

## **Galileo Exploitation**

***Grant Plan 2015 v1.2***

**V1.2**

**Reference  
212774**

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## 1.1 2015 Grant Plan

The 2015 Galileo Exploitation Grant Plan as approved by the Commission is presented here after in two sections, one dedicated to Fundamental Elements and another dedicated to Member States and other EU Institutions support.

### 1.1.1 Fundamental Elements Grants

The Fundamental Elements annual Grant Plan foresees five individual projects to be implemented through grants. The details for each initiative, including the objectives, the foreseen results, the essential eligibility, selection and award criteria, the maximum possible rate of co-financing and the indicative amount of the calls for proposals are specified below as well as the priorities of the Grant Plan for 2015.

The Grant Plan for 2015 pertaining to Fundamental Elements has following priorities for 2015 to be implemented through the various activities:

- Development of non-payment and non-regulatory based applications for use by the automotive sector, including car/truck makers and tier 1 suppliers as target market.
- Development of payment and regulatory based applications for use by the automotive sector, including car/truck makers and tier 1 suppliers as target market.
- Development and test of Dual Frequency (E1/E5) automotive / M2M / consumer receivers that make use of advanced hybridisation techniques, e.g. signal of opportunities, cellular network, etc.
- Development and test of High Precision multi (incl. triple) frequency multiconstellation receivers for professional applications
- Development an Advanced RAIM (Receiver Autonomous Integrity Monitoring) prototype, following the lines as defined by the ARAIM US-EU ARAIM Technical Sub-Group (TSG). The developed prototype may be used in a demonstration campaign

### 1.1.1.1 Safety critical E-GNSS engine

#### 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.

Call for proposals

#### BUDGET LINE:

GEX.0029

#### BACKGROUND:

- Connected vehicles and autonomous / automatic driving vehicles is the most relevant trend in the automotive sector, with giants such as Google entering the game in addition to the traditional actors, such as car makers and their suppliers.
- The need to provide accurate and reliable positioning information is clearly emerging, and the current approach is to use different sources of information, including still expensive radar based sensors, infrastructures based sensors, differential techniques, etc.
- As previously proven by recent FP7 projects (e.g. COVEL, GAIN, TAXISAT and GENEVA) European GNSS and its differentiators (e.g. the signal characteristics, services such as authentication, integrity service, etc.) can be essential for accurate positioning.
- However, it is necessary to design a dedicated reliable and accurate engine, instead of simply adapting one from already existing, non-automotive specific consumer applications.
- This project aims to answer to this emerging demand, building on European GNSS differentiators.
- The project will build on the on-going standardisation work at European Telecommunications Standard Institute (ETSI) and European Committee for Standardisation (CEN): for example, the European Commission funded project SAGITER that proposes the “horizontal standardisation” concept which is represented by the Minimum Performance Standard (MPS): a set of clear minimum performance values defined for a group of applications.

#### Objectives pursued and foreseen results:

##### Objectives of the project:

- The first and main objective of the project is to support the development of a safety critical E-GNSS based engine, to be embedded on vehicles and to be potentially connected with the (Controller Area Network) CAN bus and other sensors using hybridisation techniques, i.e. interaction and with non-GNSS based positioning technologies.

- The engine must be adapted to serve different safety critical applications, such as Advanced Driver Assistance Systems, anti-collision based on V2X, autonomous vehicles, etc.
- Data fusion with vehicle sensors and communication devices shall be included.
- The second objective is to valorise the E-GNSS differentiators in the emerging segment of autonomous and connected/automated vehicles. This may include the feature of the signal on different frequencies, the authentication, especially on E1 frequency band, and assess the potential use of PPP ( e.g. from the Galileo commercial service).
- The third objective of the project is to complete the ongoing standardisation process, where required, and to initiate a certification approach.
- The engine shall interface with the standard data exchange system on board the vehicle, e.g. developing an interface with the CAN-bus.
- The engine's software and algorithm shall be portable and scalable.

#### Foreseen results

- The foreseen results of the project are technical specifications for the GNSS use in Safety Critical multi-applications in road traffic, the prototype and the demonstration for the E-GNSS engine for Safety Critical multi-applications in road traffic, agreements on standard interfaces with other GNSS engines (liability and payment) to allow easy building of a multiple-system platform, if required by the market, as well as a pre-commercial product for such engine.

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

The call for proposal is intended to fund one project.

