

Ridgetop Group, Inc.  
3580 West Ina Road  
Tucson, AZ 85741 USA  
Phone: +1 520.742.3300  
Fax: +1 520.544.3180  
[information@ridgetopgroup.com](mailto:information@ridgetopgroup.com)  
[www.RidgetopGroup.com](http://www.RidgetopGroup.com)

Universiteit Twente  
Drienerlolaan 5  
7522 NB Enschede  
Phone: (+31) (0)53 489 9111  
Email: [info@utwente.nl](mailto:info@utwente.nl)

**FOR IMMEDIATE RELEASE**

## **University of Twente Using ProChek™ to Explore IC Wear-Out Mechanisms**

*Ridgetop Group's Advanced Instrument Supporting CMOS Process Reliability Study*

**TUCSON, Ariz.—January 23, 2014**

Ridgetop Group and the University of Twente announced today that Twente has begun using Ridgetop's ProChek Semiconductor Process Reliability Characterization System to investigate key degradation parameters in CMOS processing nodes obtained from aging experiments conducted on Multiprocessor System-on-Chip (MPSoC). The new benchtop system greatly accelerates the process of collecting device-level characterization data needed by foundries and fabless semiconductor manufacturers to ensure the quality, performance, and reliability of the IC manufacturing process.



The research team is headed by Dr. Hans Kerkhoff, of the Centre of Telematics and Information Technology (CTIT), the largest research institute of the University of Twente. The activities are part of the Dutch national STARS project. The objective of STARS is to develop the necessary knowledge and technology that can be used as a baseline for the development of reconfigurable sensors and sensor networks applied in the context of the security domain. The measurement data will be correlated with measured key functional parameters of reconfigurable processor cores in a homogeneous MPSoC environment during aging, enabling a new generation of dependable integrated systems with unsurpassed features. The aging research will also be extended to analog intellectual property (IP) blocks as well as mixed-signal IP in a later stage. There is also close cooperation with a local professional industrial partner involved in the reliability testing. Dr. Kerkhoff commented, "ProChek will provide a fast method for us to get an indication of our aging regime on processor nodes, before implementing parts of these monitors on our actual IP cores."

The ProChek system contains high-precision current and voltage sources and stress-and-measurement instrumentation in an extremely compact and portable bench-top package. Together with ProChek's innovative "test coupon" architecture, which includes embedded on-chip heating elements, the system is able to stress-and-measure many transistor-level devices at a time without the use of an oven, in stark contrast with traditional reliability methods. Said Andrew Levy, Vice President of Business Development at Ridgetop, "We are very pleased that the University of Twente has joined Ridgetop's Academic Program and is now using ProChek to obtain a better understanding of failure mechanisms in harsh-environment electronics. We expect that the test chips we were able to provide Dr. Kerkhoff

and his team will help them derive valuable insights concerning the reliability of major fabrication processes.”

### **About Ridgetop Group, Inc.**

Established in 2000, Ridgetop Group is a Tucson, Arizona-based firm that produces electronic solutions for harsh environments and challenging applications. The firm is qualified as an aerospace supplier under its AS9100C certification, and became a Category 1A Trusted Supplier under the DOD’s Trusted Foundry Program in 2010. A privately held firm, Ridgetop operates two divisions in Tucson, and Ridgetop Europe is related subsidiary firm based in Brugge, Belgium. For further information, please visit our website at [www.ridgetopgroup.com](http://www.ridgetopgroup.com) or contact [information@ridgetopgroup.com](mailto:information@ridgetopgroup.com).

### **About the University of Twente**

High tech, human touch. That is the University of Twente. Some 3,300 scientists and other professionals working together on cutting-edge research, innovations with real-world relevance and inspiring education for more than 9,000 students. The enterprising university encourages students to develop an entrepreneurial spirit.