SMAP

Q&A

Version: V2.1 (Updated May 05, 2025)

Revision History

Date	Author	Change
04/25/2025	Program Staff	V1.0 Initial questions (1-4)
05/02/2025	Program Staff	V2.0 Questions 5-50 (Proposers' Day + Additional)
05/05/2025	Program Staff	V2.1 Update #9 and #10 (Proposers' Day materials)

No.	CFP Reference	Category	Question	Answer
1	CFP 4.3	Submission requirements	On page 40, the CFP mentions that a single entity may only submit a maximum of two (2) proposals (one to each Focus Area). Does this limitation include Concept Papers as well?	Proposers may submit more than 2 concept papers. Each concept paper should only include 1 Focus Area. Proposers may submit multiple concept papers on the same Focus Area. As mentioned in the CFP, a single entity may submit a maximum of two (2) full proposals (one to each Focus Area).
2	CFP 4.3	Submission requirements	Is there any limitation on the number of submissions per organization?	No limit on number of concept papers submissions per organization. Full proposal submissions are limited to 2 (one per Focus Area) per lead organization. For full proposals, refer to CFP Section 4.3.
3	CFP 1.3 (Page 15)	Scope	Are Optical/Photonic interconnects in scope?	SMAP focus is limited to die-to-die interconnects of any type within single SoC/SiP (system-in-package). SoC/SiP-to-SoC/SiP interconnects (aka scale-out) of any type are out of scope.
4	CFP 1.3 and Page 4	General	I only have expertise in some of the SMAP areas? What should I do?	Full proposals should address all the Technical Areas. Proposers are encouraged to partner with other organizations towards developing full proposal if they need expertise in certain areas.
			End of 04-25-2025 Update / Start of 05-02-2025 Update (V2.0)	
5	CFP 4.3	Submission Requirements	How to interpret: "Naming Convention: Proposers are to include their OpenWater Application # in the title of their Submission"?	OpenWater is the portal to submit both the SMAP Concept Paper and Full Proposal submissions. When creating an account on OpenWater, it will automatically generate an OpenWater Application # (a four-digit number). That is the number we request be included on the Cover page of your Concept Paper PDF submission and as part of the title / filename of your submission. Example: **5885**_[Institution]_SMAP-[ConceptPaperTitle].pdf

				*bold portion is an example OpenWater Application #.
6	CFP 4.3	Submission Requirements	What is the 'Opportunity Number' listed on the Cover Page of the Concept Paper Template?	The SMAP CFP Opportunity number is on the first page of the CFP: NAT-RD-25-0001.
7	CFP Appendix B	Submission requirements	Cover page – focus area and task area. What is needed for task area in this section?	The task area is not required for this program. The template should include "if applicable". You should disregard this box in the template. The Concept Paper and Technical Narrative Templates have been updated to reflect that Task Areas are not applicable to SMAP. These templates have been uploaded to the SMAP site.
8	CFP 4.3	Submission requirements	If an entity submits one or two proposals as a lead, **can it also participate as a sub-awardee in additional proposals** led by other organizations? Is there **any limit** on the number of proposals in which an entity can participate **as a sub-awardee**?	Proposers may submit more than 2 concept papers. Each concept paper should only include 1 Focus Area. Proposers may submit multiple concept papers on the same Focus Area. As mentioned in the CFP, a single entity may submit a maximum of two (2) full proposals (one on each Focus Area). There is no limit to the number of proposals an entity can participate as subawardee.
9	Proposer's Day Event Portal	Teaming Contacts	Do you have a list of people and companies that presented at the end of the day?	Yes, the list is posted in the Proposers' Day event portal (CVENT): https://cvent.me/YRNBXY. Log in to the event portal to locate this document. It will be available until **May 23, 2025**.
10	Proposer's Day Event Portal	Presentation Materials	Are there any presentations from the SMAP proposers' day meeting available to view?	Yes, materials from the event, include a recording of the event are available in the **Proposers' Day event portal** (CVENT): https://cvent.me/YRNBXY. Log in to the event portal to access the event materials.
11	CFP 3.0	Eligibility	Does every single member of a proposal need to be a member of the NSTC?	It depends on the scope and nature of how involved they are. If anyone on the team is classified as a subawardee, they need to be an NSTC member. There is a distinction between a subawardee and a contractor. Subawardees have substantive involvement in the research.

