headquarters

ANAS - ESA Grand Challenge

"Enhanced positioning 4 Smart Road"

F.A.Q. (Frequently Asked Questions)

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1. **Q: If an SME has a collaboration with a Research Center (RC), can the RC be integrated into the Team? For example, by naming a team member from the research entity or by mentioning its background and experience?**
   A: The Challenge is open only to SMEs as set forth in Article I (11), registered in one of the ESA Member States, Associate Member States or Cooperating States. The application can therefore only be submitted by the SME. Any presence of support partners can be reported in the background and experience section of the Application material. Support partners cannot be considered as joint applicant and the SME remains the sole Applicant. However, you can mention it.

2. **Q: Can one named team member come from the research entity?**
   A: Yes. However, only the registered SME will be considered as the competing team. But for the team members you are free to register members from the research entity for a potential cooperation.

3. **Q: Our current services are designed for drones, robots, and autonomous vehicles and we don't have any experience with C-ITS Systems or smartphones. Are participants required to meet all the listed objectives (e.g., smartphone integration, C-ITS system compatibility, app development), or do you expect a proposal focus on integrating our existing RTK technology into the framework of the challenge?**
   A: The objective of the Grand Challenge is to integrate competences that come from other sectors too. We expect a proposal focused on existing or new solutions based on RTK technology, to be integrated into Anas Smart Road workflows. It is not required any specific experience in C-ITS domain, although the proposed solution shall enable the GNSS accuracy with at least 50 centimetre-level for providing C-ITS services listed in the Terms and Conditions.

4. **Q: The challenge requires a tested application that can be incorporated into the Smart Road App. Would it be acceptable to provide a prototype or proof-of-concept demonstrating how our technology can enhance the required services, or must it be fully functional and integrated?**
   A: The Grand Challenge requires a Tested Application Solution in a prototype version, that can be easily integrated into the Smart Road App after the Challenge; the prototype version will be tested in ANAS Smart Road infrastructure. It is acceptable to provide a prototype demonstrating how the technological solution can enhance the required services.

5. **Q: Is the focus more on GNSS positioning accuracy or C-ITS?**
   A: The focus is more on positioning accuracy. It is understood that the greater the accuracy the better the quality and number of C-ITS services that can be delivered.

6. **Q: Would you look for providers that can deliver several C-ITS use cases?**
   A: We are not looking for providers of C-ITS use cases; Anas Smart Road infrastructure and application provide C-ITS messages to the drivers.

7. **Q: Is key focus for use cases on safety mainly or is smart routing of interest as well?**
   A: The key focus is firstly on safety; however, any other additional component could be inserted in the proposed solution.

8. **Q: Is it worth applying if one can contribute a day 1.5 service only?**
   A: It is worth applying based on the increase in positioning accuracy that the proposed solution allows to achieve; this accuracy enables a certain number of C-ITS services.

9. **Q: Will the RTK unit, receive the rover (moving) positions directly from mobile devices and OBUs, or will these be relayed via the ANAS server?**
   A: The second option, it will be relayed through the ANAS server.

10. **Q: Will the RTK unit receive RTCM corrections data from the ANAS server?**
    A: The RTK software solution should correct the GNSS positioning information on the Anas server; then the correct information will be inserted in the C-ITS message and spread-out by Anas Smart Road infrastructure.

11. **Q: In what format are the RTK corrections provided (e.g., high-level sentences or raw data such as bytes, NMEA, RTCM3)?**
    A: There is no preference about the correction format, it is important that the corrected positioning information will be provided with the key corrected data for the single event type (i.e. StreetCode, Meter, Latitude, Longitude, Direction, Date)

12. **Q: If the RTK unit retrieves data directly from mobile devices, are we expected to develop a demo mobile application?**
    A: No, the GNSS information are available on the Anas server; RTK software solution has to be easily integrable into the Anas Smart Road Infrastructure and App.

13. **Q: For a more reliable and scalable system, I believe there is a need for a moving rover that transitions between zones (from one fixed station to another), which would enhance RTK precision over long distances. Should we consider implementing relay between a network of base stations (more than one) for this solution and better precision? If so, will there be different data sources available?**
    A: For the scope of the present Challenge, the proposed solutions shall exploit the Road Side Units of Anas Smart Road as reference station: Road Side Units are located approximately every 900 meters; a moving rover could not fit in a complex highway environment with a dense vehicles presence; any other network of GNSS base station based on stationary receiver for a better position accuracy could be considered in the proposed solution.

14. **Q: Can we have access to all base station and rover unit data, including parameters such as number of satellites, pseudo-noise, and other GNSS metrics?**
    A: You will have access to the position of the vehicles based on car OBU (if it is available) or drivers smartphone and of the fix position of the Road Side Units.

15. **Q: If data received is from ANAS server, is the data simulated from real-world / live scenarios or simulated (dummy) data?**
    A: Real-word/live scenario.

16. **Q: Can we use our own real-time GNSS data for development and validation purposes?**
    A: Yes, demonstrating the relevance for the validation purposes.

17. **Q: Will the RTK unit be expected to run on an edge device, or will there be a dedicated server for computation?**
    A: The RTK software should run on Anas server, typically on a virtual machine for computing.

18. **Q: In what format is the GNSS data output from the Anas Smart Road application provided (processed or raw data)?**
    A: The GNSS data output from the Anas Smart Road application is provided in processed format. However, the Applicant is free to propose alternatives format, for instance raw measurements from the GNSS receiver as long as these can be easily integrated in the Anas Smart Road application in the future. The important factor is that the positioning information is provided with the key data for the individual event type (e.g., StreetCode, meter, latitude, longitude, direction, date).

19. **Q: Can an SME assemble the team after being selected for the challenge? Is the three-member minimum mandatory to the point of automatically disqualifying the SME if it is not met, or does it penalize the SME in the selection phase but still allow the SME's proposal to be evaluated?**
    A: One selection criterium is focused on background and experience of the Applicant and team composition. The evaluation will associate a score to each selection criteria as defined in the Art XII (2).
    If the Applicant does not provide information for the required involved team, the evaluation against that criterium will be lacking. In any case, provide the information about the potential team members (at least three). Subject to compliance with the Terms and Conditions, the Participant may supplement the number of Team members during the Challenge and shall notify ESA and ANAS the corresponding information required for all members of the Team.