

## OUSD(R&E) Microelectronics Overview

Data and Metrics for the DOD SBIR and STTR Programs: A Workshop

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HTTPS://WWW.CTO.MIL

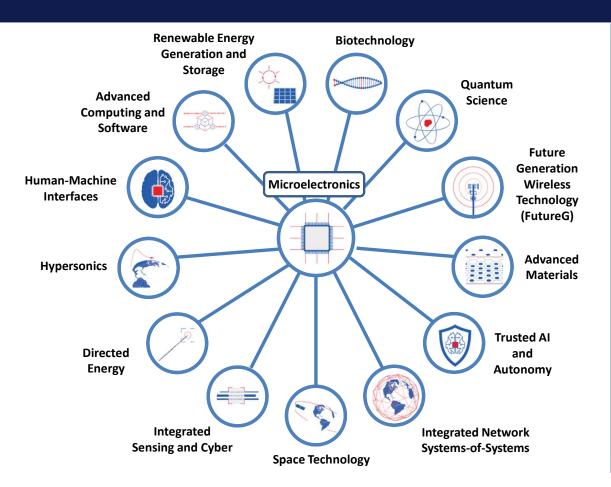






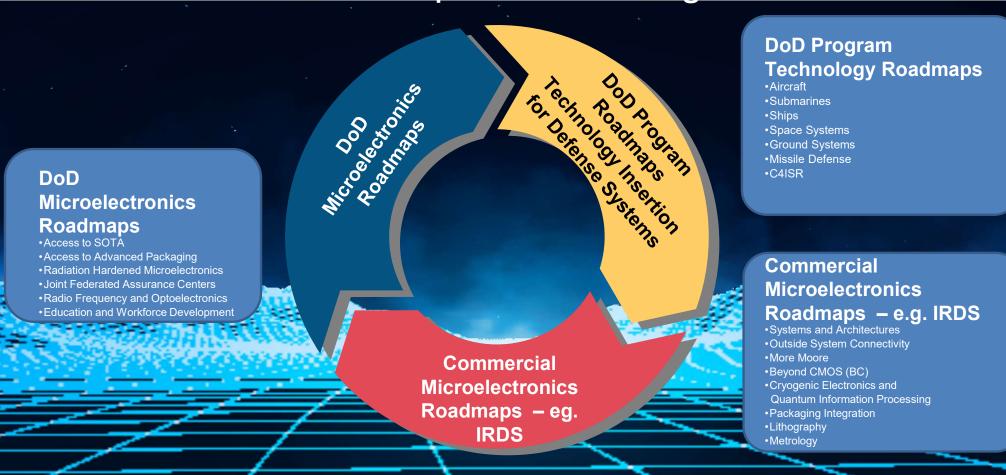


### CRITICAL TECHNOLOGY SYNERGIES: MICROELECTRONICS

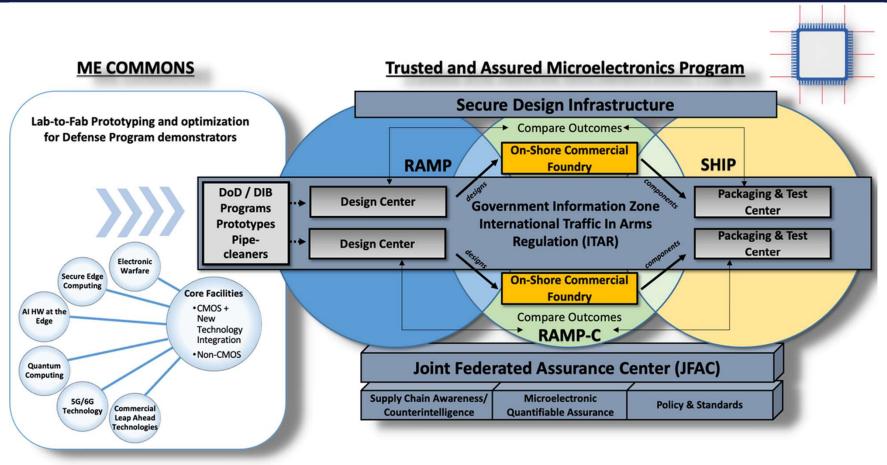




# Connecting Commercial Technology to DoD Microelectronics Roadmaps and Defense Programs



## **T&AM Program Enabling Access to State of the Art (SOTA)**





## **CHIPS Offers a Whole of Government Approach**



The NSTC and Microelectronics Commons will expand the number of concepts and ideas that can transition from proof-of-concept to the market.

#### **NSF** basic research

DMREF, RINGS, others

DOE basic/early-stage research

SC, NNSA, EERE, ARPA-E, others

**DOD** early stage

ERI 2.0, NGMM, SBIR, others

Other USG

Agency SBIR, NASA, NIH, others

**Private capital** 

**Commercial R&D** 

**International programs** 

#### **Microelectronics Commons**

Commercial technology with defense implications

#### **NSTC**

Broad support for commercial technologies

## USG scaling programs

NSF Fuse, DOE NNSA, other

Prototyping, scaling, and de-risking

Private capital

+ CHIPS Incentives

Commercial fabs, foundries

DARPA SHIP, DOD RAMP-C, DOE NNSA, others

#### **Transition to market**

A VISION AND STRATEGY FOR THE NATIONAL SEMICONDUCTOR TECHNOLOGY CENTER

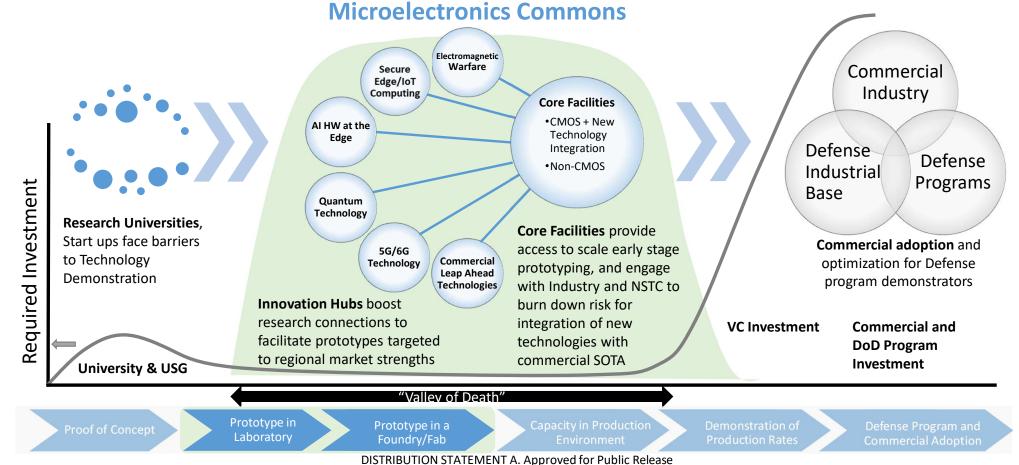
CHIPS Research and Development Office April 25, 2023

Discovery and proof of concept



## **Microelectronics Commons Addresses the Valley of Death**







## **Progression from Concept to Capabilities**





#### Microelectronics Commons

- Electromagnetic Warfare
- Secure Edge/IoT Computing
- AI HW at the Edge
- Quantum Technology
- Commercial Leap Ahead Technologies

#### **Commercial Dual Use Technologies**

- •Technologies sustained by commercial markets but optimized for DoD Needs
- Early access for DoD enables technology advantage for the warfighter
- Low cost, high reliability
- Leverages large commercial R&D budgets for continued innovation

#### **DoD Unique Technologies**

- •High Performance niche technologies not sustained by commercial market
- Applications for Rugged operation
- Enhanced Security
- •Low product volume ensures DoD control and protection of supply chain

#### **Application Platforms**

- Aircraft
- Ground
- Submarines
- Systems
- Ships
- MissileDefense
- Space

Systems

• C4ISR









Lab-to-fab prototyping bridges valley of death from laboratory research to foundry/fab prototyping