			Do unfunded team members need to be a member of the NSTC?	Definitions of Subawardee versus Contractor are available in the Natcast SMAP Program Budget Template online under the 'Guide-Subawardee vs. Contractor' Excel Tab.
12	CFP 4.3	Teaming	With regards to the Concept Papers due May 6, would the paper cover a single entity or the entire team for the program?	The Concept papers may cover the entire team for the program.
13	CFP Appendix B (table 8) and C.17	Submission Requirements	Can you please provide any guidelines for letters of support from potential non-participating entities? What is the deadline to submit them and when are they supposed to be sent in (concept paper stage or full proposal phase)?	*Letters of Support* are not required as part of the SMAP Full Proposal Submission. However, *Letters of Commitment* are required from each proposed Subawardee. Please refer to SMAP CFP Appendix C – C.17 for Letters of Commitment guidance. Letters should be submitted with the full proposal submission. Concept papers should not include Letters of Commitment.
14	CFP 4.3	Submission Requirements	Do we have to have the full scope of our team if we were to submit our concept paper deadline next week? Or can we submit the technical concept paper and then come back with full proposal a more detailed team scope?	Full scope is not required at concept paper submission. It is understood that a proposer's team may change between submission of the concept paper and the full proposal submission.
15	CFP Appendix C.15	Eligibility	If we are a participant in a similar and parallel program in another CRDO program, is there a conflict of funding there?	Please refer to SMAP CFP Appendix C, Section C.15
16	CFP 1.3	Goals and Outcomes	Please define what would make the memory novel enough? Materials, architecture, integration, density, power, ...?	The premise of SMAP is to explore new memory technologies integrated with traditional memories (such as SRAM, DRAM and flash) to bring significant performance

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				boosts and energy efficiency. All the relevant metrics related to that are in the scope.
17	CFP 4.1	General Information	How quickly will we receive feedback on the concept paper before the full proposal is due?	Proposers will receive feedback on concept papers within 14 days after the concept due date.
18	CFP 4.3	Teaming	Can one PI or Co-PI be in multiple teams? Can a small software company participate in multiple proposals?	A single entity may only submit a maximum of two (2) full proposal submissions (one to each Focus Area) as the lead proposer but may participate on more than two teams as subawardees or unfunded collaborators.
19	CFP 3.3, Appendix C.15	Eligibility	Can co-funding scenarios include DOC/Natcast with other US Govt agency programs?	Please disclose any concerns about Conflicts of Interest or Conflicts of Funding to the SMAP Program Staff and each will be addressed on a case-by-case basis. Please refer to SMAP CFP Appendix C, Section C.15.
20	CFP 1.4	Scope	Can the PPF capabilities be included in SMAP proposals? Perhaps the timelines don't line up?	Proposals should include currently available capabilities.
21	CFP 4.0	Submission Requirements	Does each concept paper need to be complete in the Memory Packaging and Programming Model?	It is recommended they are complete to receive feedback. However, it is not a requirement for concept paper submission. Full proposal should address all the technology areas.
22	CFP Appendix B	Submission Requirements	Is a formal budget and coordination among sponsor office of the institutions required for the concept paper or estimate budget by the lead PI is enough?	A formal budget workbook is not required for the concept paper. The concept paper should provide a high-level estimated budget breakdown per phase. (See Appendix B of the CFP).
23	CFP 1.4	Scope	Can the memory solution itself be heterogeneous - some NVM some	Yes, this is in the scope of SMAP.

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			volatile some fast some slow - in the same defined array?	
24	CFP 1.4	General	Why separate edge from datacenter, when the underlying problems are almost identical?	Architectures, workloads, expertise and trade-off analysis metrics are different for data center and edge systems. If a proposer has architecture and workloads that scale across edge and data center, they can submit proposals for both focus areas utilizing the re-use.
25	CFP 1.4	General	Technology areas - do they have to be combined? Or are they separate areas all under improving memory?	Please refer to SMAP CFP Section 1.4 Scope: Each proposal must cover all three Technology Areas. All the technology areas should be addressed in solution proposed.
26	CFP 1.4	Scope	Can a concept paper for Data Center focus on just the programming model?	It is advised that the concept paper address all technology areas. It is not required to address all areas for concept paper submissions. Concept papers can be submitted with single area to receive feedback. However, according to the SMAP CFP Section 1.4 Scope: Each proposal must cover all three Technology Areas.
27	CFP 1.4	Scope	Are the proposers expected to select one promising memory device for the proposal, or to be memory-agnostic and evaluate different memories in the framework?	Proposers can select multiple new memory technologies in the architecture evaluation and framework development.
28	CFP 1.4	Scope	For baseline hardware, is commercialized hardware systems, such as NVIDIA edge computers, considered appropriate baseline for AI inference?	Yes

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29	CFP 1.4, 1.7, 1.8	Scope / Deliverables / Metrics	What are the expected outcomes? Do we need to produce a physical chip prototype as a result of the project?	SMAP outcomes and deliverables are described in the CFP. This first research program is an architecture study and there is no development of physical chip.
30	CFP 1.4	Scope	Is a single system-in-package that combines multiple different 3D stacks on the same silicon interposer in scope?	Yes
31	CFP 1.4	Scope	The increasing cyber-insecurity jeopardizes data at rest & in transit. Efficient cryptography means are required to protect these assets. Could it be included?	Submit a concept paper for feedback on specific scope or technology details. However, the proposal should address all the Technical Areas described in the CFP.
32	CFP 4.0	Submission Requirements	Will there be enough time to address the May 20 feedback after the May 6 concept submission for full proposal due in June?	The full proposal submission is due by June 17, 2025.
33	CFP 4.3	Teaming	Does each team need industrial partner?	No, it is not a requirement, you could submit a proposal on your own. However, it is highly encouraged.
34	CFP 3.0	Eligibility	Can one of the collaborating organizations be changed to the lead institution after the concept paper has been submitted?	Yes. You may need to reach out to the SPAM@natcast.org to assist in updating lead institution within the submission portal, but you are allowed to update the team prior to full submission.
35	CFP 1.4	Scope	Are proposals required to integrate a "new" memory technology, or are traditional memory technologies in scope? What constitutes a "new" memory technology?	Traditional memories are in scope only in Phase 1 of the program. The proposal should integrate new memory technologies in addition to traditional memory technologies. New memory devices are defined as memory devices that utilize new bit-cell technology other than those used in SRAM, DRAM and Flash and demonstrated to be TRL>=3 phase.

