



## **NEWS ANNOUNCEMENT**

**FOR IMMEDIATE RELEASE**

### **SkyWater Releases Early Access PDK and Partners with Trusted Semiconductor Solutions to Enable Design Kit for 90 nm Strategic Rad-Hard by Process Platform**

***First RH90 MPW shuttle launching for early customer IP development***

***SkyWater to present webinar on RH90 process platform at NSREC Virtual Conference***

**BLOOMINGTON and BROOKLYN PARK, Minn., December 2, 2020** – SkyWater Technology, the trusted technology realization partner, today announced it has released its initial process design kit (PDK) and is preparing to launch the first multi-project wafer (MPW) shuttles in the first part of 2021 for early customer intellectual property (IP) development for its 90 nanometer (nm) Strategic Rad-Hard by Process (RH90) platform. This provides customers participating in SkyWater's Early Access Partner Program an opportunity to evaluate the increased circuit density and improved speed, power, and performance capabilities of this next generation technology. To create the RH90 design kit, SkyWater partnered with [Trusted Semiconductor Solutions](#), experts in radiation hardened (rad-hard) microelectronics and advanced system-on-chip and system-in-package solutions for military, space and industrial markets, to develop IP based on the PDK and the RH90 process.

SkyWater will present a webinar on its RH90 platform at the Nuclear & Space Radiation Effects ([NSREC](#)) Virtual Conference, on December 4, 2020 from 1:30 p.m. – 2:00 p.m. EST. RH90 is a fully depleted silicon-on-insulator (FDSOI) complementary metal-oxide-semiconductor (CMOS) process specifically developed to produce electronics which can withstand harsh radiation environments. SkyWater licensed this key FDSOI technology from MIT Lincoln Laboratory to accelerate the availability of its offering to address both government and non-defense related opportunities for rad-hard electronics.

The RH90 design kit includes a PDK, a rad-hard standard cell library and core IP blocks that build the foundation for supporting customers on this technology platform. The joint design kit enablement efforts include improving the Design Reference Manual (DRM) for SkyWater's copper back end of line (BEOL), creating new models and PCells for 1.2 V, 1.8 V, and 3.3 V transistors, MIM Capacitors (MIMCap), Zener diodes, and poly and silicide resistors as well as adding new

physical verification rules, among other enhancements to meet SkyWater design rules. The rad-hard digital library enables ASIC design and includes I/O cells, a phase-locked loop (PLL) and single and dual port memories.

Because rad-hard applications demand high-reliability microelectronics that perform in the harshest environments, special attention needs to be paid to the design, layout, manufacturing processes and assembly of these ICs. The demand for higher integration, smaller size, and better power efficiency is furthering the challenges in rad-hard IC development. SkyWater's RH90 process is anticipated to double the performance for some applications due to increased density compared to industry standard offerings currently available for strategic aerospace and defense applications. Development of this advanced process was enabled by the [previously announced investment by the DOD](#) and the recent completion of SkyWater's facility expansion. The first MPW shuttle will leverage the existing aluminum interconnect technology at SkyWater with an expectation to bring copper (Cu) interconnect process technology online in 2021 as part of the standard process flow.

"We were impressed by how quickly SkyWater was able to complete its facility expansion which enhances microelectronics capabilities for the DOD and the Strategic Rad-Hard market," said Allan Hurst Jr., president and CEO at Trusted Semiconductor Solutions. "As a commercial foundry, SkyWater provides a manufacturing environment that is more conducive to high fab utilization with higher quality and greater yield. We look forward to working together to benefit the aerospace and defense community, and our commercial customers."

"Trusted Semiconductor Solutions was instrumental in the development of the RH90 PDK and IP libraries," said John Kent, SkyWater executive vice president, technology development and design enablement. "The launch of our Early Access Partner Program and first MPW shuttle is a significant milestone in the evolution of our RH90 process as we move toward customer engagement. As part of the MPW shuttle run, customers will have the opportunity to test and validate their own IP as well as evaluate the RH90 PDK, IP blocks and design features prior to technology qualification."

To register for the NSREC webinar on SkyWater's 90 nm Strategic Rad-Hard by Process platform, please visit: [www.nsrec.com](http://www.nsrec.com).

### **Availability**

SkyWater's Early Access Partner Program is available now by signing up at: [www.skywatertechnology.com/rad-hard-eap](http://www.skywatertechnology.com/rad-hard-eap). For more information on the company's rad-hard manufacturing capabilities, contact [swfoundry@skywatertechnology.com](mailto:swfoundry@skywatertechnology.com).

MPW shuttle runs will begin in early 2021, launching throughout the year, and planned to ramp to production by the end of 2021.

### **About Trusted Semiconductor Solutions**

Trusted Semiconductor Solutions provides integrated circuit development services from concept to qualified part delivery leveraging the best-in-class on-shore manufacturing capabilities. TSS specializes in IC design and high-density package solutions with expertise in radiation hardening for space and strategic applications. Trusted Semi is a Trusted accredited supplier and a non-traditional defense contractor. For more information, please visit: [www.trustedsemi.com/](http://www.trustedsemi.com/).

### **About SkyWater Technology**

SkyWater is the only U.S.-owned and U.S.-based pure play semiconductor foundry and is a DOD-accredited Trusted supplier, specializing in custom technology development services and volume manufacturing for integrated circuits and micro devices. Through its Technology Foundry model, SkyWater's world-class operations and unique processing capabilities enable mixed-signal CMOS, power, rad-hard and ROIC solutions. SkyWater's Advanced Technology Services empower development of superconducting and 3D ICs, along with carbon nanotube, photonic and MEMS devices. The company serves customers in growing markets such as aerospace & defense, automotive, biomedical, cloud & computing, consumer, industrial and IoT. For more information, please visit: [www.skywatertechnology.com/](http://www.skywatertechnology.com/).

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