European GNSS Applications in H2020

Countdown to H2020
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European GNSS Agency
The European GNSS Agency (GSA)

- **Staff:** 88
- **Nationalities:** 18
- **Headquarters:** Prague

The European GNSS Agency mission includes contributing to the exploitation of the EGNOS and Galileo system
- to the full benefit of users in the European Union,
- to maintain the system and services in the most cost-efficient manner,
- to promote the development of applications and value added-services towards defined user segments.
GSA role within EU GNSS programmes

- Political Oversight
  - European Council and Parliament

- Programme Oversight and Programme management
  - European Commission

- Execution
  - European Space Agency (ESA)
    - IOV Contracts
    - FOC Contracts

- Delegation
  - European GNSS Agency (GSA)
    - Security centre (GSMC)
    - Security accreditation
    - Marketing of the systems
    - Applications R&D programme
    - Market Development
    - Upcoming responsibility
    - Systems exploitation

- Delegation assistance

- Upstream (space) industry
- Downstream (applications) industry
EU-GNSS market potential
European G NSS – EGNOS and Galileo

EGNOS

- European Geostationary Navigation Overlay Service
- Increases the accuracy of GPS positioning and provides information on its reliability.
- Services (OS, SoL, EDAS)
  - OS operational since October 2009; SoL available from March 2011
  - SBAS available in over 70% of commercial receivers models

Galileo

- Autonomous infrastructure
- Highly accurate global positioning services worldwide
- Civil system, interoperable with GPS, GLONASS, and BeiDou
- 4 services (OS, CS, PRS, SAR)
- Already 30% of receiver models are Galileo ready
NOW is the right time to invest in GNSS applications

7 bln GNSS devices by 2022 – almost one for every person on the planet

- The projected long-term growth gives significant business opportunities for GNSS market.
- Along with the rapid development of new services and applications, the business environment of GNSS market is demanding and requires constant innovation on the supply side.
Many EGNSS opportunities in different market segments

<table>
<thead>
<tr>
<th>Segment Service</th>
<th>Mass Market</th>
<th>Intelligent Transport Systems</th>
<th>Aviation</th>
<th>Maritime</th>
<th>Rail</th>
<th>Professional</th>
<th>Governmental</th>
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<tr>
<td><strong>EGNOS</strong></td>
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<td><strong>GALILEO</strong></td>
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<td>High Precision</td>
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<td>Public Regulated Service</td>
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<td>Search and Rescue</td>
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Applications
personal navigation, advertising, emergency caller location, gaming, sport and entertainment, weather information and news, social networking

Recent developments
• Augmented reality
• Indoor positioning

Devices
• Integration of positioning into devices such as cameras, watches, and binoculars

Technology
• Various positioning technologies integrated into one device.
• Switching from outdoor to indoor positioning.
E-GNSS concrete opportunities for industry – Aviation

Communication, Navigation and Surveillance applications for all phases of flight will rely on E-GNSS

Foster EGNOS adoption and get prepared for its evolutions:

✓ Enabler of **Performance Based Navigation**
✓ Increases **safety**, and delivers operational benefits
✓ Demanding applications, 4D, LPV 200.

**Galileo** performance will contribute to **safer global aviation**:

✓ **Multiconstellation/multifrequency** enables more robustness against vulnerabilities
✓ Contribution to GBAS
✓ **Interoperability** with other GNSS
EGNOS and Galileo, can contribute to a safer and more efficient navigation

**Examples of applications:**
- General navigation
- Automatic collision avoidance
- Track control
- Traffic management
- Port operations
- Fisheries monitoring

**Galileo will efficiently contribute to international SAR operations**
- Europe’s contribution to the MEOSAR system of COSPAS-SARSAT
- Forward link: Time reduction in the detection and localization of SAR alert
- Return link: Sends detection acknowledgement message from the SAR operator to the distress emitting beacon
GNSS FP7- experience and results
GNSS FP7 results in a nutshell

**GNSS FP7 1st, 2nd and 3rd Calls**

- 6 Patents (including ongoing applications)
- 31 Products
- 39 Working prototypes
- 27 Proof of concepts

- 3 calls for proposals on GNSS Applications
  - Portfolio of ~90 R&D projects with a budget of ~€70 mln
  - 425 beneficiaries

- ~40% of GNSS funds to SMEs vs. EU FP7 average <15%

...there are more tangible results...

Visit: http://www.gsa.europa.eu/r-d/gnss-project-portfolio
GNSS FP7 in numbers: Awarded projects

Number and percentage of proposed projects awarded funding

<table>
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<tr>
<th>Call</th>
<th>Proposals</th>
<th>Projects</th>
<th>% of proposals awarded funding</th>
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<tbody>
<tr>
<td>1st Call</td>
<td>65</td>
<td>24</td>
<td>37%</td>
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<td>2nd Call</td>
<td>104</td>
<td>29</td>
<td>28%</td>
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<td>3rd Call</td>
<td>148</td>
<td>39</td>
<td>26%</td>
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<td>Total</td>
<td>317</td>
<td>92</td>
<td>29%</td>
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H2020 opportunities
European GNSS Applications are funded in Space WP...