The activities to be funded under this call for proposal shall be the development of highly accurate and highly reliable E-GNSS engine for Safety Critical multi-applications in road traffic, supporting applications that not only make use of GNSS position but that are critical for the safety of the drivers and other passengers, such as Advanced Driver Assistance Systems, anti-collision based on V2X, autonomous vehicles following the above mentioned objectives, leading to the foreseen results.

#### Essential eligibility, selection and award criteria:

##### 1. Eligibility and non-exclusion criteria

- The proposal may be submitted by entities fulfilling all the criteria below:
  - being any legal entity with the technical and financial capability to perform the proposed activities;
  - the applicants are from the EU 28 member states, third countries: Switzerland or Norway.
  - 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.

##### 2. The applicants must fulfil the following selection criteria:

- The financial capacity of the applicant to perform the proposed activities

- The technical capacity of the applicant to perform the proposed activities
3. Main award criteria:
- Excellence: relevance of the proposal to the objectives of the call, credibility of the proposed approach, and innovation of the solutions proposed;
  - Impact in terms of economic and public benefits derived from the proposal including but not limited to a coherent business plan for the exploitation of the results of the grant;
  - Credible and effective dissemination plan for the results in the best interest of the Union linked to a minimum passing requirement;
  - Quality of the implementation: 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:**

- Allocated budget: €4,500,000

	<b>Stages</b>	<b>Date and time or indicative period</b>
a)	Publication of the call [T0]	April 2015
b)	Deadline for submitting applications [T0+ 3 months]	July 2015
c)	Evaluation period [T0+ 6 months]	October 2015
d)	Information to applicants on the outcome of the evaluation	October 2015
e)	Signature of the Grant Agreements [T0+ 8 months]	December 2015

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

Up to 60-70% funding of the eligible total costs.

### 1.1.1.2 Liability and payment critical E-GNSS engine

#### 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.

Call for proposals

#### BUDGET LINE:

GEX.0030

#### BACKGROUND:

This call is covering two projects to be awarded each with a maximum indicative budget of 3,000,000€.

Each of the projects should focus mainly on either Liability critical or Payment critical, but it should address the other one as well.

- In contrast to other GNSS systems, Galileo is a civil system under civil control, intended to provide direct support to users, and intended to be guarantee a user oriented service. In addition, it is intended to include some important differentiators, such as the robustness of the signal, the authentication, and in the future the integrity service via EGNOS. The project will leverage these differentiators to build a competitive engine that can serve the new range of payment and liability critical applications.
- Today, GNSS is used in some emerging payment applications, such as road charging.
- The potential of using the accurate location in payment critical applications is much higher than the currently emerging applications using GNSS as road charging, and includes examples as pay-as-you-drive insurances, payment and monitoring of limited traffic areas, new concepts such as “mobility as a service”, up to a new mobility model no more based on the vehicle ownership but on the actual use.
- Other recent developments include a certain number of liability critical and/or regulated applications : an enhanced digital tachograph including a GNSS function will be introduced by into legislation from 2018, improving the means of enforcing the legislation on time restrictions for truck driving in Europe. Another example is accident reconstruction and monitoring of special cargo transport. This is complemented by a number of emerging ITS applications fostered by the EU directive, such as emergency call, secure parking, traffic information system, etc.

This project aims to answer this new demand and to create European market leaders that can propose on the market an E-GNSS engine that is not a simple commodity but a real liability critical tool.

### Objectives pursued and foreseen results:

This call is covering two projects to be awarded each with a maximum indicative budget of 3,000,000€.

Each of the projects should focus mainly on either Liability critical or Payment critical, but it should address the other one as well.

- The first and main objective of the project is to support the development of a liability and payment critical GNSS-based engine for vehicles (personal, cargo, etc) and for the two scopes: “payment based” and “regulation based”.
- The second objective is to valorise the E-GNSS differentiators, especially the ones that may contribute to a more robust and acceptable liability critical positioning, such as authentication.
- The third objective of the project is to investigate the necessary approach to achieve a legal value of the position and any certification information and type approval necessary to obtain this objective.
- The engine must be flexible to be embedded in dedicated on board units, on the vehicle or in consumer devices, supporting applications for which a high level of liability risk ensues in case of a malfunction or non-availability of GNSS signals, for example: speed control and enforcement, digital tachograph, accident reconstruction, dangerous and other sensitive cargos tracing, etc.
- The engine must be designed to fulfil existing regulated applications and upcoming one, referring also to on-going ETSI and CEN standardisation categories.
- The engine must be able to process regulatory relevant use of GNSS positioning data in several regulated road applications, and the project should include an end-to-end demonstration. Standard interfaces must be agreed with other GNSS engines (safety and payment) so that a multiple platform could be easily built, if required by the market. The project should work in synergy with Open Service authentication users’ terminal project, and the engine should be prepared to host chipsets enabled for Open Service authentication.

