Microelectronics Innovation for Next-generation System Advancement and Validation (MINSAV)

Industry day (09 October 2019) * Questions (Q) and Answers (A)

ARA SPECIFIC QUESTIONS

1) **Q:** Can U.S. persons (citizens and green card holders) participate in program or is it limited to U.S. Citizens?

A: U.S. persons. Please see ITAR regulations for further information.

2) **Q:** Is the MINSAV ARA distinct from T&AM and MINSEC?

A: The MINSAV ARA is a contracting vehicle constructed to meet the needs of the Air Force (AF) regarding the best supplies of microelectronics. Trusted and Assured Microelectronics (T&AM) and Microelectronics Innovation for National Security and Economic Competitiveness (MINSEC) are programs led by the Office of the Secretary of Defense (OSD). OSD may provide funding from T&AM/MINSEC for calls on the MINSAV ARA that align with program objectives.

3) **Q:** In the shift from Trust to Assurance, including traceability and provenance, what artifacts do you care about more? What elements of assurance will help a component be field-able?

A: While traceability and provenance are base elements for providing assurance, they by themselves do not provide complete assurance. Additional artifacts to produce assurance, including those that provide confidentiality and integrity through device fabrication, are included in the call. Providing confidentiality and integrity throughout the fabrication process are key to enabling state-of-the-art (SOTA) technology to be used in field-able systems.

4) **Q:** How is the $800M allocated across calls? Can you describe the funding profile over the next 5 years? How many calls do you anticipate? What is the frequency of calls?

A: The $800M is not currently allocated to future tasks. Additional calls within scope of the MINSAV ARA may be issued up to the $800M ceiling. No specific interval currently planned. Future calls/funding for the ARA will be issued as AF topic interest and funding allow.

5) **Q:** The first Call of MINSAV is ATC-DP. Will other calls branch off from or be related to this call?

A: Future funding and calls for the ARA will be based on topic interest and available funding. They will be separate from the ATC-DP call.

6) **Q:** Do you anticipate any calls for microelectronics for space in the future?

A: Future calls will be issued as Air Force topic interest and funding allow.

7) **Q:** Do you anticipate any calls for semiconductor fabrication opportunities and affordable access through multi-project wafer (MPW) runs in the future?

A: Future calls will be issued as Air Force topic interest and funding allow.

8) **Q:** Clarify "Government Furnished Equipment (GFE) per call"?

A: GFE may be made available on a per-call basis.

9) **Q:** Do you anticipate more lead time and discussion with industry for future calls? Will future calls have similar requirements or can you specify what industry can expect?

A: Future calls are anticipated to follow a similar pattern and will be based on topic interest and available funding.

10) Q: The ARA mentioned non-FAR contracts, however you list a subcontractor analysis FAR reference. Will these be applicable to Other Transactions (OT)?

A: The prime should select the contract type that facilitates the teaming relationships and meets the performance objectives of the particular call. Any OT agreement written for the first call is anticipated to require subcontractor relationships to facilitate the collaboration between commercial, defense industrial base, academic, and small business partners. As such, subcontractor costs shall be analyzed by the prime whether it be a FAR or Non-FAR based award. FAR 15.404-3 provides an example of what the analysis must contain for reference.

11) Q: Section A: Solicitation (White Paper Format - Section IV.2.b.1).g), page 14 of ARA) – is it the intent for display of this information to be considered a cover sheet and if so, does it count towards the ten (10) page limit?

A: The ARA instructions call out the sections must be contained within each white paper. All sections count against the page limit. However, there is no requirement to start each section on its own page.

<u>CALL 01 * ATC-DP SPECIFIC QUESTIONS</u>

12) Q: Which ARA Sensor Area(s) of Interest and Task(s) does Call 01 fall under?

A: MINSAV Call 01 falls under Sensor Area(s) of Interest and Tasks in ARA, paragraph I.1.a areas: 1,2,3,4,5,6 and I.1.b areas: 1,2,3,5,6.

