

S²MARTS 22-16 Microelectronic Commons November 9, 2022 Awareness Day Questions

1 When will the RFS be released?

The RFS is anticipated to be released within two weeks.

2 Will funding be available to enhance existing successful facilities and to broaden their reach?

Yes. Capabilities augmentation such as upgrades and/or new infrastructure will be considered. The success criteria for Microelectronics Commons Regional Hubs will include identification and development of required resources for Hub members' access to specialized lab-to-fab equipment.

3 Can FFRDCs propose for this opportunity?

An FFRDC may not respond directly to the RFS as a Hub Leader. An FFRDC may participate as a partner member to one or more Regional Hubs.

4 Is an NSTXL membership required to respond to the RFS? If so, membership for the prime or for all team members?

Only the Hub Lead must be a member of NSTXL and fees are dependent on entity type and size.

5 What role will the DoD service labs (NRL, AFRL, ARL) and other DoD research agencies play as performers (not reviewers or evaluators) in the ME Commons?

DoD service labs may participate as a partner member to one or more Regional Hubs.

6 Can proposers join hubs outside of their region?

A hub is a network of regional entities with lab prototyping capabilities and sources of Microelectronics talent for onshore, lab-to-fab transition of semiconductor technologies—including Department of Defense-unique applications—and semiconductor workforce training. With regards to Hub composition, the technical capability of the Hub is the priority. Hubs have the flexibility to bring in members from any region to be successful in their lab-to-fab efforts. The goal of the Commons is to connect regional organizations through the Hub to accelerate lab-to-fab prototyping based on proximity and to strengthen local economies through a workforce that supports those regions. Achieving that goal may require capabilities external to a Region; i.e., it is not expected that Regional Hubs can be fully self-contained.

7 Regarding hubs supporting “one or more” applications—will proposed hubs that support more than one application score higher than those that specialize?

No.

8 Will an attendance list be shared with amongst attendees?

Individual companies can request a teaming list utilizing the link in the slide deck. Go to NSTXL.org, Go to Microelectronics Commons, download the slide deck. Click teaming list request in the slide deck to request the teaming list data.

9 Can you please provide a definition of “Valley of Death”?

The Valley of Death refers to the gap between innovative research ideas and product. There is typically a lack of funding for technology maturation efforts, particularly for technology that is at too early a stage for stakeholders to support such as venture capital.

10 How will the microelectronics common interface with existing initiatives such as the NNCI (National Nanotechnology Coordinated Infrastructure) and NIST Nanofab?

Regional innovation Hubs will identify all regional and national resources that they will leverage. It is expected that existing resources will complement Regional Hub activities and/or be leveraged by Regional Hubs to successfully establish a vibrant regional lab-to-fab ecosystem.

11 Are the cores directly funded by the Commons or are they supported solely by a fee for service from the Hubs ?

Cores may be hub members or hub leads. Cores may also be accessed by a fee for service agreement. Hubs will designate which mechanism(s) they will use.

12 how is this different from the current MOSIS <https://themosisservice.com/> capabilities?

We will not directly comment on other services or organizations. It is expected that existing resources across the regions and/or nation will be leveraged. Commons is intended to enable the establishment of vibrant, regional, lab-to-fab ecosystems. Multi-project wafer arrangements may be leveraged; however, they are not sufficient to achieve the broad scope of microelectronics prototyping that Commons aims to achieve.

13 Is there a funding opportunity for fundamental research that looks into the material level properties?

Activities executed within Microelectronics Commons shall primarily fall under Budget Activity 3. Although activities that fall under Budget Activities 2 and 4 will also be supported if they are in support of the lab-to-fab prototype. Fundamental research is not included within Commons.

14 What is the evaluation criteria for selecting hubs and cores?

Success criteria will be provided in the RFS.



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15 In what roles will DoD FFRDCs be allowed to participate?

An FFRDC may participate as a partner member to one or more Regional Hubs. The role of the FFRDC will be determined by the Hub Leader.

16 Can you please clarify the scope of “commercial leap-ahead technologies?”

Commercial leap ahead technologies are innovative technologies in which the commercial industry has little to no *current* business interests that warrant their investment. These leap ahead technologies fall under one of two categories: 1) technologies that provide revolutionary capabilities, and 2) designs of systems that allow us to insert new technologies that will yield dramatically new capabilities. The RFS will include further guidance. Gallium Arsenide technologies, more than 15 years ago, are often held as an example of a commercial leap ahead technology.