#### Foreseen results

- The results of the project are technical specifications, the prototype and the demonstration for the E-GNSS engine on payment and regulatory based applications, as well as a pre-commercial product of such an engine.

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

The call for proposals is intended to fund 2 projects.

The activities to be funded under this call for proposal shall encompass:

- the development of a robust E-GNSS engine for Liability Critical multi-applications in Road in line with the above listed objectives.
- the development of standardisations and related requirements for payment critical applications, such as road and congestion charging, pay-as-you-drive products and new "mobility as a service" concepts in which EGNSS is used as a main information source to evolve from ownership to usage based vehicle applications.



**Essential eligibility, selection and award criteria:**

1. Eligibility and non-exclusion criteria
  - The proposal may be submitted by entities fulfilling all the criteria below:
    - o being any legal entity with the technical and financial capability to perform the proposed activities;
    - o the applicants are from the EU 28 member states, Switzerland or Norway.
    - o 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.
  
2. The applicants must fulfil the following selection criteria:
  - The financial capacity of the applicant to perform the proposed activities
  - The technical capacity of the applicant to perform the proposed activities
  
3. Main award criteria:
  - Excellence: relevance of the proposal to the objectives of the call, credibility of the proposed approach, and innovation of the solutions proposed;
  - Impact in terms of economic and public benefits derived from the proposal including but not limited to a coherent business plan for the exploitation of the results of the grant;
  - Credible and effective dissemination plan for the results in the best interest of the Union linked to a minimum passing requirement;
  - Quality of the implementation: 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:**

- Allocated budget in total for the 2 projects: € 6,000,000

	<b>Stages</b>	<b>Date and indicative period</b>
a)	Publication of the call [T0]	April 2015
b)	Deadline for submitting applications [T0+ 3 months]	July 2015
c)	Evaluation period [T0+ 6 months]	October 2015
d)	Information to applicants on the outcome of the evaluation	October 2015
e)	Grant Agreements Signature [T0+ 8 mths]	December 2015

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

Up to 60-70% funding of the eligible total costs.

### 1.1.1.3 Dual Frequency Automotive / M2M / consumer receiver including innovative hybridisation techniques

#### 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.

Call for proposals

#### BUDGET LINE:

GEX.0033

#### BACKGROUND:

- In GNSS chipset market, just as in chipset silicon industry, the market is dominated by a few suppliers only and GNSS chipsets are becoming a commodity even in market segments where performant GNSS applications are needed, such as automotive industry, Machine 2 Machine (M2M). Currently, the tendency is to simply upgrade consumer single frequency chipset designed for the smartphones to accommodate highly specialised applications.
- The only few European GNSS chipset manufacturers that still have a leading position in the mass market act mainly in the automotive industry and they are trying to enter into emerging M2M applications (e.g. "internet of things" related to everyday household appliances but also to highly specialised manufacturing plants and processes).
- It is not possible to create new European players in consumer market because the competition is more focused on other areas related to the silicon chipset). However, it is still possible to support the existing players to innovate more/better chip sets and to increase their competitiveness, possibly expanding from automotive industry to M2M and maybe in the future to consumer market.
- This project aims to support this process and, at the same time, to foster the exploitation of Galileo features such as dual frequency on the open service, the pilot tone, etc.
- In addition, the project encourages the introduction of advanced techniques, such as sensor fusion, cooperative positioning, advanced network fusion techniques and signal of opportunities approach.

### Objectives pursued and foreseen results:

The call for proposals is intended to fund 1 project.

#### Objectives of the project:

- The first and main objective of the project is to support the development of dual/multi frequency receiver for automotive, M2M and other consumer segments including innovative techniques (see below in description of activities).
- The second objective is to valorise the E-GNSS differentiators, including smart approaches to the dual/multiple frequency and multiconstellation, the modulation and intrinsic feature of the Galileo signal, the optimisation of the receiver to give more value to Galileo in multi-constellation approach.

