

**EGNOS Exploitation
Grant Plan 2015 v1.2**

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V1.2**

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1. EGNOS Exploitation 2015 Grant Plan v1.2

1.1 Support to the continuous development of EGNOS and Galileo programmes in the field of Aviation (EEX.0039_40)

LEGAL BASIS: Regulation (EU) No 1285/2013

One specific grant to be awarded to EUROCONTROL under the Framework Partnership

BUDGET LINE:

BO3920 - EGNOS Exploitation

BACKGROUND: Following the recommendations of the Joint EU-EUROCONTROL Task Force on GNSS of 28 June 2013, the GSA intends to sign in Q1 2015 a Framework Partnership Agreement (FPA) with EUROCONTROL for the period 2014-2020 on the grounds of Article 190(1)(f) of the Rules of Application establishing a long-term cooperation between the GSA and EUROCONTROL.

The indicative overall budget of the grants to be awarded for the entire duration of the FPA is estimated to reach up to €6.000.000. The GSA foresees to award a first Grant upon signature of the FPA, corresponding to work to be done in 2015.

In 2015, a second Specific Grant based on the framework partnership Agreement is planned to be awarded to EUROCONTROL for the continuation of activities within the scope of the FPA.

Priorities, objectives pursued and expected results:

The second Grant shall address activities within the topics below.

- The definition of mission level requirements for EGNOS and Galileo;
- The operational introduction of European GNSS services (EGNOS and Galileo) for aviation in European Civil Aviation Conference (ECAC) area;
- The advice on Regulatory and Standardisation aspects, including spectrum;
- The support to European GNSS Development and Exploitation Activities (major systems reviews and Programme level activities managed by the EU);
- The inclusion of EGNOS and Galileo in future GNSS user terminals for aviation;
- Coordination of R&D for GNSS in aviation;
- Aviation-specific performance monitoring;
- Support the GSA upon request on International activities on GNSS in the aviation domain; including European GNSS activities outside ECAC area.

Description of the activities to be funded under the 2015 specific grant:

The activities funded within the second specific grant shall fit within the high-level activities description below:

- (1) The definition of aviation users' needs:
 - a. Support in the consolidation and the implementation of the technical aviation requirements regarding Safety of Life services (including ADS-B) for European GNSS systems in line with strategy and needs established by the SESAR JU
 - b. Setting NOTAM requirements for Aeronautical Information Services.
 - c. Support on the definition of GSC functions to adapt NAGUs into NOTAMs for aviation.
 - d. Undertake specific mission studies upon request
- (2) Support to the operational introduction of European GNSS services (EGNOS and Galileo) for aviation in the European Civil Aviation Conference (ECAC) area:
 - a. Support in setting up a 'service implementation strategy' in aviation through EGNOS, in the short term, and integrating Galileo in the mid/long term, taking into account and in line with the actions related to the deployment of SESAR.
 - b. Support to the implementation of new procurements and grants aiming at supporting the use of EGNOS in aviation: support in the preparation of calls for tender or calls for proposals, and to their evaluation, with technical assistance on a "on-request" basis.
 - c. Ad-hoc support, on a "on-request" basis and after EC approval, to civil aviation authorities, ANSPs and aircraft operators in the EGNOS operational implementation.
 - d. Support on a "on-request" basis activities for the bilateral cooperation with US on satellite navigation, in line, notably, with the SESAR Annex of the EU-US Memorandum of Cooperation in civil aviation research and development.
 - e. Communication and awareness activities in aviation events to promote the use of EGNOS, on GSA request.
 - f. Support to promote the use of EGNOS and Galileo in the context of multi-constellation GNSS.
- (3) Provision of advice and support on Regulatory and Standardisation aspects, including spectrum management. This includes notably:
 - a. Support EGNOS and Galileo standardisation activities in EUROCAE to ensure coherence with GNSS equipment mandates prepared for the EC.
 - b. Support frequency management actions (licensing rules / ban on jammers / regulation of pseudolites, protection of GNSS spectrum, Compatibility between GNSS and other aviation systems...). The objective is to keep a good visibility of the analyses conducted and positions taken by the aviation community on such topics and ensure consistency with the regulatory actions to be decided by the European Commission
- (4) Support to European GNSS Development and Exploitation Activities. The work covers

contribution to major systems reviews and Programme level activities, notably:

- a. Support in the EGNOS systems reviews (if applicable)
- b. Support the Galileo system reviews (if need be).
- c. Ad-hoc support during iterations with programme stakeholders

(5) Contribution to the coordination of European R&D activities for GNSS in aviation. This shall include:

- a. Support the coordination of the R&D activities on GNSS in aviation not carried out in the framework of the SESAR JU, but while ensuring coherence with the SESAR Concept of Operations.
- b. Support the development and implementation of a R&D programme for GNSS in aviation in coherence with the activities conducted on ATM modernisation in the context of the SESAR JU.
- c. Technical support to define R&D topics in H2020 - Space. This support will also ensure consistency and complementarity with the R&D activities conducted in the domain of aviation in the frame of H2020-Transport.
- d. Technical advice in the review of R&D projects

(6) User segment: support planning and development of activities aiming at the inclusion of EGNOS and Galileo in future GNSS user terminals for aviation according to:

- a. The introduction of PBN and the CNS perspective (use for ADS-B) of GNSS.
- b. The increased robustness required to mitigate GNSS vulnerabilities.
- c. The standardisation and Interoperability aspects.
- d. The CNS regulatory roadmap and the coordination put in place with EASA for development of regulatory material to enable use of European GNSS elements (certification, guidance material and installation)
- e. Innovative SW receivers' concepts accommodating new GNSS signals while keeping airworthiness requirements from EASA (link with R&D in SESAR 2).

This activity shall take into account, notably, the multi-receivers developments and validations performed in the framework of the SESAR programme. It should be noted that the outcome of the planning activity will be validated by the GSA with EC and SESAR JU.

(7) GNSS performance monitoring for aspects specific to aviation. This task includes

- a. Support in the evolution of EDCN and European GNSS Monitoring stations
- b. Support the analysis of a potential global monitoring network/s developed under the aegis of the UN ICG.
- c. Support in order to implement data legal recording capability.
- d. Upgrade and re-validation of the Pegasus Software tool if need be
- e. Analysis of data and of its R&D interest (ionosphere, space weather and GBAS multiconstellation)

- (8) Support international activities on GNSS in the aviation domain as explained below:
- a. Support in preparing the EGNOS extension beyond ECAC (institutional and regulatory aspects)
 - b. Support the EGNOS extension beyond ECAC (operational introduction)
 - c. Ad-hoc support for position coordination on GNSS activities in GNSS-related international bodies

Award criteria for the subsequent specific grant:

Award criteria:

- Understanding of the tasks, completeness and credibility of the proposed approach
- Background and experience of the team proposed and adequacy of facilities
- Cost-effectiveness

Indicative timetable and indicative amount of the specific grant directly awarded under a framework partnership:

- Estimated Amount: € 2.300.000
- Estimated duration of the activity is 36 months.

	Stages	Date and time or indicative period
a)	Invitation to submit the proposal	May 2015
b)	Deadline for submitting the proposal	July 2015
c)	Evaluation period	July-August 2015
d)	Information to beneficiary on the outcome of the evaluation	September-October 2015
f)	Signature of Specific Grant Agreement	November 2015

Maximum possible rate of co-financing of the eligible costs: 100%

1.2 EGNOS Service Performance Monitoring Support from Member States (EEX.0028)

LEGAL BASIS: Regulation (EU) No 1285/2013

One specific grant to be awarded under the Framework Partnership

BUDGET LINE:

BO3920 - EGNOS Exploitation

BACKGROUND : GSA has launched in 2014 a call for proposals open to national agencies and institutions or bodies of EU Member States, Switzerland and Norway to support technical activities (in line with article 30 of the GNSS Regulation 1285/2013) for the management of the EGNOS in-service performance.