17 What is “commercial leap ahead technology”? Can you give some examples?

Commercial leap ahead technologies are innovative technologies in which the commercial industry has little to no current business interests that warrant their investment. These leap ahead technologies fall under one of two categories: 1) technologies that provide revolutionary capabilities, and 2) designs of systems that allow us to insert new technologies that will yield dramatically new capabilities. The RFS will include further guidance. Gallium Arsenide technologies, more than 15 years ago, are often held as an example of a commercial leap ahead technology.

18 what criteria will be used to determine the location of the 9 regional hubs?

Success criteria will be provided in the RFS.

19 Where will designs for prototypes come from?

Hubs will propose prototype projects based on the Technical Guidance in the RFS and identify all resources needed to execute those projects.

20 How is microelectronics validation/production test technology contemplated as a part of this effort? Thank you.

The hubs will propose a model to produce a lab-to-fab ecosystem. Subsequently, hubs will propose projects for which all resources needed for prototyping will be identified.

21 Is Rad-Hard by Design Toolkit included in this like <https://www.draper.com/explore-solutions/rad-hard-design> ?

We will not directly comment on other services or organizations. It is expected that existing resources across the regions and/or nation will be leveraged. Commons is intended to enable the establishment of vibrant, regional, lab-to-fab ecosystems. Existing and new resources that are needed to accomplish that end-state will be identified by hubs within their proposals.

22 Would proposals that address common needs of all/most COEs be considered? Example: Secure IP Management.

Yes.

23 It appears regional proximity is more important than formation of hubs that are coherent with regard to a specific application area or technology. Is this fair?

The technical capability/capabilities of a Hub is/are the priority. A hub is a network of regional entities with lab prototyping capabilities and sources of Microelectronics talent for onshore, lab-to-fab transition of semiconductor technologies—including Department of Defense-unique applications—and semiconductor workforce training. With regards to Hub composition, the technical capability of the Hub is the priority. Hubs have the flexibility to bring in members from any region to be successful in their lab-to-fab efforts. The goal of the Commons is to connect regional organizations through the Hub to accelerate lab-to-fab prototyping based on proximity and to strengthen local economies through a workforce that supports those regions. Achieving that goal may require capabilities external to a Region; i.e., it is not expected that Regional Hubs can be fully self-contained.

24 Can non-US organizations participate in hubs or cores? For example, NATO, FVEY, Quad, .. ?

Specific foreign national restrictions will be indicated in the RFS.

25 Is a regional hub one entity or multiple entities?

A regional Hub is a network of entities/organizations that may be primarily regional entities; however, there are no restrictions on entities/organizations from any U.S. region joining any Hub in the U.S. The technical capability/capabilities of a Hub is/are the priority.

26 What is the plan to encourage companies not typically interested in DOD opportunities to join this project? Who is not in the room?

The Other Transition Agreement process is set up specifically to support non-traditional and start ups. Please reach out the membership@nstxl.org for specific questions.



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27 What will the mechanism be for interested core facilities to bid on fee for service agreements?

Cores will have three mechanisms to engage through Commons; 1) Hub Lead, 2) Hub Member, 3) Solely fee-for-service. NSTXL will facilitate information sessions for potential Hub proposers for Cores to communicate their fee-for-service structures. If Cores submit a proposal as a Hub Lead, they must meet all success criteria that will be listed in the RFS to develop a vibrant, regional, lab-to-fab ecosystem. If Cores participate as a Hub Member, the Hub Lead will define the specifics of their Hub role within the Hub model.

28 Do the core facilities need to be in the same region as the hubs proposed?

It is expected that hubs may have to access core capabilities that are external to their region.

29 How will startup companies get connected to the right hub consortium lead?

NSTXL will host events to facilitate teaming.

30 How can Core facilities advertise their prototyping services to the hubs for which they are not members?

NSTXL will host events to facilitate teaming.