The third objective of the project is to favour European market leaders in the field of mass market receiver, despite some of the limitations explained in the background.

#### Foreseen results:

- The foreseen results of the project are prototype receivers that will have to integrate innovative techniques (e.g., positioning Based on Signals of Opportunity, advanced hybridisation with cellular networks and other wireless sources, cooperative positioning, smart approaches to multi-frequency and multiconstellation) and to be designed and tested in significant application scenarios.

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

The call for proposals is intended to fund 1 project with the following activities:

- The design and development of the dual/multi frequency receiver as described above including the testing of the receiver.
- The development will have to include the following techniques:
  - positioning Based on Signals of Opportunity;
  - advanced hybridisation with cellular networks and other wireless sources;
  - cooperative positioning;
  - smart approaches to multi-frequency and multiconstellation.

### Essential eligibility, selection and award criteria:

#### 1. Eligibility and non-exclusion criteria

- The proposal may be submitted by entities fulfilling all the criteria below:
  - being any legal entity with the technical and financial capability to perform the proposed activities;
  - the applicants are from the EU 28 member states, Switzerland or Norway.
  - 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.

#### 2. The applicants must fulfil the following selection criteria:

- The financial capacity of the applicant to perform the proposed activities
- The technical capacity of the applicant to perform the proposed activities

#### 3. Main award criteria:

- Excellence: relevance of the proposal to the objectives of the call, credibility of the proposed approach, and innovation of the solutions proposed;

- Impact in terms of economic and public benefits derived from the proposal including but not limited to a coherent business plan for the exploitation of the results of the grant;
- Credible and effective dissemination plan for the results in the best interest of the Union linked to a minimum passing requirement;
- Quality of the implementation: 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:**

- Allocated budget: € 5,500,000

	<b>Stages</b>	<b>Date and indicative period</b>
a)	Publication of the call [T0]	April 2015
b)	Deadline for submitting applications [T0+ 3 months]	July 2015
c)	Evaluation period [T0+ 6 months]	October 2015
d)	Information to applicants on the outcome of the evaluation	November 2015
e)	Signature of the Grant Agreements [T0+ 8 months]	December 2015

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

Up to 60-70% funding of the eligible total costs.

### 1.1.1.4 High Precision multi (incl. triple) frequency multiconstellation receivers for professional applications

#### 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.

Call for proposals

#### BUDGET LINE:

GEX.0032

#### BACKGROUND:

This grant will be published in december 2015 and granted in 2016.

The objectives and activities will be clarified with EC in the course of the year 2015.

#### Objectives pursued and foreseen results:

Objectives of the 2 projects to be granted will be clarified with EC in the course of 2015.

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

The call for proposals is intended to fund 2 projects to be clarified with EC in 2015.

#### Essential eligibility, selection and award criteria:

##### 4. Eligibility and non-exclusion criteria

- The proposal may be submitted by entities fulfilling all the criteria below:
  - o being any legal entity with the technical and financial capability to perform the proposed activities;
  - o the applicants are from the EU 28 member states, Switzerland or Norway.
  - o 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.

##### 5. The applicants must fulfil the following selection criteria:

- The financial capacity of the applicant to perform the proposed activities
- The technical capacity of the applicant to perform the proposed activities

**6. Main award criteria:**

- Excellence: relevance of the proposal to the objectives of the call, credibility of the proposed approach, and innovation of the solutions proposed;
- Impact in terms of economic and public benefits derived from the proposal including but not limited to a coherent business plan for the exploitation of the results of the grant;
- Credible and effective dissemination plan for the results in the best interest of the Union linked to a minimum passing requirement;
- Quality of the implementation: 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:**

- Allocated budget: € 7,300,000 for the 2 projects

	<b>Stages</b>	<b>Date and indicative period</b>
a)	Publication of the call [T0]	December 2015
b)	Applications submission deadline [T0+3 mths]	March 2016
c)	Evaluation period [T0+ 6 months]	June 2016
d)	Applicants' information on the outcome	July 2016
e)	Grant Agreements Signature [T0+ 8 mths]	August 2016

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

Up to 60-70% funding of the eligible total costs.