13) Q: Can the Government provide additional information regarding the definition of 'silicon qualified' and 'functionally vetted' of design intellectual property (IP)? (Call 01 Statement of Objectives (SOO) paragraph 3.7)

A: Referencing Call 01 SOO; Silicon qualified – IP which has been which has been realized, evaluated and implemented in silicon. Functionally vetted – functionality has been verified through rigorous simulation with high test coverage.

14) Q: Are (3) SOTA Nodes in 3.7 and the (3) SOTA Technologies in 3.8 synonymous?

A: Referencing Call 01 SOO paragraph 3.8; SOTA Technologies in 3.7 and 3.8 can be the same but there is no requirement that they are the same.

15) Q: The Call refers to ATC as "Applied Technology Center", the SOO refers to ATC as "Advanced Technology Center". Are they synonymous?

A: Applied Technology Center was inadvertently utilized. <u>Advanced</u> Technology Center is correct.

16) Q: Please clarify how the SOO, Section 7 - Deliverables, describes the handling of IP against the language provided in ARA Overview Section 6.f regarding data rights, along with the DFARs data rights clauses included in the Model Contract. Specifically when the SOO makes the following two statements in Section 7: "The performer shall deliver all intellectual properties (IPs) and source code developed during and/or used for the MINSAV effort." "The performer shall ensure that all IPs are licensed appropriately including the complete transfer/transition to the USG." The first phrase appears to include any/all background IP used and the second phrase appears to demand either full ownership or at a minimum an unlimited license to said IP used for the project. So, we need to fully understand how the data rights spelled out in the Overview and Model Contract mesh with the demands of the SOO.

A: Acquisition of IP for use in the development of articles is anticipated by performers. As the government wants to be able to evaluate designed articles, it is critical that access rights for the government are obtained such that the government can inspect, verify, validate, and reproduce the designed articles for prototype demonstration. Note that the articles produced under the call are not for production.

17) Q: Documents distributed thus far, do not call out photonics. Are photonics applicable?

A: While photonics are of interest to DoD, the first call focus is SOTA CMOS, not photonics.

18) Q: Are expected prototypes Technology Readiness Level (TRL) 6?

A: Expected prototypes range from TRL 6-7.

19) Q: Solicitation discusses different contracting methods. Does this preclude one from bidding on future calls?

A: Performance of this call does not include any requirements definition and therefore it is not anticipated that responding to ATC-DP would preclude any organization from responding to future calls.

20) Q: There are two aspects: demonstration and process. Could the "process" aspect get into A&AS?

A: The ATC-DP is not seeking A&AS services and instead is requesting the "best" microelectronics sources to achieve a prototype demonstrator. The process aspect of the first call is only to construct the process, not provide an operational service.

21) Q: Define Sensor edge?

A: Sensor edge refers to the edge processing node close to a physical sensor.

22) Q: Does digital or analog apply?

A: Digital, analog, or RF processing apply.

23) Q: Are you able to respond to individual tasks or only the overall SOO as a whole?

A: A minimum of 6 (out of 11) tasks must be responded to for a submission to be selectable. For the white-paper phase a page limit of 5 pages is imposed on submissions <u>not</u> responding to all tasks.

24) Q: Traceability, Provenance, ITAR – is Provenance replacing Traceability in the long-term?

A: This question does not apply to the ARA or the first call. Please refer to Dr. Lisa Porter's ERI talk on a zero-trust approach on the DARPA TV youtube channel.

25) Q: For the acceleration objective, is fixed programmable gate array (FPGA) acceptable versus chiplets?

A: The first call, Task 3.1 states, "The contractor shall design, develop, and implement military-relevant prototype component designs using state-of-the-art microelectronics technology (i.e. ≤ 22nm technology node) that highlight the differentiating capability of the use of advanced microelectronics." The designs require custom component designs.

26) Q: Three (3) SOTA 22nm and below?