31 How will Commons interact with NSTC facilities?

As critical components that support the whole-of-government effort to sustain and advance U.S. leadership in microelectronics, DOC and DoD are working to build dynamic coordination mechanisms that provide agility and synergy that would not result if operated separately. With a focus on customer engagement, the NSTC and NAPMP programs will provide an alternative for Commons programs that need higher TRL and MRL support prior to volume production. Alternatively, customers for NSTC and NAPMP who are developing warfighter related technology would be able to leverage Commons infrastructure. There is also the promise of leveraging technology from both DOC and DoD programs to produce both new commercial and new warfighter technologies. For these reasons, efforts will be carefully coordinated to facilitate access models for participants and maximize the benefit for the broader microelectronics R&D ecosystem.

32 Does the RFI include potential research into manufacturing processes and equipment, since Fabs are so dependent upon such technologies?

The RFS will include success criteria and technical guidance.

33 Can universities apply as a hub lead (facilitating a team of regional partners with prototyping capabilities)?

Yes.

34 Will fabrication companies that are not U.S. based, but have U.S. fabrication facilities be allowed to participate?

Specific restrictions regarding foreign-owned businesses will be listed in the RFS.

35 What technologies cover the commercial leap ahead technologies? Would you please provide a few examples? Is additive manufacturing within this category?

Commercial leap ahead technologies are innovative technologies in which the commercial industry has little to no current business interests that warrant their investment. These leap ahead technologies fall under one of two categories: 1) technologies that provide revolutionary capabilities, and 2) designs of systems that allow us to insert new technologies that will yield dramatically new capabilities. The RFS will include further technical guidance. Gallium Arsenide technologies, more than 15 years ago, are often held as an example of a commercial leap ahead technology.

36 Must each regional Hub or Core submission be led by a non-profit organization? Will firms or academic institutions be eligible to lead a Hub or Core submission?

Hubs, which may include cores as hub members or hub leads, do not have to be led by a non-profit organization. Any entity that is eligible for participation in Commons may be a Hub Lead (e.g., firm, university, etc.).

37 Is there any requirement for who should lead the hub? For example, could it be University or National Lab or Business?

The requirement for a hub lead is that they are an eligible entity. Eligibility will be indicated in the RFS.

38 What are the fees/costs for a company to utilize a Hub to help with new product innovation, design and prototyping?

Fee structures are to be determined by the hub as well as an access model.



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39 **How will the ME Commons differ from the NTSC?**

As part of the CHIPS investments, the Microelectronics Commons and NSTC are complimentary programs addressing the critical shortfall of domestic prototyping capabilities. The NSTC is establishing facilities and programs that grow domestic capacity, and capability for US commercial markets in leading edge CMOS, heterogeneous integration, and non-CMOS technologies. Microelectronics Commons is focused on establishing a national network for onshore, microelectronics hardware prototyping, to accelerate lab-to-fab transition of semiconductor technologies across a set of critical defense and dual use-commercial applications.

40 **When will the RFS be release? Will there be one RFS for hubs and cores, or will they be separate?**

The RFS is anticipated to be released within two weeks. Hub awards will be awarded first. Importantly, Hub models will include Core engagement (lead, member, or fee-for-service). There will not be a separate call for Hubs and Cores; again, Core engagements will be a part of the Hub model. Cores will have three mechanisms to engage through Commons; 1) Hub Lead, 2) Hub Member, 3) Solely fee-for-service. NSTXL will facilitate information sessions for potential Hub proposers for Cores to communicate their fee-for-service structures. If Cores submit a proposal as a Hub Lead, they must meet all success criteria that will be listed in the RFS to develop a vibrant, regional, lab-to-fab ecosystem.

41 **Can you say more about the relationship between the hubs and the projects/prototypes? Will the hubs propose projects to the ? Will there be separate calls?**

Following Hub selection, prototype projects that the Hubs will execute will be competitively selected. Annually, a separate call for projects will be issued to Hubs for these prototype project awards. These projects will 1) support operational expenditures such as tooling maintenance and staff, 2) support additional infrastructure needed for successful prototyping as the Hubs mature, 3) facilitate capacity increase of existing infrastructure through, for example, support for required staffing, 4) develop talent and technologies in parallel, and 5) provide challenges for Hubs and Cores to collaboratively solve incentivizing the collaboration required for Cores to better align Hubs with commercial processes to facilitate transition of technologies. The latter of which will enable Hubs to better support the broader base of researchers and designers.