### 1.1.1.5 Advanced RAIM Multiconstellation Receiver

#### 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.

Call for proposals

#### BUDGET LINE:

GEX.0025

#### BACKGROUND:

- Integrity is one of the essential qualities of service to be provided by the Galileo safety of life service. Advanced (A) RAIM (Receiver Autonomous Integrity Monitoring) is a possible concept to which much effort is being devoted with the intention to provide a global integrity service based on multiple satellite constellations.
- In this respect, cooperation with the United States of America was formally established through the creation of a specific EU-US ARAIM Technical Sub-Group (TSG) in Working Group C of the EU-US cooperation agreement. The ARAIM TSG has been developing the concept with a focus on Civil Aviation, including possible architectures for its implementation as well as the reference user algorithm to be implemented at the airborne receivers.
- ARAIM has different characteristics compared to current SBAS such as: using of the dual-frequency ionosphere-free pseudorange combination, not using differential corrections, enabling the use of all GNSS constellations that provide a reliable and proven Integrity Support Message (ISM).
- Two constellations are required to meet minimum availability requirements globally for LPV-200 using ARAIM, which is the initial target considered by the ARAIM TSG. In addition, the possibility to achieve a less stringent performance to support Horizontal navigation only, and which can be implemented in shorter term is also being analysed.

### Objectives pursued and foreseen results:

- The main objective of the project is to develop an Advanced RAIM (Receiver Autonomous Integrity Monitoring) prototype, following the lines as defined by the ARAIM TSG.
- The developed prototype may be used in a demonstration campaign.
- The second objective of the project is to assess ARAIM in:
  - Aviation Domain: enabling global Horizontal Navigation as well as Vertical (LPV-200) operations including threat allocation and mitigation.
  - Maritime Domain: enabling marine global general navigation providing integrity, especially when the receiver is outside coverage of IALA Beacon Differential GNSS transmissions.
- The third objective of the projects is to test the performance in number of test scenarios for safety critical applications (aeronautical, maritime, rail and road).

#### Foreseen results:

- The expected results are a prototype for an ARAIM fulfilling all the abovementioned requirements. The prototype will be accompanied by the corresponding documentation.

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

The call for proposals is intended to fund 1-2 project(s).

The project(s) will include the following activities:

- analysis of already defined operations ARAIM concepts and resulting needs in terms of on-board prototype architecture definition of ARAIM scenarios (at least for aeronautical, maritime, rail and safety critical road users) with and without Galileo SIS modifications,
- development of ARAIM receiver prototype:
  - for aviation horizontal navigation and LPV-200 operations
  - for marine general navigation
- execution of in a demonstration campaign the prototype,
- assess the receivers' performance in the different test scenarios
- provide inputs for the development of GNSS receiver standards and test specifications that include A-RAIM
  - For aviation: ICAO, RTCA
  - For maritime domain: IMO, IEC, RTCM

### Essential eligibility, selection and award criteria:

#### 1. Eligibility and non-exclusion criteria

- The proposal may be submitted by entities fulfilling all the criteria below:
  - being any legal entity with the technical and financial capability to perform the proposed activities;
  - the applicants are from the EU 28 member states, Switzerland or Norway.
  - 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.

#### 2. The applicants must fulfil the following selection criteria:

- The financial capacity of the applicant to perform the proposed activities
- The technical capacity of the applicant to perform the proposed activities



3. **Main award criteria:**

- Excellence: relevance of the proposal to the objectives of the call, credibility of the proposed approach, and innovation of the solutions proposed;
- Impact in terms of economic and public benefits derived from the proposal including but not limited to a coherent business plan for the exploitation of the results of the grant;
- Credible and effective dissemination plan for the results in the best interest of the Union linked to a minimum passing requirement;
- Quality of the implementation: 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:**

- Allocated budget: € 2,500,000

	<b>Stages</b>	<b>Date and indicative period</b>
a)	Publication of the call [T0]	November 2015
b)	Deadline for submitting applications [T0 + 3 months]	February 2016
c)	Evaluation period [T0+ 6 months]	April 2016
d)	Information to applicants on the outcome of the evaluation	May 2016
e)	Grant Agreements Signature [T0+7 mths]	June 2016

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

Up to 60-70% funding of the eligible total costs.

## 1.1.2 Member States and other EU Institutions support

### 1.1.2.1 GRC Support from MS

#### 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.

To be implemented through call for proposals.