Galileo Call

Excellent Science
- Frontier research
- European Research Council (ERC)
- Future and Emerging Technologies (FET)
- Marie Curie actions on skills, training and career development
- Research Infrastructures

Industrial Leadership
- Innov. SMEs
- Access Risk Finance
- Info. Commun. Technologies
- Key Enabling Technologies

USER

Beneficiary

Enabler

Space Theme RTD&I

Synergies with other topics

Societal Challenges
- Bioeconomy
- Food security
- Sustainable agriculture & Forestry
- Marine & maritime research
- Secure societies
- Energy
- Secure, clean and efficient
- Transport
- Smart, green and integrated
- Resource Efficiency & Raw Materials
- Climate Action

SPACE in H2020

European GNSS Agency
... and other Work Programmes with E-GNSS related calls

**Smart, green and integrated transport**
- **MG.3.5-2014**: Cooperative ITS for safe, congestion-free and sustainable mobility
- **MG.4.2-2014**: Safer and more efficient waterborne operations through new technologies and smarter traffic management
- **MG.6.3-2015**: Common communication and navigation platforms for pan-European logistics applications
- **MG.7.1-2014**: Connectivity and information sharing for intelligent mobility
- **MG.8.2-2014**: Next generation transport infrastructure: resource efficient, smarter and safer

**Secure societies – Protecting freedom and security of Europe and its citizens**
- **BES-10-2015**: Information management topic 1: Civilian humanitarian mission personnel tracking
  - **1 - PRS item 1**: Use of Galileo PRS in Professional Mobile Networks receiver, provision of an Early Service
  - **2 - PRS item 2**: Remote PRS processing server

**Information and Communication Technologies**
- **ICT 16 – 2015**: Big data – research
- **ICT 23 – 2014**: Robotics
- **ICT 24 – 2015**: Robotics

**Secure, clean and efficient energy**
- **LCE 7 – 2014**: Distribution grid and retail market
- **LCE 6 – 2015**: Transmission grid and wholesale market

**Space**
(Other than Applications in Satellite Navigation Call)
- **EO-1-2014**: New ideas for Earth-relevant space applications
- **PROTEC-1-2014**: Space Weather
- **SME Instrument**
- **Other actions**:
  - Research and Development activities related to Galileo Public Regulated Service (PRS)
  - GNSS Evolution, Mission and Services related R&D activities
  - GNSS evolution, infrastructure-related R&D activities

**Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy**
- **ISIB-4-2014/2015**: Improved data and management models for sustainable forestry
1 - EGNSS applications (15-20 M€)
Indicative projects size: 1.5 - 4 M€

2 - SME based EGNSS applications (5-10 M€)
Indicative projects size: 0.5 - 1 M€

3 - Releasing the potential of EGNSS applications through international cooperation (5-8 M€)
Indicative projects size: 0.5 – 1.5 M€

4 - EGNSS awareness raising, capacity building and/or promotion activities in and outside of EU (5-10 M€)
Indicative projects size: 1 - 2 M€

E-GNSS Apps development

Innovation*: up to 70% funding
(exception: up to 100% for non-profit)

Promotion of E-GNSS use by using various means

Coordination and Support Actions (CSA)*: up to 100% funding

*+ for indirect cost: flat rate of 25% with some exceptions e.g. subcontracting
Projects should be focused on:

- Development of innovative applications, products, feasibility studies, market tests
- Exploitation of synergies with other space-based services and systems
- Validation of Early Services
- Implementation of pilot projects
- Supporting standardisation, certification, legal and societal acceptance
- Fostering development of innovative applications within international context and related standards with high international impact
- Organization of awareness campaigns

In ALL market segments
How to build a successful proposal

- Highlight your strong points. Proposals should be clear, concise and concrete.
- Explain what is new in your idea, why it is needed, how you will make it happen.
- Address innovation from the end-user point of view.
- Explain the added value of EGNSS.
- Show realistic intention to go to market with a good preliminary business plan.
- Bring partners with track record of successful innovation and access to the target market.
- Show your commitment: H2020 is not your only source of funding, you have a plan B.

Start early enough, consortium building and proposal writing takes time!
We are waiting for your proposals!

11 December 2013 call open!


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<thead>
<tr>
<th>Action</th>
<th>Tentative Deadline</th>
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<tbody>
<tr>
<td>Publication and Opening Call 2014</td>
<td>11 December 2013</td>
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<tr>
<td>Closure Galileo Call 2014</td>
<td>3 April 2014</td>
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<tr>
<td>Admissibility/eligibility checks</td>
<td>April 2014</td>
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<tr>
<td>Evaluation and ranking</td>
<td>~ End April – end June 2014</td>
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<td>Information to participants</td>
<td>~September 2014</td>
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<td>First projects starting</td>
<td>~ early 2015</td>
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Latest information at GSA website and social networks

http://www.gsa.europa.eu/r-d/h2020
https://www.facebook.com/EuropeanGnssAgency
https://twitter.com/EGNOSPPortal
WORKSHOP
European GNSS applications in H2020
04.02.2014, Prague

For more information contact:
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Thank you!

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