42 **Would a Hub that was physically broader than a few states be acceptable? A broad range of technical capabilities are required in many cases.**

Yes. With regards to Hub composition, the technical capability of the Hub is the priority. Hubs have the flexibility to bring in members from any region to be successful in their lab-to-fab efforts. The goal of the Commons is to connect regional organizations through the Hub to accelerate lab-to-fab prototyping based on proximity and to strengthen local economies through a workforce that supports those regions. Achieving that goal may require capabilities external to a Region; i.e., it is not expected that Regional Hubs can be fully self-contained.

43 **Are there minimum capacities that are required for a hub?**

There is no single capacity requirement across all hubs. Rather, hubs are expected to identify current capability and capacity for microelectronics prototyping as well as other capability and capacity needs, if current capability and capacity are not sufficient, to successfully achieved prototype projects that they propose.

44 **Is there an upper limit to the number of areas that a hub can participate in?**

No.

45 **How can S2MARTS support early-stage startups?**

The Other Transition Agreement process is set up specifically to support non-traditional and start ups. Please reach out the membership@nstxl.org for specific questions.

46 **Will a cost-reimbursement OTA be possible?**

The Request For Solutions (RFS) will provide the type of pricing that is preferred for this effort.

47 **How will IP be governed in Commons partnerships ?**

IP will be negotiated on a per project basis.

48 **Is quantum technology design and/or fabrication addressed directly or only microelectronics for quantum technologies?**

The RFS will include technical guidance.

49 **What's being considered specifically for life sciences industries: biofabrication, biomanufacturing?**

The RFS will include technical guidance.



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- 50 **Are fabs specializing in materials other than silicon (e.g., gallium nitride) excluded from this effort?**
No.
- 51 **How is Microelectronics Commons different from DARPA's proposed NGMM program and the Commerce's proposed new Manufacturing USA semiconductor institutes?**
DARPA's Next-Generation Microelectronics Manufacturing (NGMM) program is focused on disruptive 3DHI (3-Dimensional Heterogeneous Integration) technologies including design, packaging, assembly, and testing for future microelectronics technologies. Microelectronics Commons is more broadly focused on establishing a national network for onshore, microelectronics hardware prototyping, to accelerate lab-to-fab transition of semiconductor technologies across a set of critical defense and dual use-commercial applications. Commerce's new Mfg USA and NIST Metrology programs support commercial industry with manufacturing solutions and characterization methods for growth of domestic capacity, and capability for the US commercial market.
- 52 **How does the microelectronics commons interact with Department of Commerce programs established under the CHIPS Act?**
As critical components that support the whole-of-government effort to sustain and advance U.S. leadership in microelectronics, DOC and DoD are working to build dynamic coordination mechanisms that provide agility and synergy that would not result if operated separately. With a focus on customer engagement, the NSTC and NAPMP programs will provide an alternative for Commons programs that need higher TRL and MRL support prior to volume production. Alternatively, customers for NSTC and NAPMP who are developing warfighter related technology would be able to leverage Commons infrastructure. There is also the promise of leveraging technology from both DOC and DoD programs to produce both new commercial and new warfighter technologies. For these reasons, efforts will be carefully coordinated to facilitate access models for participants and maximize the benefit for the broader microelectronics R&D ecosystem.
- 53 **Will university research be funded by the Commons? Most university research is at TRL 1-2.**
Activities executed within Microelectronics Commons shall primarily fall under Budget Activity 3. Although activities that fall under Budget Activities 2 and 4 will also be supported if they are in support of the lab-to-fab prototype. Fundamental research is not included within Commons.
- 54 **Will there be expectations for cost share? If so, will they vary based on the entity (large business, small business, nonprofit, etc)?**
There will not be specific cost share requirements. However, hubs will have to propose a plan to become financially sustainable without continued direct DoD investments over the 60 month execution period; that is, hubs must establish a plan for transition from DoD support at the end of the Commons to a fully self-supporting model that includes supporting operation and maintenance costs.
- 55 **Are research or education collaborations with International Universities allowed or encouraged ?**
Specific foreign national restrictions will be indicated in the RFS.
- 56 **How can government facilities and laboratories participate or submit proposals?**
Government entities may not respond directly to the RFS as a Hub Leader. Government entities may participate as a partner member to one or more Regional Hubs.
- 57 **Given a separate project call in FY23, what will be required in the Regional Innovation Hubs proposals?**
Success criteria will be indicated in the RFS. The end-state goal is to develop a national network of regional innovation hubs and core facilities distributed across the U.S. that will reduce barriers to innovation, mature emerging microelectronics technologies, enhance existing microelectronics infrastructure, and foster a pipeline of domestic talent and innovative ideas.
- 58 **Please describe/explain in more detail what you mean by "Valley of death"**
The Valley of Death refers to the gap between innovative research ideas and product. There is typically a lack of funding for technology maturation efforts, particularly for technology that is at too early a stage for stakeholders to support such as venture capital.
- 59 **Why are we limiting collaborations to regional geographical boundaries?**
The technical capability/capabilities of a Hub is the priority. We are not limiting collaborations to geographical boundaries; it is anticipated that other entities may need to be part of the Hub in order for the Regional Hub to be successful.



