

## 8 Galileo Exploitation 2020 Grant Plan

The 2020 Grant plan with detailed description will be published on GSA website upon EC review and approval.

The list of Galileo grants currently foreseen in 2020 is reported below.

### 8.1 GRC Support from Member States (GEX.0102)

#### LEGAL BASIS

Regulation (EU) No 1285/2013 of the European Parliament and of the Council of 11 December 2013 on the implementation and exploitation of European satellite navigation systems and repealing Council Regulation (EC) No 876/2002 and Regulation (EC) No 683/2008 of the European Parliament and of the Council and Delegation Agreement between the European Union, represented by the European Commission and the European GNSS Agency on the Exploitation Phase of the Galileo Programme signed on 2 October 2014.

2<sup>nd</sup> Specific Grant – 12 months extension

#### BUDGET LINE:

GEX.0102

#### BACKGROUND:

The primary mission of the Galileo Reference Centre (hereafter “GRC”) is to perform independent monitoring of the Galileo Open Service (hereinafter “OS”) and Commercial Services (hereinafter “CS”) data dissemination performance and report it to the relevant stakeholders. It provides the European GNSS Agency (hereinafter “GSA”), as the service provider, with an independent means of evaluating the quality of the signals in space and the performance of the Galileo Service Operator (hereinafter ‘GSOp’). It is fully independent of the system and the GSOp with respect to both the technical solution (hardware/software, reference products, etc.) and operations.

The GRC’s mission includes the following activities:

- Perform independent monitoring and assessment of OS service provision;
- Perform independent monitoring and assessment of CS data dissemination;
- Integrate data and products from European Union Member States (hereinafter “MS”), as well as third countries such as Norway and Switzerland participating in the Galileo programme (hereinafter jointly with “EU MS” referred to as “MS”), with core GRC products and utilise their relevant expertise;
- Report service performance to the programme;

- Provide service performance expertise to the Programme, including (but not limited to) supporting the Galileo Service Centre (hereinafter “GSC”) on performance-related user requests;
- Support investigations of service performance and service degradations;
- Archive relevant service performance data over the nominal operational lifetime of the system; and
- When feasible, assess the compatibility and interoperability between Galileo and other GNSS.

The GRC comprises a core facility, located in Noordwijk, the Netherlands, and integrates data and products from cooperating entities from MS. Although the GRC core will have stand-alone capability to fulfil the main mission with a minimum required level of performance, achieving full performance and capabilities relies on integration of the MS contributions. These may support everyday operations (e.g. data provided by MS from additional networks, MS generated reference and monitoring products) and specific campaigns (e.g. utilisation of large gain antennas operated by MS, expertise available at MS level). To formalize such contribution and support the GSA established two long-term cooperation agreements with the selected beneficiaries in the form of Framework Partnership Agreements (hereafter “FPA”); the activities of the FPA(s) are implemented through Specific Grants (hereafter “SG”). More specifically, in 2017 the Agency signed a Framework Partnership Agreement (FPA) with a Consortium coordinated by CNES for a period of 4 (four) years to establish cooperation between itself and the partners. The 2<sup>st</sup> SG was signed in 2019 for a period of 12 months to initiate the activities defined for such cooperation. Considering the need to ensure continuity of the above activities after this date, the Agency plans to extend this grant for 12 months during 2020.

#### Objectives pursued and foreseen results:

To provide access to a range of facilities and expertise at MS’ level for Galileo service performance monitoring, taking into account that:

- (1) GRC stand-alone capability is essential: contributions from other entities should be utilised to improve performance, but the GRC should be capable of carrying out its core tasks without these additional inputs;
- (2) supporting activities must be independent from the Galileo system;
- (3) GRC should benefit from but also contribute to maintain the long term competences and expertise at the level of MS;
- (4) Interfaces are defined by the GRC, MS’ contributions must comply with these.

