DARPA-PS-26-126

Radiofrequency Architectures Applying Photonic Timing and Routing (RAAPTR)

Question and Answer (Q&A)

Version 2

7/7/2026

Q1. [Eligibility] Can Government labs, university affiliated research centers (UARCs) and federally-funded research and development centers (FFRDCs) participate as performers?

A1a. Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and Government Entities to include National Laboratories are not eligible to function as performers in the RAAPTR program, either as a prime awardee or as a subcontractor.

Q2. [Eligibility] Can an entity propose to RAAPTR without having received the CUI Addendum?

A2a. Entities who have not requested and been provided the RAAPTR CUI Addendum by DARPA are not eligible to lead a proposal effort as the prime proposer. However, such entities are not prohibited from functioning as sub-contractors for an eligible prime proposer.

Q3. [Eligibility] Can an entity without CUI-compliant computer systems receive the CUI Addendum?

A3a. The CUI Addendum will not be provided to entities without computer systems rated for CUI materials. If necessary, DARPA may be able to provide the CUI addendum via classified communication channels on a case-by-case basis. To request the CUI Addendum in this manner, please email the RAAPTR inbox (RAAPTR@darpa.mil).

Q4. [Eligibility] Can separate divisions within a company submit their own separate proposals to the RAAPTR program?

A4a. Yes, separate divisions within a company may submit separate proposals. However, if the divisions utilize separate CAGE Codes, ensure they each independently abide by the Eligibility requirements found in section V of the RAAPTR Program Solicitation.

Q5. [Eligibility] Can an entity participate in more than one proposal as a subcontractor or prime?

A5a. There are no limits to the number of abstracts or proposals on which one entity may participate. However, in order to lead a proposal as the prime proposer, the entity must have requested and been provided the RAAPTR CUI Addendum by DARPA.

Q6. [Eligibility] Must the proposal include a prior participant in the GRYPHON program as a RAAPTR team member?

A6a. No.

Q7. [Eligibility] Can a faculty member who is affiliated with an FFRDC be allowed to partner with a proposing team?

A7a. Yes, provided that the faculty is not performing the research through the FFRDC. Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and Government Entities to include National Laboratories are not eligible to function as performers in the RAAPTR program. Individuals with multiple affiliations may choose to propose under an eligible CAGE Code with which they are affiliated.

Q8. [Scope] What restrictions are intended for the oscillator? Does it have to be photonics-based or is the program agnostic to the underlying oscillator technology? Does it have to be optical at all?

A8a. The oscillator may be, but is not required to be, composed of integrated photonics. Other optical methods, such as optical fiber-based oscillators, may also be considered. In either case, oscillators developed must meet all program metrics. Specifically excluded is research that advances non-optical methods of microwave generation.

Q9. [Scope] Does oscillator frequency need to be tunable?

A9a. The oscillator frequency is not required to be tunable. Proposers must select an output frequency within the specified band, and this output frequency may be fixed if the proposed use case does not require tuning. Proposals for use cases that require dynamic frequency tuning from the oscillator should include a rationale for how this functionality could be addressed by the program. Whatever frequency is chosen for the oscillator, whether fixed or tunable, the oscillator must meet all program metrics, including frequency-scaled phase noise (see footnotes to the metrics table in the Program Solicitation for more information).

Q10. [Scope] What are the opportunities for expansion of scope in phase 2?

A10a. DARPA intends to use the transition from Phase 1 to Phase 2 to finalize the application space of RAAPTR technology, with the potential for added work towards system-level demonstrations (e.g., an optically enabled radar) based on the architectural designs developed in Phase 1.

Q11. [Scope] Can the proposal identify potential applications or technology transition paths?

A11a. Systems proposed will be evaluated based in part on their ability to utilize optical devices to overcome known capability gaps inherited from legacy electronic devices, and

in a manner to achieve performance levels otherwise not possible with conventional electronic means. Hence, proposals must indicate one or more intended use cases for the proposed technology. Technology transition paths into Government or commercial use cases are not required in the proposal, but may contribute favorably to DARPA's evaluation of the proposal.

Q12. [Scope] Must the team working on oscillators make use of oscillators that came from the GRYPHON program?

A12a. No.

Q13. [Scope] May proposers pursue stretch goals over and beyond the metrics of the solicitation?

A13a. Proposers are welcome, but not required, to define their own additional metrics beyond the RAAPTR program metrics, so long as a rationale is provided to justify such additional metrics.

Q14. [Scope] Can we introduce radically new concepts to suppress vibration effects?

A14a. DARPA welcomes innovative concepts, provided they represent a plausible path to meeting program metrics within the time constraints of the program.

Q15. [Scope, Classification] Is fundamental research required within the project?

A15a. No. If relevant for the proposed work, proposers should identify the scope of fundamental research based on the guidelines provided by the RAAPTR CUI Guide.

Q16. [Scope, Classification] Is non-fundamental research required within the project?

A16a. Yes, non-fundamental research is required within the project per the RAAPTR CUI Guide. For example, rugged oscillator designs targeted in the program will be protected information.

Q17. [Classification] Are non-hardened variants of RAAPTR oscillators CUI?

A17a. No, the CUI Guide does not designate RAAPTR oscillators as CUI unless they meet environmental metrics.