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60 Will there be one request for 5-years, or will the request come in Phases?

There will be one request for Regional Hubs. Hub awards will be awarded first. Subsequently, there will be a call for projects for which only the Hubs may propose. Initial technical guidance will be provided in the RFS. Future technical guidance will be provided and will be derived from Hub recommendations. Projects will 1) support operational expenditures such as tooling maintenance and staff, 2) support additional infrastructure needed for successful prototyping as the Hubs mature, 3) facilitate capacity increase of existing infrastructure through, for example, support for required staffing, 4) develop talent and technologies in parallel, and 5) provide challenges for Hubs and Cores to collaboratively solve incentivizing the collaboration required for Cores to better align Hubs with commercial processes to facilitate transition of technologies. The latter of which will enable Hubs to better support the broader base of researchers and designers. The deadline (time requirements) will be provided in the RFS.

61 Can regional Hubs work (propose) together to span the TRL 3-7, or does each Hub need to have the full TRL 3-7 capabilities?

It is expected that prototypes proposed by the Hubs may span a range of TRLs (across 3-7), for example, a prototype project may begin at TRL 3 while another prototype project may begin at TRL 4, etc. A hub is a network of regional entities with lab prototyping capabilities and sources of Microelectronics talent for onshore, lab-to-fab transition of semiconductor technologies and semiconductor workforce training. A Region may span more than one State. For example, entities from adjacent States may need to be part of the Hub in order for the Regional Hub to be successful.

62 Can a facility like a National Lab with characterization and system scaling capability be considered for a core facility?

Yes, if they meet the definition of a Core. Regardless of meeting the definition of a Core or not, USG labs and their personnel may participate as a partner member to one or more Regional Hubs.

63 What kind of, if any, technical infrastructure will NSTXL provide across all the hubs?

Infrastructure (physical, digital, and human) will be supported through Commons. For example, capabilities augmentation such as upgrades and/or new infrastructure will be considered. The success criteria for Microelectronics Commons Regional Hubs will include identification and development of required resources for Hub members' access to specialized lab-to-fab equipment.

64 Will R&D of manufacturing equipment be part of the RFI?

Technical guidance will be provided in the RFS.

65 Are DoD laboratories and their personnel allowed to participate in the HUB teams and work on those projects?

DoD service labs and their personnel may participate as a partner member to one or more Regional Hubs.

How are projects and prototype demonstrations proposed? Do the hubs propose them? Does the Government request for proposals or solutions to be competed by Hubs?

66

Hub awards will be awarded first. Subsequently, there will be a call for projects. Initial technical guidance will be provided in the RFS. Future technical guidance will be provided by the DoD and will be derived from Hub recommendations. Projects will 1) support operational expenditures such as tooling maintenance and staff, 2) support additional infrastructure needed for successful prototyping as the Hubs mature, 3) facilitate capacity increase of existing infrastructure through, for example, support for required staffing, 4) develop talent and technologies in parallel, and 5) provide challenges for Hubs and Cores to collaboratively solve incentivizing the collaboration required for Cores to better align Hubs with commercial processes to facilitate transition of technologies. The latter of which will enable Hubs to better support the broader base of researchers and designers.