#### BUDGET LINE:

GEX.0054/55 Service Centres - GRC Development, OPS & Maintenance

#### BACKGROUND:

- In 2013, EC has commissioned a Galileo Reference Centre Working Group (GRC-WG) composed of Member States and third countries participating in the GNSS Programme (hereafter referred to as "MS": Member States and third countries participating in the GNSS Programme). The members of the WG support the GRC Definition Phase and support the coordination MS contributions to the Galileo Early Services.
- During GRC WG meetings, MS have expressed explicit interest in contributing not only to the Galileo Early Services but also to the GRC. In the GRC WG meeting held on the 2nd of July, MS made proposals for their potential contributions.
- In 2014, the GSA has launched, in line with article 30 of the GNSS Regulation 1285/2013, a call for proposals (GSA/GRANT/EGNOS/01/2014) open to national agencies and institutions of MS for EGNOS Service Performance Monitoring Support (SPMS). Based on this experience the GSA plans to launch a call for proposals for the MS support to GRC activities.
- For MS contributions to the GRC, the GSA is considering to provide a number of grants (or contracts depending on the applicable conditions) in order to integrate and steer these contributions into the direction where the GRC could use support. These grants are expected to ensure support for a limited duration under a Framework Partnership Agreement (FPA). The approach is to be consolidated based on the outcome of the ongoing EGNOS grant process.
- The objective of the GRC grants is to establish long-term relationships with partners (non profit-oriented organisations of the MS) to provide access to a range of facilities and expertise at MS level. This will enable the GRC to benefit from the existing capacities and expertise developed under past public investments by MS. Technically, the MS contributions

to the GRC could build on MS contributions to Early Services, an activity under responsibility of the EC with GSA support.

- Through the call for proposals, the GSA will establish Framework Partnership Agreement or Agreements with a consortium (or consortia) of national entities and institutions for the period of 2016-2020, which is going to be implemented through specific grants. The indicative overall budget for the entire duration of the FPA is estimated at €4.000.000. The FPA and the first Specific Grant based on the FPA are planned to be awarded in 2016.

#### **Priorities of the year, objectives pursued and expected results:**

##### **Priorities of the year:**

- Integrate and steer MS contributions in the areas where the GRC could use support;
- Benefit from existing capacities at MS level, built on significant past public investments;
- Continuation of MS support for Early Services monitoring;

##### **Objectives pursued**

To establish long-term relationships with partners (non profit-oriented organisations of the MS) to provide access to a range of facilities and expertise at MS level for service performance monitoring, taken 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) benefitting from but also contributing to maintaining the long term competences and expertise at the level of MS;
- (4) interfaces are defined by the GRC, MS contributions must comply with these;

##### **Expected results**

The activity itself will start in 2016, in 2015 the call for proposals will be released. In the longer term, enhanced performance of the GRC.

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

The anticipated support activities are:

- (1) GNSS data provision through national or international networks: data collected with networks of reference stations situated inside MS, regional (covering more than one MS) and international networks (including reference stations outside MS) should continuously be provided to the GRC. Priority is Galileo and GPS but the GRC will address all GNSSs: Glonass, Beidou, regional systems, ...;
- (2) Provision of products: 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;
- (3) Signal in Space Monitoring: Campaign-based SiS monitoring and analysis using antennas with large aperture;
- (4) GNSS Performance investigations: Campaign-based GNSS performance investigations using other than the above assets available in MS;
- (5) Other support to GRC Activities: Consultation on the definition of GRC products, GRC and MS product comparison, expertise, etc.

### Essential eligibility, selection and award criteria for the Framework Partnership Agreement:

1. Eligibility and non-exclusion criteria
  - The proposal may be submitted by entities fulfilling all the criteria below: being any legal entity (national agencies, research institutes, or any other similar organisations or bodies) which can demonstrate their independence of judgement from the industry involved with the Galileo System (development and operations) and the absence of conflict of interest in providing impartial performance monitoring services to the GSA:
    - the applicants are from EU 28 member states, Switzerland or Norway;
    - 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.
2. The applicants must fulfil the following selection criteria:
  - The financial capacity of the applicant to perform the proposed activities
  - The technical capacity of the applicant to perform the proposed activities
3. Main award criteria:
  - Relevance of the proposal to the objectives of the call and credibility of the proposed approach
  - Coherence and effectiveness of the work plan, including appropriateness of the allocation of tasks and resources
  - Cost-effectiveness

**Indicative timetable of the call for proposals:**

	<b>Stages</b>	<b>Date and indicative period</b>
a)	Publication of the invitation to submit a proposal	November 2015
b)	Deadline for submitting applications	February 2016
c)	Evaluation period	March 2016
d)	Information to applicants on the outcome of the evaluation	April 2016
f)	Signature of Framework Partnership Agreement	May 2016

### 1.1.2.2 PRS Joint Test Activities with MS for Pilot Projects

#### 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.

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.