The objective is to guarantee independence of analyses and investigations, to establish relationship with partners which are not profit-oriented organisations but provide access to a wide range of key expertise and to benefit and contribute to long term key expertise continuity and competences for the EGNOS programme). Additionally, this activity takes benefit from the past public investments and from the existing capacities available at Member States level.

The GSA intends to sign in 1Q2015 a Framework Partnership Agreement (FPA) with the selected applicant for the period 2014-2020 and the GSA foresees to award a first Grant upon signature of the FPA, corresponding to work to be done in 2015. The indicative overall budget covering the grants to be awarded for the entire duration of the FPA is estimated at €4.000.000.

In 2015, a second Specific Grant based on the established Framework Partnership Agreement is planned to be awarded.

Priorities, objectives pursued and expected results:

The second Grant shall, in accordance with the FPA's Strategic Plan, address:

- (1) Monitoring of EGNOS competitors: to monitor GNSS/SBAS infrastructure in order provide information on other SBASs performance, underperformance and operational conditions.
- (2) Use of an autonomous grid of stations : to monitor the EGNOS In-Service performance (SiS Availability, Timing and Position Accuracy, Integrity, Continuity, Availability and Coverage) separated from the EGNOS Network.
- (3) Ad hoc investigation and return of experience: to investigate the decomposition between the performance' contributors (infrastructure, signal, propagation, receivers) in order to derive lessons learnt for future optimisation of EGNOS signals and messages as well as for SBAS standards elaboration.

Description of the activities to be funded under the 2015 specific grant:

The activities funded within the second specific grant shall fit within the high-level activities description below:

- (1) Monitoring of EGNOS competitors: monitoring GNSS/SBAS infrastructure in order provide information on other SBASs performance, underperformance and operational conditions;
- (2) Accessibility of data, accessible from an autonomous grid of stations, to be processed with ad-hoc tool for the monitoring the EGNOS In-Service performance (as described in section 2): the grid of stations will be separated from the EGNOS Network;
- (3) Ad hoc investigation and return of experience: investigation of the decomposition between the performance' contributors (infrastructure, signal, propagation, receivers) in order to derive lessons learnt for future optimisation of EGNOS signals and messages as well as for SBAS standards elaboration;
- (4) For the SPMS Coordinator¹: Coordination of SPMS activities:
 - a. Interface with the GSA for all matters related to the grant activities, the submission and publication of the deliverables, etc.;
 - b. Administrative and technical supervision of the fulfillment by the partners of their respective roles and responsibilities;
- (5) Actions aiming at improving the knowledge and competences of stakeholders as well as cooperation mechanisms, exchanges of good practices.

Award criteria for the specific grant:

Award criteria:

- Understanding of the tasks, completeness and credibility of the proposed approach
- Background and experience of the team proposed and adequacy of facilities
- Cost-effectiveness

¹ The entity appointed by the other applicants as responsible for submitting the proposal under this Call on their behalf is to be considered SPMS Coordinator under the Framework Partnership Agreement and Specific Grant Agreements. The SPMS Coordinator is the partner responsible for the overall planning of the work of the SPMS partners and for managing the Framework Partnership and specific Grants.