67 Does 'regional' mean geographically collocated ?

The technical capability/capabilities of a Hub is/are the priority. A hub is a network of regional entities with lab prototyping capabilities and sources of Microelectronics talent for onshore, lab-to-fab transition of semiconductor technologies—including Department of Defense-unique applications—and semiconductor workforce training. With regards to Hub composition, the technical capability of the Hub is the priority. Hubs have the flexibility to bring in members from any region to be successful in their lab-to-fab efforts. The goal of the Commons is to connect regional organizations through the Hub to accelerate lab-to-fab prototyping based on proximity and to strengthen local economies through a workforce that supports those regions. Achieving that goal may require capabilities external to a Region; i.e., it is not expected that Regional Hubs can be fully self-contained.

68 Will NSTXL consider cost reimbursable awards?

The Request For Solutions (RFS) will provide the type of pricing that is preferred for this effort.



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- 69 **Does the core facility have to be located physically in one location?**
Hubs may access more than one Core facility.
- 70 **Will hubs be awarded a management fee to run their hub, like a project/program management task order**
Hubs will detail all of the resources required in their proposal.
- 71 **Will the ME Commons program support obtaining new toolsets that can expand the capabilities of the existing hubs/cores**
Yes. Capabilities augmentation such as upgrades and/or new infrastructure will be considered. The success criteria for Microelectronics Commons Regional Hubs will include identification and development of required resources for Hub members' access to specialized lab-to-fab equipment.
- 72 **What is the process for DoD agencies to solicit funding for the Microelectronics Commons to develop prototypes?**
DoD agencies will not be soliciting funding. Rather, when a Hub puts forward a project proposal that includes a DoD agency, they will price that agency's participation in the project separately and those funds will be MIPR'd directly to the DoD agency, not through the Project Order award with NSTXL.
- 73 **After the Hub and Core system is setup, can you describe the flow for how a company would engage with, and make use of, Hubs and Cores to develop new products.**
Hubs will each develop their own access model.
- 74 **Will this recorded meeting be posted on the NSTXL website**
Yes, Go to NSTXL.org and click on the Microelectronics Commons opportunity. There you will find the recording at the bottom of the page.
- 75 **Can you explain how an FFRDC is GFE?**
An FFRDC may participate as a partner member to one or more Regional Hubs. The participation of an FFRDC is not GFE but its participation as a Hub member should be clearly indicated in the solution in response to the RFS.
- 76 **Why regional hubs instead of national hubs as there is no such thing as a regional microelectronics markets, there are industry segments markets?**
There are regional clusters of entities that coalesce around technology areas; these clusters are also known as a regional ecosystems. These ecosystems provide opportunities for coordination and collaboration which benefit industry, local communities, and national competitiveness. Note that the technical capability/capabilities of a Hub is/are the priority.
- 77 **How do hubs & cores relate to projects? Do projects come from hubs/cores only, or also from outside? How do projects relate to hubs/cores in time and funding?**
Hub awards will be awarded first. Importantly, Hub models will include Core engagement (lead, member, or fee-for-service). Subsequently, there will be a call for projects. Initial technical guidance will be provided in the RFS. Future technical guidance will be provided and will be derived from Hub recommendations. Projects will 1) support operational expenditures such as tooling maintenance and staff, 2) support additional infrastructure needed for successful prototyping as the Hubs mature, 3) facilitate capacity increase of existing infrastructure through, for example, support for required staffing, 4) develop talent and technologies in parallel, and 5) provide challenges for Hubs and Cores to collaboratively solve incentivizing the collaboration required for Cores to better align Hubs with commercial processes to facilitate transition of technologies. The latter of which will enable Hubs to better support the broader base of researchers and designers. The deadline (time requirements) will be provided in the RFS.
- 78 **Are Photonics devices/applications included for consideration within the designated application areas?**
Technical guidance will be provided in the RFS.
- 79 **Why are hubs not organized around a specific application? It seems unlikely that hubs without an applications focus will have coverage gaps.**
Hubs are organized around specific technology areas.
- 80 **Will there be a guidance for university students and researchers regarding their citizenship when participating in the projects?**
Foreign participation is anticipated; specific foreign national restrictions will be indicated in the RFS.
- 81 **How will ME Commons facilitate a pipeline for ME designs for rapid prototyping and transition?**
Commons will support infrastructure (physical, digital, and human) and incentivize the collaboration required for Cores to better align Hubs with commercial processes to facilitate transition of technologies, which will enable Hubs to better support the broader base of researchers and designers.
- 82 **If gallium arsenide would count as commercial leap ahead technology, does that mean the scope is not limited to silicon CMOS facilities?**
Correct; Commons is not limited to silicon CMOS facilities.



