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Department of Defense
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Defense Department to Develop Strategic Manufacturing Capability for Radiation-Hardened Microelectronics

Arlington, VA – The Department of Defense (DoD) has awarded a contract to Skywater Technology Foundry to develop a new fabrication process for radiation-hardened (rad-hard) microelectronics.

As the first strategic rad-hard foundry capability established in the U.S. in over 15 years, the investment will drive a significant improvement in electronics and components available to the DoD for space, nuclear, and other extreme-environment applications.

Over the next two years, Skywater’s existing 90nm complementary metal-oxide-semiconductor process will be adapted to a 90nm silicon-on-insulator process with copper back-end-of-the-line (BEOL), enabling rad-hard electronics that are two to three generations more advanced than today’s 150nm-process-based products.

“Access to assured radiation-hardened microelectronics is vital to the modernization of resilient space and strategic DoD systems,” said Dr. Matthew Casto, program manager for Trusted and Assured Microelectronics in the Office of the Under Secretary of Defense for Research and Engineering. “With the copper BEOL technology providing major performance enhancements in terms of logic density and computational performance new rad-hard microelectronics will find applications in existing and emerging space systems, such as next generation satellite,-as well as systems intended to survive and operate in hazardous nuclear environments.”

Following the announcement of the award, which DoD contracted through the Cornerstone Other Transaction Authority vehicle, Skywater will begin purchasing equipment and creating a new fabrication space.

As it looks to support modernization of electronics in support of the Warfighter and for the Nation as a whole, the effort will encourage DoD-wide participation to maximize communication and coordination across programs in need of rad-hard electronics.

“The DoD is excited at the prospect of having this microelectronics capability available at a U.S. owned pure-play foundry,” said Casto. “It will be a major boost to the Nation’s defense-industrial base and long-term security of supply.”