Parasoft's Automated Testing Helps Verify Safety-Critical Firmware for Kitea Health's Investigational ICP Sensor

Testing Verified the Code Running Inside a New Sensor for Hydrocephalus

MONROVIA, Calif. – Sep 8, 2026 – Parasoft, a global leader in automated software testing solutions, is helping New Zealand-based medical technology company Kitea Health verify the safety-critical firmware behind the Kitea Sensor, a system designed to measure intracranial pressure.

One of the most serious and common neurological conditions, hydrocephalus is caused by an abnormal buildup of cerebrospinal fluid in the brain and affects people of all ages, from newborns to the elderly. It can lead to increased intracranial pressure and serious, lifelong neurological consequences.

In the United States alone, approximately one million people are living with hydrocephalus, with around 40,000 pediatric hospital admissions each year. Annual healthcare costs exceed $2 billion. By enabling remote intracranial pressure monitoring and earlier clinical intervention, the Kitea System has the potential to improve patient outcomes.

When software is part of an implantable medical device, every line of code matters. The firmware must perform reliably and comply with stringent safety and regulatory requirements. Kitea Health selected Parasoft C/C++test as its automated testing solution for developing and verifying its safety-critical embedded software, ensuring the device meets the rigorous software safety standards as part of its broader regulatory compliance strategy for Kitea's investigational device.

Parasoft C/C++test helps development teams comply with industry coding standards such as MISRA, CERT, and CWE. The solution is TÜV SÜD certified for use in functional safety development processes and combines static code analysis, unit testing, and comprehensive code coverage reporting to identify defects early and provide objective evidence for software verification.

"Using Parasoft C/C++test, we achieved 99 to 100 percent code coverage, executed approximately 1,000 test cases in less than 30 minutes, and reduced firmware development time by 25 percent," said Masahiro Kondo, lead developer at Kitea Health. "Automated testing gives us reproducible results and the confidence we need when developing software for an implantable medical device."

In addition to significantly reducing development time, Kitea Health benefits from automated verification, faster test execution, and comprehensive documentation of software quality, key capabilities for developing safety-critical medical devices and supporting regulatory compliance.

The underlying technology originated at the Auckland Bioengineering Institute in New Zealand. Kitea Health has secured Breakthrough Device Designation from the FDA in the United States, signifying that the FDA recognizes the potential of Kitea's technology to significantly improve care for those living with hydrocephalus. The Kitea System is currently undergoing clinical trials and remains an investigational device that is not yet commercially available.

"The performance of today's medical devices depends increasingly on the quality of their software," said Igor Kirilenko, chief product officer at Parasoft. "Automated software testing enables development teams to efficiently meet demanding safety and regulatory requirements while accelerating innovation. Kitea Health demonstrates how robust software quality practices can help bring the next generation of safe medical technologies to patients."

About Kitea Health

Kitea Health is a medical technology company based in Auckland, New Zealand, dedicated to rethinking care for people living with Hydrocephalus. Spun out of the Auckland Bioengineering Institute at the University of Auckland, the company has developed the Kitea System, an intracranial pressure (ICP) monitoring platform designed to give patients and clinicians real-time insights. Kitea's mission is to shift hydrocephalus care from crisis response to proactive and data-informed.
CAUTION – The Kitea System is an investigational device. Limited by federal (or United States) law to investigational use. It is currently under evaluation and is not approved for sale or use in the United States.
Learn more at www.kiteahealth.com

About Parasoft

Parasoft helps organizations continuously deliver high-quality software with its AI-powered software testing platform and automated testing solutions. Parasoft's technologies for embedded, enterprise, and IoT markets reduce the time, effort, and cost of delivering secure, reliable, and compliant software. Integrating static and runtime analysis, unit and API testing, and full-code coverage, Parasoft brings proven methodology to the entire software development lifecycle, from component testing through integration and system-level validation.

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