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| Logo of the European Commission | EUROPEAN COMMISSIONDIRECTORATE-GENERAL FOR INTERNAL MARKET, INDUSTRY, ENTREPRENEURSHIPAND SMESEU Satellite Navigation Programmes**The Director** |

Brussels,

GROW/J1/KZ/ccf/ARES(2019)[4306478](https://webgate.ec.testa.eu/Ares/document/show.do?documentId=080166e5c4f27965&timestamp=1560762008174)

Questionnaire for the Call for ideas for the definition of potential GNSS upstream R&D activities funded under Horizon EUROPE

1. **General information**

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| **Company/organisation** |  |
| **Contact person details** |  |
| **Country** |  |
| **Current field of interest** |  |

1. **Provide here the 3 priorities of R&D in the area of upstream GNSS.**

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| *Please use the required space for your answer.* |

1. **Provide here your views regarding possible improvements of the implementation scheme for R&D in the area of upstream GNSS (grant versus procurement, IPRs, etc).**

**Indicate also if you were a beneficiary of the “H2020 programme for upstream satellite navigation” (MAS by EC or HSNAV by ESA) and provide your feedback on this experience.**

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| *Please use the required space for your answer.* |

1. **New services for Galileo have been studied in Horizon 2020, which are now introduced in the portfolio of services for Galileo Second Generation (G2G)[[1]](#footnote-1); similarly for EGNOS. Do you think the portfolio of services provided by Galileo and EGNOS is now sufficient, or would you recommend new services to be explored?**

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| *Please use the required space for your answer.* |

1. **New markets are emerging in the field of navigation and positioning that EGNSS should support, typically in the field of autonomous and ubiquitous positioning. What would be the main differentiators for a PNT infrastructure to reach these markets?**

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| *Please use the required space for your answer.* |

1. **With the advent of innovative terrestrial infrastructures such as 5G, what should the EGNOS and GALILEO programmes do to support/complement efficiently these emerging technologies?**

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| *Please use the required space for your answer.* |

1. **Other GNSS worldwide carry on with the modernization efforts. What is your view on their approach and strategy(ies)? What elements of these strategies should be introduced in the EGNSS programmes?**

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| *Please use the required space for your answer.* |

1. **Multi-use interoperability of satellite and ground segment assets is a global trend that increments drastically the usage of space products. What is your view on potential upstream R&D activities combining navigation system with other space infrastructure (e.g. science-navigation experiments, earth observation-navigation, telecommunications-navigation synergies, etc)?**

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| *Please use the required space for your answer.* |

1. **GNSS is a key infrastructure used to provide positioning and timing for a vast number of applications, some of which having a critical and or strategic nature. Robustness of the GNSS service and infrastructure is therefore essential. What would be the R&D actions needed to increase the robustness of GNSS?**

*Please use the required space for your answer.*

1. **Backup solutions are often included in the design of critical infrastructures and applications. Which R&D areas can you identify for the evolution of back-up PNT systems to be complementary to Galileo and EGNOS and able to improve resilience of the overall PNT solution? Please suggest technologies both for positioning and timing applications. Please add details of the maturity of the technologies identified.**

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| *Please use the required space for your answer.* |

1. **The Commission explicitly stated in the European Space Strategy that it is committed to addressing vulnerabilities in the European industrial supply chains by supporting the development of critical space components, systems and technologies that will enhance technological non-dependence. Concerning EGNSS, what R&D efforts do you think should be prioritised in order to enhance technological non-dependence going forward?**

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| *Please use the required space for your answer.* |

1. **R&D topic detailed proposal**

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| **Proposed R&D topic** | *Please describe in a few words your proposal (max. 500 words).* *For more details, please use the abstract section below* |
| **Justification and main achievements expected.** | *Please provide some elements of justification as to why this topic should be supported. (max. 500 words).* *Typical questions to answer are** *Where are we today in Europe in this sector? What are the trends?*
* *What will be the technology in this sector in 2027?*
* *What will R&D bring in this topic?*
* *Why is it important for Europe to support this domain? By when?*
* *What do we need to do to ensure a favourable position of EGNSS in this domain?*
 |
| **Estimated required budget** |  |
| **Estimated timeline** |  |
| **Potential synergies with other funding sources to be exploited**  | *Indicate here if you believe this topic should be funded by the EGNSS part of Horizon Europe exclusively, or if other funding sources could be envisaged in complement (Horizon Europe SPACE budget, EGNSS programme budget etc), and why.*  |

1. **Abstract**

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| *Please use the required space for your answer.* |

1. Refer to article 44 of the proposal for a regulation of the European Parliament and of the Council establishing the space programme of the Union, here:

 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2018%3A447%3AFIN> [↑](#footnote-ref-1)