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83 Do hub and core proposals require a business case beyond the funded 60 months?

Commons is intended to endure beyond the 60 month support of the DoD. Hubs will have to propose a plan to become financially sustainable without continued direct DoD investments over the 60 month execution period; that is, hubs must establish a plan for transition from DoD support at the end of the Commons to a fully self-supporting model that includes supporting operation and maintenance costs (e.g., can support the recurring costs associated with their Hub infrastructure).

84 What are the guidance for budget proportion for facility augmentation vs research project implementation?

Physical infrastructure needs will vary across hubs. Hubs are required to identify their infrastructure needs as well as needs such as operational expenditures, which may be offset by projects. Projects will 1) support operational expenditures such as tooling maintenance and staff, 2) support additional infrastructure needed for successful prototyping as the Hubs mature, 3) facilitate capacity increase of existing infrastructure through, for example, support for required staffing, 4) develop talent and technologies in parallel, and 5) provide challenges for Hubs and Cores to collaboratively solve incentivizing the collaboration required for Cores to better align Hubs with commercial processes to facilitate transition of technologies. The latter of which will enable Hubs to better support the broader base of researchers and designers.

85 What will be the response time for the RFS?

90 days and any change will be noted in the official RFS.

86 Is there funding available through the Microelectronics Commons for DoD agencies to solicit prototypes in 1 of the 6 areas?

The Commons is not a vehicle for the DoD agencies to solicit prototypes from industry within the 6 areas identified. DoD priorities will be determined by the DoD Advisory Board.

87 Can you clarify that DoD labs are limited to providing only GFE? DoD labs cannot be funded performers in a hub, correct?

DoD Labs may not respond directly to the RFS as a Hub Leader. DoD Labs may participate as a partner member to one or more Regional Hubs. The role of the DoD Lab will be determined by the Hub Leader.

88 Is the common open to this new additive manufacturing that could lower the cost of heterogeneous integration by 10-20x?

Technical guidance will be provided in the RFS.

89 Can you discuss the difference between this and National Semi-Conductor Technical Center NSTC under the CHIPS act

As part of the CHIPS investments, the Microelectronics Commons and NSTC are complimentary programs addressing the critical shortfall of domestic prototyping capabilities. The NSTC is establishing facilities and programs that grow domestic capacity, and capability for US commercial markets in leading edge CMOS, heterogeneous integration, and non-CMOS technologies. Microelectronics Commons is focused on establishing a national network for onshore, microelectronics hardware prototyping, to accelerate lab-to-fab transition of semiconductor technologies across a set of critical defense and dual use-commercial applications.

90 Will cored be selected before hubs are selected so hubs know what fab capability will be made available to them?

Hubs may choose any core that is willing to work with them. Cores will have three mechanisms to engage through Commons; 1) Hub Lead, 2) Hub Member, 3) Solely fee-for-service. NSTXL will facilitate information sessions for potential Hub proposers for Cores to communicate their fee-for-service structures. If Cores submit a proposal as a Hub Lead, they must meet all success criteria that will be listed in the RFS to develop a vibrant, regional, lab-to-fab ecosystem. If Cores participate as a Hub Member, the Hub Lead will define the specifics of their Hub role within the Hub model.

91 Participation by non-US universities and companies?

Specific foreign national restrictions will be indicated in the RFS.

92 How will the work of the hubs and cores be coordinated through the whole ME Commons? Will there be a "central" technical governing body?

There will be a Microelectronics Commons Advisory Board, which will consist of representation from each hub and the broader stakeholder community and provide recommendations to the USG board.



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93 How will COMMONS activities be coordinated with DoC NSTC/NAPMP and DARPA ERI projects?