To be implemented through one Call for Proposals to be launched in 2015 to cover the support to the implementation of up to 10 PRS Pilot Projects.

#### BUDGET LINE:

GEX.0045

#### 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 from Galileo to users involving Member States.
- European Commission launched a Call for Engagement in 2013 open to EU Member States (MS) to identify the level of interest in PRS Pilot Project. So far 12 MS already expressed their interest.
- GSA, through the Galileo Delegation Agreement, has been entrusted by the Commission the organisation of the PRS Pilot Projects. The programme will support Member States PRS Joint Test Activities.
- Through the call for proposals the GSA would like to establish a framework involving the relevant MS authorities (notably the Competent PRS Authorities, CPA) to support the implementation of the PRS Pilot Project tests.
- The indicative overall budget for this call for proposal is up to €2.500.000.

**Priorities for the year, objectives pursued and expected results:**

**Priorities of the year:**

Cooperation among PRS Participants with the aim to avoid duplication of activities under financing of the Galileo Programme; Cooperation among different MS is mandatory for the participation.

**Main Objectives pursued**

- Evaluate the Galileo PRS in a representative (e.g. by using real Galileo signals) and suitable testing environment;
- Evaluate and promote the common use of the PRS Service by several PRS Participants and/or stimulate cross fertilisation among PRS participants;
- Provide lessons learnt and feedback to the Programme and the CPAs and PRS PoC;
- .

**Expected results**

- Preparation and Execution of joint test performed by MS using PRS;
- Demonstrated performance for given applications using the Galileo PRS;
- Reporting and/or disseminating to the relevant fora and provision of data related to the performed tests to the Programme.

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

The selected proposals for Joint Trials could include a set of Test Items/engineering activities in the areas below

- 1) Logistics
- 2) Facilities
- 3) Engineering:
  - a. Installation of equipment
  - b. Configuration and setting-up
  - c. Technical Assistance
- 4) Consumables
- 5) Other items fully justified to run the JTA.

The Group of MS in charge of a JTA should justified the use and the expenses on the selected items.

**Essential eligibility, selection and award criteria for the grant:**

**Eligibility and non-exclusion criteria**

- The proposal may be submitted by entities fulfilling all the criteria below:
  - CPAs, PRS Point of Contact, or the entity under which the CPA and/or the PRS PoC have been established;
  - Legal entities (governmental organisations, publicly owned companies and organisations, national agencies, research institutes...) established in the territory of a European Union Member State having designated a CPA and for the scope of the call for proposals acting under the formal authorisation, supervision and responsibility of the CPA of the MS in

which they are established.

- In case of privately owned companies they shall be:
  - Established in one of the European Union Member States which has designated a CPA;
  - Duly authorised to carry out the activities in the frame of the call for proposals by the CPA of the EU MS in which the entity is established and acting under the authorisation, supervision and responsibility of that CPA.
  - Duly authorised by the Security Accreditation Board (SAB).

**Main selection criteria:**

- The consortia shall be composed by at least 3 MS, of which at least two have designated CPA. The coordinator shall be a CPA.
- Applicant's technical capacity in understanding, reflecting and preserving the needs of PRS and performing the proposed activities
- The financial capacity of the applicant to perform the proposed activities

**Main award criteria:**

- Impact and relevance towards the achievement of the call's objectives
- Coherence and credibility of the proposed activities
- General quality of the proposal (work organisation and clarity)



**Indicative timetable of the call for proposals:**

	<b>Stages</b>	<b>Date and indicative period</b>
a)	Publication of the invitation to submit a proposal	September 2015
b)	Deadline for submitting applications	December 2015
c)	Evaluation period	January 2016
d)	Information to applicants on the outcome of the evaluation	February 2016
f)	Signature of Framework Partnership Agreement	February 2016 onward

**Maximum possible rate of co-financing of the eligible costs:**

Financial contribution: Up to 50%
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