

*“Having a tool that will find 99% of coding standard violations in seconds is great.”*

### The Client



Richland Technologies LLC is a leading AS9100C-certified company providing full-lifecycle hardware and software engineering, safety-critical and high-integrity product development and certification services worldwide to the civil and military avionics industry.

Headquartered in Lawrenceville, Georgia, the company specialises in avionics computing platforms, cockpit displays and advanced vision system development with services including safety engineering in addition to design, implementation, verification and validation to meet DO-178C (software) and DO-254 (hardware) standards.

### Evaluating the LDRA tool suite

Richland Technologies is currently using the LDRA tool suite for static analysis, unit-testing, low-level verification and structural coverage analysis of the embedded software for advanced vision systems and inertial measurement units used in standby instrument systems.

Sales and Marketing Executive Robert Atkinson outlined why Richland Technologies undertook this evaluation process, *“Many of our engineers had excellent previous experience with the LDRA tool suite, however, we wanted to make sure it could continue to provide the best results as our design cycles got shorter and designs became more complex. The LDRA tool suite came out on top in our evaluation of low-level verification tools for target computer systems, and we have been using it successfully for almost three years now. We are currently looking at implementing even more of the modules in the LDRA tool suite as our business grows.”*

### LDRA Technical Support: An Invaluable Resource

*“With most complex tool suites, it takes days to get set up using a combination of instruction manuals and the tool-provider’s technical support,”* confirmed Stephen Spence, a senior avionics software engineer at Richland Technologies. *“Set up almost always takes a lot longer than you expect, but we had the opposite experience with the LDRA tool suite. It took less time than we expected because we had a skilled technical support engineer there to resolve any issues quickly.”*

### Automation: Speeding the Verification Process and Making it (Almost) Fun!

For Richland Technologies, integrating the LDRA tool suite into their workflows automated a great deal of the verification process and dramatically reduced the verification cycle and time to certification.

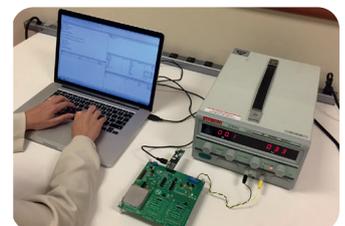
*“The LDRA tools automate the part of software engineering that everyone hates — the mundane, repetitive verification tasks,”* Spence added. *“Having a tool that will find 99% of coding standard violations in seconds is great.”*

### Stepping Up to the DO-254 and DO-178C Certification Challenge

Richland Technologies is known for its in-depth understanding of the strict requirements-driven processes mandated by the DO-254 and DO-178 standards for the development of commercial airborne electronic systems. According to the company’s engineers, the LDRA tool suite and documentation are extremely well matched to safety-critical design flows and in-house methodologies that help achieve standards certification in much shorter timeframes.

Particularly valuable features of LDRA include:

- Well organised web page-based output highlighting code coverage and static analysis results achieved during low level verification
- Rapid regression analysis
- Structural coverage results
- Robust static analysis capability
- Extensive unit tests
- Easy integration into the DO-178C design flow



### LDRA tool suite Facilitates Design and Customer Collaboration

Choosing verification tools that are also part of their customers’ design flows further enhances Richland Technologies’ collaborative approach to customer engagement.

*“When we work with multi-billion dollar aviation companies who also use LDRA tools, it’s much easier to collaborate,”* Atkinson stated. *“For example, we were working on a remote data concentrator unit design with a large European avionics company and were able to easily pass data back and forth between our teams in Atlanta and Europe. This is not an uncommon way of working, but the more collaborative you can be, the easier it is to complete the design and efficiently meet certification requirements.”*

For more information contact: [info@ldra.com](mailto:info@ldra.com)