A: The first call, Task 3.8 states, "The contractor shall construct foundry design and implementation flows for at least three (3) SOTA technologies in at least two (2) different US-based foundries." The requirement is three SOTA technologies in at least two US-based foundries.

27) Q: Would the AF consider, after White Paper submittals, combining ideas from one approach with another?

A: The AF will not establish teams from white papers. The expectation is that the proposers will form teams themselves with appropriate expertise provided by team members.

28) Q: Once a call has been awarded at a particular value are you able to add tasks/capabilities along the way that you might not have originally anticipated, in performance of the effort? I.e, can you pick up teams and ideas along the way?

A: It is the responsibility of the prime to manage costs within their award budget. Provided that the change is in line with the Statement of Work (SOW) placed on contract, the prime is within their rights to add subcontracts, tasks, etc. in performance of the effort, given the nature of development programs. However, if the changes are outside scope of the SOW or will lead to a cost overrun then the technical/contracting teams will need to determine whether the additional work/costs will be funded.

29) Q: Preference on FAR vs OT?

A: None.

30) Q: Is it a requirement/advantageous to the prime to have one or more Small Business (SB) participation?

A: A SB subcontracting plan is required to be completed by all companies, other than SB, to detail how they intend to include SBs in their approach and otherwise defend why they are not being utilized when opportunities exist. This is in relation to the DoD SB strategic goals that are set forth annually to increase small business dollars.

31) Q: What do you see the role of the United States Government (USG) playing? Will the USG be providing Government Furnished Equipment (GFE) such as cloud access with boundaries?

A: GFE is not anticipated to be provided for this activity. Proposers may seek relationships with existing cloud and boundary access providers.

32) Q: The full life-cycle of microelectronics includes anti-tamper which has a security classification guide. Is it possible you are missing something with MINSAV being unclassified?

A: This call is unclassified. No classified proposals will be accepted.

33) Q: Do you expect proposals from universities or partnerships at a larger field?

A: Proposals from commercial companies, universities, and defense companies are anticipated.

34) Q: Can you define expectations around customization and commercial off the shelf (COTS)-component based approach to achieving ATC-DP objectives?

A: While COTS components are part of many DoD systems, Task 3.1 in the ATC-DP call requires design of SOTA microelectronics components (≤22nm).

35) Q: Are universities able to participate given the export control restrictions (ITAR)?

A: Universities are encouraged to participate as long as they are able meet the ITAR requirements for the first call.

36) Q: What level of information, in reference to teaming, is required for white paper?

A: Teaming relationships, including rough definition of roles/responsibilities, and funding (rough order of magnitude (ROM)) should be defined in the whitepaper.

37) Q: In the first call you state 10 page limit, if we are rolling up our costs for the teaming aspect. Do you want a single number by year?

A: Breakout ROMs per team member, as applicable, should be included in the whitepaper.

38) Q: Teaming – How do we market to other companies?

A: Teaming relationships are to be established independent of the Government. A list of industry day attendees (who opted to share information) is posted to FBO to enable collaborative discussions.

39) Q: Are foreign companies allowed to participate as subcontractors to this ATC-DP Call?

A: No

CALL 01 * SOO SPECIFIC QUESTIONS

40) Q: 3.1 – Does a U.S. research technology capability less than or equal to 22nm with a commercialization roadmap meet the SOTA requirements of this program?

A: Research technologies are not the objective of the solicitation.

41) Q: 3.8 – Will a response be compliant with the solicitation where 2 of the SOTA nodes are manufactured inside the US and the other is manufactured outside the US?

A: Yes, so long as fabrication is provided by US based commercial foundries.

42) Q: 3.8 – GaN technology was mentioned during Industry Day, does a U.S. based GaN technology with a commercialization roadmap meet the SOTA requirements of this program?

A: While GaN is a desirable technology for the DoD, the ATC-DP call focuses on use of SOTA commercial CMOS technologies.