#### Description of the activities to be funded:

The anticipated support activities are:

- (1) Data Provision from the Worldwide Network of Sensor Stations: data collected with networks of reference stations should continuously be provided to the GRC;
- (2) Reference Products (precise orbits and clocks for the monitored satellites) Computation: reference products shall be generated.
- (3) Key Performance Indicators (KPIs) Generation: Products such as KPIs, reference orbits and clocks, ionospheric products generated by the MS should be provided to the GRC, according to agreements on a case-by-case basis;
- (4) Ionospheric monitoring: ionospheric reference products shall be generated.
- (5) Campaign-based GNSS performance investigations: Campaign-based GNSS performance investigations using other than the above assets available in MS;
- (6) Consultation and expertise support: Consultation on the definition of GRC products, GRC and MS product comparison, expertise, etc.

**Indicative amount of the grant(s):**

Allocated budget: EUR 1,000,000.

## 8.2 JTA-2 first phase (GEX.0403)

### LEGAL BASIS:

Regulation (EU) No 1285/2013 of the European Parliament and of the Council of 11 December 2013 on the implementation and exploitation of European satellite navigation systems and repealing Council Regulation (EC) No 876/2002 and Regulation (EC) No 683/2008 of the European Parliament and of the Council.

Decision No 1104/2011/EU of the European Parliament and the Council of 25 October 2011 on the rules for access to the public regulated service applies and will constrain the participation to these activities.

Call for Proposals

### BUDGET LINE:

GEX.0403

### BACKGROUND:

- The objective of Public Regulated Service (PRS) Pilot Projects is the end to end validation of PRS service. This includes in particular the performance of PRS Tests and operations involving Member States.
- The programme will support PRS Joint Test Activities carried out by multiple Member States (having designated a Competent PRS authority).
- Decision No 1104/2011/EU of the European Parliament and the Council of 25 October 2011 on the rules for access to the public regulated service applies and will constrain the participation to these activities.
- The 1<sup>st</sup> PRS JTA MS grant was published in 2016 and will be concluded in the end of 2020.
- The 2<sup>nd</sup> PRS JTA MS grant is aiming:
  - to continue involvement already participating and new MSs and testing of user segment development (2<sup>nd</sup> phase) in line with PRS roadmap (P3RS2, P3RSE, GRON, POCP-IS, PRS Service milestone declaration),
  - to involve wider range of MSs decision makers and critical users,
  - to support validation of the PRS System and Service, by providing operational User view.

### Objectives pursued and foreseen results:

Through this 2<sup>nd</sup> PRS JTA MS call for proposals the GSA would like to establish a framework involving the relevant Member States authorities (notably the Competent PRS Authorities – CPAs and national decision makers in the area of future use of PRS), and GSA will continue to provide a tool to support the

implementation of the PRS Pilot Project tests for the achievement of the PRS Pilot Project objectives over two phases.

#### **Main Objectives pursued**

- (1) Preparation and implementation of Joint Tests and demonstrations with the aim of contribution to the achievement of the objectives of the Pilot Projects (like proof of PRS management);
- (2) By involving PRS user communities, provide lessons learnt and feedback to the Programme, the CPAs and PRS PoC and potential PRS participants;
- (3) Focus on PRS user awareness, update of CPA end-to-end operations developed with support of the first JTA and preparation to FOC.
- (4) Involvement of new MSs with recently established CPAs.
- (5) Support verification and validation PRS system and service declarations for each of milestones.

#### **Foreseen results**

- (1) Execution of joint test activities performed by PRS participants;
- (2) Reports and dissemination of the test results to the relevant fora;
- (3) Provision of test data/results for use by the Galileo Programme;
- (4) A final report summarising the work implemented and containing as a minimum the main results achievements and lessons learnt as well as and recommendations for actions to be implemented.

#### **Description of the activities to be funded:**

- (1) Evaluate and assess PRS management in the Galileo PRS in a representative (e.g. by using real Galileo signals) and suitable testing environment;
- (2) Assess and demonstrate the PRS performance by several PRS participants and/or stimulate cross fertilisation among PRS participants (involving new potential actors in PRS);
- (3) Report and/or disseminate and/or prepare awareness session to the relevant fora and provision of data related to the performed tests to the Programme;
- (4) Interface with the GSA for all matters related to the grant activities, the submission, approval and dissemination of the deliverables as well as administrative and technical supervision of the fulfilment by the beneficiaries of their respective roles and responsibilities;
- (5) Interface with the GSA for all matters related to the PRS service verification and validation.  
Any other action aiming at improving the knowledge of PRS stakeholders (CPAs, governments, user communities etc.) as well as cooperation mechanisms, exchanges of good practices between them.

