



## **VORAGO Technologies Recipient of Two NASA Small Business Innovation Research Awards**

Austin, Texas — June 29<sup>th</sup>, 2017 — VORAGO Technologies, a leading provider of radiation-hardened and extreme temperature embedded systems technology, has been awarded two NASA Small Business Innovation Research (SBIR) Phase I grants by the National Aeronautics and Space Administration (NASA).

The two projects that are now underway are consistent with VORAGO's technology expertise and commercial objectives. VORAGO will design a rad-hard Smallsat / CubeSat Avionics single board controller that has the necessary robustness needed for long duration missions in harsh mission environments. VORAGO will also create a design for a radiation-hardened miniaturized System-In-Package (SIP). The SIP will be optimized for size, weight, power consumption and radiation hardness.

Semiconductor device operation in an extreme radiation is enabled by the use of VORAGO's HARDSIL® technology. HARDSIL is a process enhancement to standard semiconductor manufacturing that hardens commercially designed devices against the effects of radiation and temperature. HARDSIL can be used to harden semiconductor devices using standard manufacturing equipment with no negative impact on performance or yields. This approach is a highly cost-effective and fast alternative to conventional rad-hard by design (RHBD) techniques, specialized processes, up-screened commercial products, redundant systems, or mechanical screening.

"We are delighted that NASA continues to recognize our unique capability in developing innovative technology for space," said Bernd Lienhard, chief executive officer of VORAGO Technologies. "HARDSIL technology is a perfect solution to quickly and cost effectively radiation harden semiconductors devices and will enable the success of these important projects."

Microcontroller and SRAM memory devices based upon VORAGO's HARDSIL technology are currently in operation on the International Space Station. These devices are used in a science study, sponsored by Air Force Research Laboratory and hosted on the STP-H5 experiment payload by the Air Force Space and Missle System Center Space Test Payload group and NASA.

### **About VORAGO Technologies**

VORAGO Technologies is a privately held, high technology company based in Austin, TX with patented and proven solutions that enable electronics systems for extreme temperature and radiation environments. VORAGO's patented HARDSIL® technology uses cost effective high volume manufacturing to harden any commercially designed semiconductor component for extreme environment operation. VORAGO Technologies opens up a new world of possibilities for your designs, no matter how hostile the environment. [www.voragotech.com](http://www.voragotech.com)

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