



LDRA Climb on Board NASA's 'Return to Flight' Mission

The Client

Neptec is a leader in the design, development, and integration of mission-critical real-time software, harsh environment electronics and digital signal processing. Their specialist technology is utilised in space, healthcare, aerospace, defense and security applications. They are also engaged in system development, mission analysis, and support for space programs as well as telehomecare systems.



The Projects

Neptec's Laser Camera System (LCS) is a wide angle, high-speed, high-precision, laser scanner. The LCS was installed on the new extension boom of the 'Canadarm' for the recent Space Shuttle 'Return to Flight' project. The scanner can inspect even hard to reach areas on the underside of the Shuttle that are normally invisible from inside the vehicle. The extension was utilised on the Canadian-built Orbiter Boom Sensor System. The boom made its maiden flight on the Return to Flight mission STS-114.

The Requirements

Neptec had experience of using unit test tools in the past but they were finding their old tools required time-consuming scripting and additional work, as well as having a steep learning curve for new team members.

A decision was made to investigate the market and find an easy to use tool to work in Neptec's environment as well as fit into their software development process. The requirements were to test C/C++ on a Windows XP platform using both QNX and Windows as their OS. The software also had to compile with MSVC 6.0 as well as Code Composer V3.1 for their DSP testing.



Space Shuttle Discovery



John Schneider

In summarising the tool selection activity, John Schneider, Neptec's Director of Engineering said: "We required a tool which was easy to use, had extensive and detailed documentation which could be easily tracked for audit purposes and, most importantly, was easy to use and configure through the graphical user interface. The chosen tool would have to greatly assist us with our functional and system testing."

With these requirements in mind Neptec evaluated the *LDRA tool suite* and found the tool to be more than a good match for these requirements. John stated "LDRA met and exceeded all of our requirements for the Laser Camera System on the Return to Flight program."

The Benefits

John continued by stating "The ability to be able to easily view the reporting facilities was vitally important to us." "From the teams perspective it was important to be able to maintain tests and be able to archive data in a way which was easily accessible. The functionality within the *LDRA tool suite* enabled this information to be easily available."

"The ability to carry out full path coverage assisted the team to test the critical segments of the code."

The Future

The Return to Flight project has been a success and the continuing upgrades will make full use of the *LDRA tool suite*.

John Schneider commented "The team have been able to dramatically increase the throughput of unit testing and as a result the Laser Camera System was delivered on time."

"The tools reporting facilities for audit purposes are excellent"

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