Q18. [Classification] Are non-integrated demonstrations of RAAPTR oscillators, i.e., tabletop testing of photonic elements connected by fiber, designated as CUI?

A18a. No, the CUI Guide does not designate RAAPTR oscillators as CUI unless they meet environmental metrics.

Q19. [Metrics] Is the vibration metric intended to apply during operation of the system, or does it merely indicate the device must survive this level of vibration?

A19a. The device must be operational and meet program performance metrics while exposed to the environmental conditions listed within the metrics.

Q20. [Metrics] Must oscillator timing performance be traceable to a primary US timing standard?

A20a. No.

Q21. [Metrics] Are there any metrics or requirements for time transfer in a proposed system?

A21a. As specified in the program metrics table, the oscillator must maintain at most 1 picosecond timing deviation over intervals from 1 to 100 seconds. Also stated in the metrics table is that at any point in the analog RF system architecture, measured time deviation must be no more than 3 dB worse than the oscillator itself. This would allow for no more than 1 picosecond timing deviation relative to the oscillator's direct output over the intervals from 1 to 100 seconds. If an architecture is proposed involving multiple platforms physically remote from one another, this requirement would apply to timing deviation measured at any point in the analog RF system on any of the platforms.

Q22. [Metrics] Is humidity a metric?

A22a. Humidity is not a metric for the program. However, proposers are welcome, but not required, to define their own additional metrics such as humidity, provided a rationale is given to justify such additional metrics.

Q23. [Final Testing] Must the proposal describe the final demo?

A23a. The Government team will coordinate and execute the final test event. Performers will be provided with the information necessary to prepare for the test event. All test data will be collected and post processed by the Government team. Proposals should include the necessary tasks and costs to deliver the hardware prototypes and support the Government team in integrating the prototype into the final demo. Particular technical steps and challenges that the proposed approach presents to the final demo may be helpful to the proposal reviewers.

Q24. [Final Testing] What will constitute the airborne flight testing? Can performers provide their own platforms for such tests?

A24a. The airborne flight testing will be defined during Phase 1. Proposers may include their own platform for complementary testing to the Government furnished platform.

Q25. [Government Team] Will there be a separate call which will come out related to the Government team?

A25a. No. Entities interested in participating on the Government team are welcome to reach out to DARPA via RAAPTR@darpa.mil.

Q26. [Scope] If a system architecture involving multiple remote platforms is in view in a proposal, is it acceptable to plan for demonstration of only a single functioning brassboard during the program?

A26a. Yes.

Q27. [Contracts] Is an expenditure-based contract approach acceptable for a proposal?

A27a. No, DARPA anticipates utilizing exclusively milestone-based contracts.

Q28. [Classification] Is the GRYPHON work being transformed from fundamental research to CUI?

A28a. The RAAPTR CUI Guide describes the delineation of fundamental research and CUI for the RAAPTR program.

Q29. [Classification] When should RF systems be treated as fundamental research vs. CUI?

A29a. The RAAPTR CUI Guide describes the delineation of fundamental research and CUI for the RAAPTR program.

Q30. [CUI Materials] Are there two CUI Addenda / two CUI request forms?

A30a. No, there is only one CUI Addendum for the RAAPTR Program Solicitation. Entities seeking access to the CUI Addendum need only submit one CUI Materials Request Form.

Q31. [CUI Materials] If approved for access to the CUI Addendum, how can an entity know which individuals are permitted access to the CUI Addendum?

A31a. The CUI Addendum includes a dissemination list detailing all individuals approved for access.

Q32. [CUI Materials] Can an individual request to be added to the CUI Addendum approved dissemination list if not currently covered within the list?

A32a. No.

Q33. [CUI Materials] Can a prime distribute the CUI Addendum to subcontractors?

A33a. Yes, provided the prime can verify the subcontractor has met the current NIST SP800-171 requirements, the individual(s) receiving the Addendum meet the requirements listed in the dissemination list (for example, U.S. Citizens or Lawful Permanent Residents (Green Card) associated with the RAAPTR proposal), and that the subcontractor has a data management plan to safeguard the CUI material. The prime is responsible to make

sure any RAAPTR CUI in their possession is handled appropriately by anyone they distribute it to.

Q34. [Metrics] Are there any requirements for overall system volume?

A34a. While program metrics specify the oscillator volume, a requirement for the overall system volume has not been specified. Proposals may identify performer-defined metrics for system volume if desired. The impact of the volume of proposed systems on potential applications may influence DARPA's evaluation of the proposed effort positively or negatively.

Q35. [Metrics] Will proposals without a plausible path to meeting some program metrics be considered if they are sufficiently compelling in other aspects?

A35a. Proposals will be evaluated strictly in accordance with the evaluation criteria and program metrics established in the solicitation.

Q36. [Program Structure] Does DARPA anticipate a separate abstract and/or proposal for each of the two planned phases of the program?

A36a. No.

Q37. [Government Team] Is the Government team completely defined and closed?

A37a. No. DARPA anticipates NIST and JPL will participate in the RAAPTR Government team as per the Program Solicitation. However, other entities interested in participating on the Government team are welcome to reach out to DARPA via RAAPTR@darpa.mil.