As critical components that support the whole-of-government effort to sustain and advance U.S. leadership in microelectronics, DOC and DoD are working to build dynamic coordination mechanisms that provide agility and synergy that would not result if operated separately. With a focus on customer engagement, the NSTC and NAPMP programs will provide an alternative for Commons programs that need higher TRL and MRL support prior to volume production. Alternatively, customers for NSTC and NAPMP who are developing warfighter related technology would be able to leverage Commons infrastructure. There is also the promise of leveraging technology from both DOC and DoD programs to produce both new commercial and new warfighter technologies. For these reasons, efforts will be carefully coordinated to facilitate access models for participants and maximize the benefit for the broader microelectronics R&D ecosystem.

94 Can a non-profit entity submit a response involving core facilities and distributed regional hubs

Eligibility criteria will be provided in the RFS. Any eligible entity may submit a proposal as the Hub Lead; the proposal will include detailing the roles and partnerships across the Hubs and between Hubs and Cores. It is noted again that Cores may be Hub Members or Hub Leads.

95 What are pitch days? How do we participate

Go to NSTXL.org and click on the Microelectronics Commons opportunity. There you will find out what a pitch day is and how to sign up.

96 When will proposal be due for the hubs and cores? Will they be due at the same time?

Only hub proposals will be requested. Hubs must engage with Cores. There will be three options for Cores to participate in Commons 1) Hub Lead, 2) Hub Member, or 3) fee for service agreement with Hubs.

97 Can you explain how a FFRDC is considered GFE

An FFRDC may participate as a partner member to one or more Regional Hubs. The participation of an FFRDC is not GFE but its participation as a Hub member should be clearly indicated in the solution in response to the RFS.

98 How long will the RFS proposal period last?

90 days.

99 Will hubs be awarded funds to manage their region (team)

Hubs will propose their hub model, which will describe the hub operation and how the success criteria, which will be identified in the RFS, will be met. If management funds are needed, they should be part of a hub's proposal.

100 When is the proposal window anticipated to close? We are coming up on the holidays...

90 days and any change will be noted in the official RFS.

101 Can a core facility include more than one organization as a split fab process?

Hubs may access more than one Core facility.

102 Does a core to have previously demonstrated prototypes up through TRL7?

The hub model will include the resources necessary for successful prototyping. If an additional Core will need to be accessed as the prototype matures into higher TRLs, that additional resource should be indicated in the Hub proposal.

103 Does the leap Technologies include tools to design and prototype advanced microelectronics

Technical guidance will be provided in the RFS.

104 Can there be more than 1 hub in a geographic area?

Yes.

105 Do commercial companies have to join a hub or core to gain access to the output of the “lab to fab” process? Who owns the IP?

Hubs will develop their own hub models that will include transition interactions. IP will be negotiated on a per project basis.

106 Will there be only 1 hub per technical area, or will there be allowed multiple hubs per technical area?

There may be more than 1 hub per technical area.

107 Are equipment manufacturers expected to be part of the hubs?

Any eligible entity may be a hub member. Eligibility will be provided in the RFS.



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108 **Please give examples of how will ME commons support workforce development.**

Hubs must include workforce development in their proposals.

109 **Please clarify: Do PIs and all other personnel need to be US Citizens or US Permanent residents?**

Specific foreign national restrictions will be indicated in the RFS.

110 **Do HUB proposals have to provide a connection to a Core-facility proposal? How to ensure processes/technologies in the HUBs can be transferred to Core facility?**

Yes. Cores may be hub members or hub leads. Hubs may also access Core facilities through fee for service agreements.

111 **How do you get the project ideas to be competed among hubs?**

The RFS will provide technical guidance.

112 **How many hubs are anticipated to be selected?**

Up to nine.

113 **Is advanced 3d IC heterogeneous packaging be included in leap technologies**

Technical guidance will be provided in the RFS.

114 **Who defines the projects the hubs will bid to ?**

Hubs will propose projects based on Technical Guidance provided in the RFS.

115 **slide links don't work in MS Teams**

Go to NSTXL.org and click on the Microelectronics Commons opportunity. There you will all the information required on the effort. You can download the slide deck.

116 **Where do we find those hyperlinks? Can't click on the MS Teams screenshare**

Go to NSTXL.org and click on the Microelectronics Commons opportunity. There you will all the information required on the effort. You can download the slide deck.

