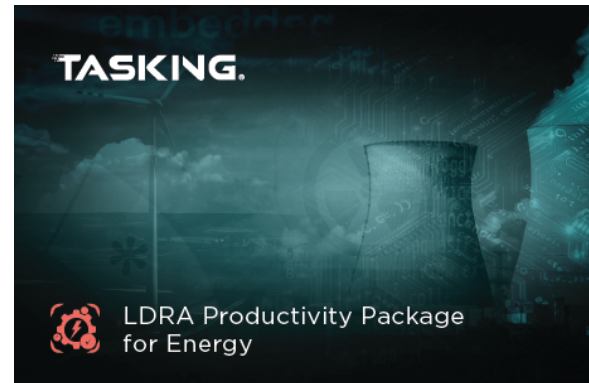


LDRA Productivity Package for Energy

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The LDRA Productivity Package for Energy is a set of targeted capabilities drawn from the LDRA tool suite. It enables customers to meet the rigorous standards of the FERC and other regulatory authorities by achieving EN 60880 and IEC 62138 compliance through to Category C, the highest level of assurance for nuclear power plant instrumentation and control systems. These safety-focused capabilities are complemented by the tool suite's support for secure coding best practice throughout the development lifecycle.



The package includes LDRA's best in class capabilities for the development and verification of instrumentation and control software. The package's flexibility and scalability addresses the changing needs of the most demanding projects and enhances collaboration across large and small teams, making it ideal for use at any point in the software development lifecycle. The breadth of capabilities included in the package make it suitable for use in the energy sector, as well for the development of software to varying levels of assurance.

The screenshot displays the LDRA Productivity Package for Energy software interface. The main window is titled 'LDRA Productivity Package for Energy 10.2.0 © 2023 LDRA Ltd'. It features a 'File Explorer' on the left showing a project structure with files like 'safe_string.c', 'safe_sprintf.c', 'safe_compress.c', and 'main.c'. The central 'Results View' shows a table of code review and coverage results. The table has columns for 'Percentage', 'Percentage Change', and 'Success Limit'. The results are organized by file and then by coverage type (Combined Coverage Run, Statement Coverage, Branch Coverage). The 'Log Window' at the bottom shows a sequence of events: 'Code Review Started - Safe_Utillies', 'Code Review Completed', 'Quality Review Started - