

Volume 2, Issue 4 Fourth Quarter, FY22

CLEARED
For Open Publication

Sep 27, 2022

Department of Defense
OFFICE OF PREPUBLICATION AND SECURITY REVIEW

SRHEC QUARTERLY

Strategic Radiation Hardened Electronics Council



The U.S. Government (USG) Strategic Radiation Hardened Electronics Council (SRHEC), a collaboration among the Department of Defense (DoD) and other USG stakeholders, was established to ensure continued access to Strategic Radiation Hardened (SRH) and Radiation Hardened (RH) electronics and the long-term viability of the domestic infrastructure that are critical to the Nation's security and defense.

SRHEC Principals Meeting

SRHEC held its latest Principals meeting on 2 June. The Principals met to decide priority and the way ahead for issues identified by SRHEC Working Groups and to receive updates on current SRHEC efforts.

The Council discussed issues derived from the SRHEC Technology & Development Gap Analysis, the importance of investing in the development of the RH microelectronics workforce, and updates needed for the SRHEC charter. The SRHEC Executive Secretariats are required to review the charter biennially and propose any necessary changes. Since the last

charter was signed in 2020, several changes have been identified to improve the efficiency, inclusiveness, and significance of the Council, which required approval from the Principal members.

Information was provided on Title III RH investments and the progress being made on the Joint Department of Energy (DOE)/DoD RH Microelectronics Classification Guide, which was last updated in 2017. A team of both technical and classification experts have been diligently working on the revisions. The revised document is expected to be ready for signature in the fall by both departments. Also,

as a result of the Principals meeting, the SRHEC Policy Working Group has been directed to develop recommendations for a long-term strategy to address Department-wide SRH/RH microelectronics needs. These recommendations are due by the end of the calendar year.



Special points of interest:

- Outcomes of the SRHEC Principals Meeting
- Signing of the CHIPS and Science Act
- QuickLogic Awarded Contract to Develop SRH FPGA Technology
- SkyWater Plans to Build Advanced Semiconductor Manufacturing Facility

Organization

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CHIPS and Science Act of 2022 Signed into Law

On 9 August, President Biden signed the Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act legislation providing over \$50B in investments for domestic on-shoring of facilities and equipment for semiconductor fabrication, assembly, testing, advanced packaging, and research and development. These investments strengthen US microelectronics manufacturing, innovation, and workforce capabilities to address competitiveness and national security for this "must-win" technology.

CHIPS establishes a whole-of-government approach authorizing Department of Commerce

(DOC), DoD, Department of State (DOS), and National Science Foundation (NSF) activities and coordination with inter-agency partners.

Defense systems including those requiring enhanced supply chain security and unique requirements including radiation hardness, will benefit from access to legacy, state of the art and disruptive semiconductor technologies within a strong domestic ecosystem.

Specifically, CHIPS provides \$39B to incentivize on shore manufacturing including \$2B of legacy technologies. Another \$13.2B supports R&D and workforce development activi-

ties. This includes \$2B to implement the Microelectronics Commons, a national network for onshore, university-based prototyping, lab-to-fab transition of semiconductor technologies for dual-use (commercial and DoD) as well as unique defense applications.

To view the President's Remarks: <https://www.whitehouse.gov/briefing-room/speeches-remarks/2022/08/02/remarks-by-president-biden-marking-the-signing-of-governor-whitmiers-executive-directive-to-implement-the-chips-and-science-act-of-2022/>



QuickLogic to Develop SRH FPGA Technology

QuickLogic Corporation announced it has been awarded a \$6.9 million Base Contract to develop and demonstrate SRH, high reliability Field Programmable Gate Array (FPGA) technology to support identified and future DoD strategic and space system requirements.

The SRH FPGA Other Transactions Authority (OTA) agreement is with the Army Contracting Command – Rock Island (ACCRI) under the authority of the Cornerstone OTA and will be based on a microelectronic fabrication process implemented at a US-owned and continental US (CONUS)-based manufacturing facility. The project is sponsored by DoD’s Trusted and Assured Microelectronics

(T&AM) Program, and Naval Surface Warfare Center (NSWC) Crane is the Government’s technical lead.

QuickLogic will lead the execution on the Base Contract through collaboration with a team composed primarily of SkyWater Technologies, Ever-spin Technologies, and Trusted Semiconductor Solutions.

Upon successful performance of the Base, and at the discretion of the US Government, the Contract allows for Options totaling approximately \$72 million over the span of multiple years. If the Options are executed, QuickLogic expects to expand the group of companies with which it will collaborate.

Developing and deploying strategic radiation hardened microelectronics requires creating and sustaining a trained cohort of engineers with a unique skill-set both within the DoD and across the broader Defense Industrial Base (DIB). With that goal in mind, meaningful development contributions are expected from Indiana University and other universities.

To view the entire press release:

<https://ir.quicklogic.com/press-releases/detail/643/quicklogic-awarded-a-6-9-million-base-contract-to-develop>

“ Skywater’s investment in a new state-of-the-art semiconductor manufacturing facility at Purdue’s Discovery Park District represents a major step forward and highlights the importance of Public-Private Partnerships in fostering a robust and thriving domestic microelectronics industry.”

Dr. Devanand Shenoy,
Principal Director of
Microelectronics,
OUSD (R&E)/
Critical Technologies

SkyWater Plans to Build Advanced Semiconductor Facility

SkyWater Technology announced its plans to build a \$1.8 billion U.S. semiconductor R&D and production facility in Indiana through a dynamic public-private partnership with the State and Purdue University to pursue CHIPS and Science Act funding.

The Indiana facility, to be located on the Purdue campus in the Discovery Park District, will provide access to SkyWater’s development services, volume production, and heterogeneous integration solutions the company currently offers in its Minnesota and Florida facilities.

The ability to make this large of an investment will be the result

of SkyWater, Purdue University, and the State of Indiana working together to successfully obtain federal incentives in the form of grants as defined in the CHIPS and Science Act.

The new SkyWater facility will accelerate domestic semiconductor capabilities, ensure IP security, and support a more resilient and comprehensive supply chain, providing powerful competitive advantages for its U.S. government and commercial customers.

A diverse set of factors was considered when selecting West Lafayette, Indiana as the fab site, including but not limited to, the state’s highly skilled manu-

facturing workforce, proximity to university engineering programs and semiconductor customers, the Scalable Asymmetric Lifecycle Engagement (SCALE) program managed by Purdue and sponsored by NSWC Crane, Indiana’s strong domestic and international relations, and the quality of life Indiana residents enjoy.

To view the entire press release:

<https://www.skywatertechnology.com/skywater-plans-to-build-advanced-1-8b-semiconductor-manufacturing-facility-in-partnership-with-the-state-of-indiana-and-purdue-university/>

2022 Calendar



October	T&AM Program RH Technical Execution Area Review (18 Oct 2022)
November	Radiation Hardened Electronic Technologies (RHET) Conference, Orlando, FL (7-10 Nov 2022)
	SRHEC Working Group Co-Leads Meeting at RHET (10 Nov 2022)
	SRHEC Discrete Semiconductor Industrial Base Assessment Report
	SRHEC Passive Components Industrial Base Assessment Report