#### **Indicative amount of the grant(s):**

Allocated budget: EUR 1,200,000.

## 9 Galileo Exploitation 2019 Grant Plan update (for information only)

In this section the update of the 2019 grant plan is included for information only. Approval was requested through dedicated letter (GSA-LEG-LEG-LET-A03049\_GEX.0420), **no further action is currently required.**

### 9.1 Capacity Building Project, contribution of UNOOSA (GEX.0420)

#### LEGAL BASIS

Regulation (EU) No 1285/2013 of the European Parliament and of the Council of 11 December 2013 on the implementation and exploitation of European satellite navigation systems and repealing Council Regulation (EC) No 876/2002 and Regulation (EC) No 683/2008 of the European Parliament and of the Council and Delegation Agreement between the European Union, represented by the European Commission and the European GNSS Agency on the Exploitation Phase of the Galileo Programme signed on 2 October 2014.

The direct grant tool is proposed to cover the contribution of UNOOSA in the Capacity Building project to be executed by the GSA in 2020.

UNOOSA possess numerous and unique features that set it apart from other organizations:

- UNOOSA is the only intergovernmental body dedicated exclusively to space matters in the UN system, the Committee on the Peaceful Uses of Outer Space (COPUOS). This unique responsibility places UNOOSA at the center of space affairs for all the space-related applications at the UN level, providing a privileged view on the interests and needs of all 193 UN Member States.
- UNOOSA is leading the International Committee on GNSS (ICG), facilitating the global dialogue on compatibility, interoperability, and transparency amongst the global providers of GNSS. As the lead of the ICG Working Group C on Information Dissemination and Capacity Building, it works on global GNSS education development and capacity building of developing countries in using GNSS technology for sustainable development and has a unique position to present activities to participants in this WG.
- UNOOSA developed and is responsible for the education curriculum on GNSS used by the Regional Centers Affiliated to the United Nations and located in India and China for Asia and the Pacific, in Morocco and Nigeria for Africa, in Brazil and Mexico for Latin America and the Caribbean and in Jordan for West Asia.

Within the space downstream no other organization could be identified that would represent a similar network of global contacts and have the tools to shape global capacity building in GNSS.

#### BUDGET LINE:

GEX.0420

#### BACKGROUND:

In line with the mission statement, the GSA is engaging market stakeholders to develop innovative and effective applications, value-added services and user technology that promote the achievement of full European GNSS adoption. In this context the capacity building activities address the shortage of skilled workforce that is able to implement the technologies based on Galileo and EGNOS and support to expand the supply side of Galileo and EGNOS based solutions.

**Objectives pursued and foreseen results:**

The objective of the Capacity Building project is to select, organise and present educational material in various forms - to be launched on the online training platform (developed outside of the scope of this grant) - addressing the application areas of European GNSS. The capacity building actions will target professionals and students as well as other interested parties engaged in use of space technologies, with major focus on Galileo and EGNOS, thus fostering the development of EGNSS applications and solutions on global scale.

**Description of the activities to be funded:**

The activities to be funded under this direct grant shall encompass:

- Support in the selection of the priority EGNSS application and technological areas that would be the basis for the development of the educational content.
- Review of educational material to be launched on the online training platform (developed outside of the scope of this grant).
- Participation in events to present and promote the above mentioned educational material.
- Incorporation of the educational material in the syllabus of a subset of the United Nations-affiliated Regional Centres for Space Science and Technology Education and promotion of this material for its use by Universities worldwide.
- Presentation of the educational material in the working group C of ICG and in related capacity-building activities organized by UNOOSA to be included in the official GNSS curriculum promoted by ICG.

**Indicative amount of the call for proposal:**

Allocated budget: EUR 100,000.