Indicative timetable of the call for proposals and indicative amount of the specific grant:

Indicative amount: € 1.500.000

Indicative duration: 24 months

	Stages	Date and time or indicative period
a)	Invitation to submit a proposal	May 2015
b)	Deadline for submitting applications	July 2015
c)	Evaluation period	July-August 2015
d)	Information to beneficiary(ies) on the outcome of the evaluation	September-October 2015
f)	Signature of Specific Grant Agreement	November 2015

Maximum possible rate of co-financing of the eligible costs: 70%

1.3 Acceleration of EGNOS adoption in the field of civil aviation (EEX.0030)

LEGAL BASIS Regulation (EU) No 1285/2013

Call for proposals

BUDGET LINE:

BO3920 - EGNOS Exploitation

BACKGROUND: The European Global Navigation Satellite System (EGNSS), operated under civilian control, encompasses satellite radio-navigation system established under the Galileo programme and European Geostationary Overlay System (EGNOS). The EGNOS Safety of Life service was certified for use in aviation in March 2011 and today all European Air Navigation Service Providers (ANSPs) are enabled to implement EGNOS based approach procedures.

To meet the overall objectives of the EGNOS programme, the uptake in civil aviation is vital. This call should result in the implementation of EGNOS based operations, increasing safety and reducing distortions for the benefit of European aerodromes and airspace users.

Priorities of the year, objectives pursued and expected results:

Operational implementation of EGNOS in aviation is a strategic goal to ensure the success of the programme. In this context, the objective of this activity is to foster EGNOS adoption in the European aviation, enabling on the one hand, users to equip their aircraft/rotorcraft fleet with GPS/SBAS enabled avionics and, on the other hand, Air Navigation Service Providers and airports/heliports to publish APV SBAS (LPV), including PinS procedures and development of low level IFR routes in Europe.

The activity will encourage implementation in regional, business (corporate) aviation, general aviation (training, emergency services) and rotorcraft, considered the main aviation market segments for EGNOS and those maximising public benefits. Commercial operators and OEMs interested in benefitting from EGNOS are also encouraged to apply to the call.

The result of this activity will be a wide scale operational implementation of the EGNOS based approaches throughout European airports and airspace users.

Description of the activities to be funded under the call for proposals:

Proposals submitted to the call should cover one or more of the activities described below:

- The design, development and implementation of EGNOS LPV approach procedures, PinS and low level IFR routes at different European airports/heliports/routes and publication in the national AIP.
- The approval of Air Operator Certificate for LPV operations of aircraft already equipped with SBAS capabilities.
- The installation of GPS/EGNOS enabled avionics and granting of airworthiness certification for RNP APCH procedures down to LPV minima, including PinS.
- Development of retrofit and forwardfit solutions including LPV capabilities.

- Implementation of approach procedures benefitting from the LPV 200 capabilities provided by EGNOS in the near future.
- Implementation of enablers or catalysts for EGNOS adoption, such as, but not limited to simulators, validation tool or training material.

Eligibility, selection and award criteria:

- Eligibility and non-exclusion criteria
- The proposal is submitted by:
 - o legal entities established in an EU Member State or Norway or Switzerland;
 - o for implementation of LPV procedures : entities representing Air Navigation Service Providers ANSPs, Aerodromes/heliports/helipads.
 - o for avionics upgrade or AOC approval : entities representing airspace users;
- Applicants shall not be in one of the situations referred to in Articles 106(1) and Articles 107, 108 and 109 of the EU Financial regulation.
- The applicants must fulfil the following selection criteria:
- The financial capacity of the applicant to perform the proposed activities
- The operational (technical and management) capacity of the applicant must demonstrate how to perform/complete the operation of the proposed activities and also demonstrate their capacity to manage the scale of activity corresponding to the size of the project.
- Award criteria:
- Relevance of the proposal to the objectives of the call and credibility of the proposed approach
- Impact in terms of economic and public benefits derived from the proposal
- Coherence and effectiveness of the work plan, including appropriateness of the allocation of tasks and resources

Indicative timetable and indicative amount of the call for proposals:

- Indicative amount: € 6,000,000

	Stages	Date and time or indicative period
a)	Publication of the call	May 2015
b)	Deadline for submitting applications	15 September 2015
c)	Evaluation period	September – October 2015
d)	Information to applicants on the outcome of the evaluation	November 2015
e)	Signature of the Grant Agreements	November – December 2015

Maximum possible rate of co-financing of the eligible total costs: 60%