36	CFP Appendix B	Submission requirements	As an academic institution, when submitting the concept paper, is it sufficient to identify potential collaborators or we must have a collab in place?	Proposers do not need to have collaboration in place when submitting a concept paper.
37	CFP 1.4	Scope	Do you require prototyping and tape out of the hardware after advanced packaging? Or are you expecting primarily modeling and architecture simulations?	No, SMAP is not scoped to do any prototyping and tape out. Yes, we are expecting primarily modeling and architecture simulations.
38	CFP 1.4	Scope	Will this program support research on new materials and devices for new memory technology?	SMAP scope includes integration of new memory device technologies into system design. New materials and devices research are not in scope.
39	CFP 1.4	Scope	For Baseline 1, is a commercialized product preferred, or are architectural models of existing technology acceptable?	A commercial product is recommended but proposers can choose any reference hardware model.
40	CFP 1.4	Scope	Is the modeling and simulator supposed to work for multiple workloads or just for a single application domain?	It is highly recommended that the modeling framework is extendable to other workloads, but it is not required.
41	CFP 1.4	Scope	Will SMAP encourage topics focused on dielets hetero integration to include UWB technologies such as SiC, diamond, or new platforms beyond Si?	Proposers can submit a concept paper in order to receive proposal specific feedback. However, Technology Areas are described in the SMAP CFP.
42	CFP 1.4	Scope	Should we assume our hardware can only use existing memory device prototype characteristics, or can we project future characteristics with successful scaling?	Proposal should use existing/ demonstrated characteristics for the performance analysis. Trade-Space analysis can include the successful scaling aspects and their impact.

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43	N/A	Misc.	How does this advanced packaging work relate to NAPMP?	SMAP focus is on investigation of system architectures utilizing advanced packaging technologies to overcome memory wall challenge. NAPMP is focusing on physical aspects of advanced packaging (NAPMP Nofo 2) Both efforts are complementary and synergistic.
44	CFP 1.4	Scope	For advanced packaging, is the main focus on modeling and benchmarking the proposed system? How will programming model play a role here? Can you give an example where packaging connects to Programming model?	Yes, for advanced packaging, the main focus is modeling and benchmarking. Advanced packaging enables higher integration, performance and modularity. This shift requires programming models to evolve, supporting heterogenous, high-bandwidth, and system-level optimized designs. Software must become aware of the hardware topology, memory hierarchies and resource management to fully exploit the benefits of advanced packaging, while new abstraction and tools are needed to manage the increased complexity. As an example, L2 memory could be generic memory hierarchy in the processor architecture, but they could have different performance characteristics (latency, energy) depending on where it is placed in the hardware topology. It could co-exist within compute, on interposer, on a chiplet or across all of them. It is crucial that Programming model aware of the physical topology to manage and exploit advanced packaging aspects for efficient system designs.
45	CFP 1.4	Scope	Thermal modeling seems to be included, could you please expand a bit on the expectations?	Thermal modeling is included as a stretch goal in the CFP. Minimum expectation is to include objective assessment of thermal management in the context of system study.
46	CFP 2.5	IP Terms	What terms in the CFP (e.g., publication pre-approval, IP ownership) are flexible, and which are absolute musts?	Please refer to CFP 2.5.1.

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47	CFP 2.5	IP Terms	What are "march in rights"?	March in rights" under the Bayh-Dohl Act do not apply to Natcast's SMAP program or Natcast's other research programs. For federally funded programs that are subject to the Bayh-Dohl Act, which is not the case here, "march-in rights" allow the government to grant a compulsory license on privately owned patents to third parties, if the patented invention was developed with government funding and certain statutory criteria apply.
48	CFP 3.5	Foreign Collaborations	What happens if someone is an employee of a US company but they are in an office that is outside the US (such as the UK). Where would they fall in the categorization [under Foreign Collaboration and Overseas Activities]?	Foreign citizens can participate in the research if they bring unique resources or skills. Proposers must appeal in writing to the SMAP Program Staff for exceptions. Please refer to SMAP CFP Section 3.5 for further guidance. Additionally, there must be significant presence in the US for that entity.
49	CFP 3.0	Eligibility	Does the Eligibility of funded organizations apply to National Labs?	National Labs are able to apply but would need to be a member of the NSTC. They can submit a full proposal.

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