e.g. spoofing attacks on localization), GNSS tolling
  - …
- What is important:
  - High Accuracy
  - Integrity
  - Robustness (jamming and spoofing)

52 EGNSS applications for Safety and Crisis management

- Project size: 2- 3MEURO; 3 will be awarded
- TRL 7– 9 at the end
- Improved emergency disaster risk management and societal resilience.
  - HAS for response and recovery, Search and Rescue, Drone and Robot operation,
- Timing and synchronisation applications
  - Financial, 5G synchronisation, Smart Grid (Phasor Measurement Unit),
- Proposals should exploit EGNSS differentiators such as Galileo Open Service multi- frequency, Galileo High Accuracy Service (HAS), Galileo Open Service Navigation Message Authentication (OS-NMA), Galileo Signal Authentication Service and Galileo Search and Rescue Service (SAR) for the development of new innovative applications.

53 EGNSS applications for the Digital Age

- Project size: 2- 3MEURO; 3 will be awarded
- TRL 7– 9 at the end
- Example topics:
  - IoT
  - Mobile Solutions
  - mHealth for “silver economy”
  - AI, big data, geo-tagging, …
  - Cyber security, security of location, quantum, …
  - Logistics
  - Sports fitness

56 Designing space-based downstream applications with international partners

- 0.5 – 1 MEURO; 5 will be awarded
- Other countries: the United States, Australia, Ukraine, Chile, Colombia, Serbia, African Union, India and Brazil.