

THE NATIONAL SEMICONDUCTOR TECHNOLOGY CENTER

Update to the Community

CHIPS Research and Development Office

November 16, 2022



INTRODUCTION

The CHIPS for America initiative will invest \$50 billion to supercharge the U.S. semiconductor industry and revitalize our innovation ecosystem. This funding includes \$11 billion for research and development—the focal point of which will be the National Semiconductor Technology Center (NSTC), an innovation hub that will advance semiconductor technology and seed new

industries built on the capabilities of a wide range of advanced chips.

The NSTC will be a public-private consortium that provides a platform where government, industry, customers, suppliers, educational institutions, entrepreneurs, workforce representatives, and investors converge to address the semiconductor ecosystem's most pressing challenges and opportunities.

National Semiconductor Technology Center Mission

Industries of the Future

Will welcome the participation of semiconductor users, device makers, designers, application and software product developers, and other market shapers to develop promising use cases to bring to commercialization.

Focal Point

Will have a core of centrally operated, in-house research, engineering, and program capabilities combined with a network of directly funded and affiliated entities that takes advantage of regional expertise and assets throughout the country. The NSTC also will serve as a key convening body for the ecosystem.

U.S. Leadership

Will work with allies to complement and reinforce existing research assets and capabilities, while strengthening and growing U.S. capacity.

The National
Semiconductor Technology
Center (NSTC) will serve as the
focal point for research and
engineering throughout the
semiconductor ecosystem,
advancing and enabling disruptive
innovation to provide
U.S. leadership in the
industries of the future.

Research and Engineering

Will work across a range of activities including applied research, start-up company support, prototyping of devices and processes in a real-world environment, challenges related to scaling, or development of advanced manufacturing tools and processes.

Disruptive Innovation

Will focus research and engineering on challenging projects with a time horizon beyond 5 years. NSTC will focus on delivering broad benefits to the U.S. semiconductor ecosystem, even when working with individual entities.

Advancing and Enabling

Will engage in and support research through collaboration, technical exchanges, convenings, and grant programs.

Semiconductor Ecosystem

Will work across the semiconductor technical stack and its supply chain, including design, materials, capital equipment, and facilities. The NSTC charter also extends to the broader community that supports and enables the industry, such as workforce and training institutions, capital providers, and semiconductor end users. Using a whole-of-government approach, and as specified by statute,* the NSTC will develop a comprehensive semiconductor research and development program that will include research, prototyping capabilities, an investment fund, and workforce development programs.

NSTC STRUCTURE

The NSTC will be a public-private consortium, as required by statute. The Department of Commerce (the "Department") anticipates the creation of an independent entity with NSTC leadership reporting to a governing board informed and advised by industry, academia, government, and key stakeholders. The U.S. government is developing further guidance regarding the governance structure but anticipates a structure that includes public interest directors both to ensure that public objectives are met and to provide accountability for spending taxpayer funds.

NSTC DEFINITION PROCESS

To inform the development of the NSTC, the Department has conducted and continues to conduct significant stakeholder engagement. The Department received more than 250 responses to a request for information (RFI) that included questions on the scope of the NSTC. Responses represented input from different sectors of the semiconductor supply chain including design software developers; integrated device manufacturers; materials suppliers and equipment vendors; fabless, automotive, industrial, and consumer companies; and academic institutions and organizations representing labor. In alignment with the RFI, the Department hosted 26 workshops and listening sessions with different parts of the semiconductor value chain. Two workshops specifically focused on the NSTC and the National Advanced Packaging and Manufacturing Program, drawing a combined 350 registrants. The Department also is considering the recommendations from the President's Council of Advisors on Science and Technology, public reports like one recently published by the Semiconductor Industry Association, and input from potential partners. The Department will continue to reach out to interested members of the community as plans are developed.

At present, the Department is engaged in four high-priority tasks:

- Evaluating potential gaps in research and engineering that could be filled by the NSTC. As part of the whole-of-government effort, the NSTC will complement the many excellent centers already established by industry, academia, allies, and other governmental agencies. The Department will create a preliminary landscape analysis with the benefit of recommendations developed by the CHIPS Industrial Advisory Committee. Ultimately, the NSTC itself will finalize the focus areas, but this early work will inform further decisions.
- Evaluating and defining a structure and governance model that fulfills the CHIPS for America goals of promoting U.S. economic and national security and protecting taxpayer investments while ensuring technical excellence and leadership.
- Creating a preliminary operating, business, and financial model that will serve as a road map for near-term investment informed by an understanding of what will be required for long-term sustainability.
- 4. Identifying a slate of candidates for the NSTC chief executive.

The Department will release a white paper in the first quarter of 2023 that will summarize the results of the landscape analysis, governance structure, and preliminary operating and financial model. At that time, the Department will issue guidance on when to expect requests for proposals.

CONCLUSION

The Biden-Harris Administration and a bipartisan group in Congress made the bold decision to establish a new and important public-private consortium that will benefit the country for generations to come. The Department will invest taxpayer funds deliberately and effectively to ensure the greatest potential impact for the U.S. economy and national security, and looks forward to working with the broader community to achieve this objective.

^{* 15} U.S.C. § 4656(c).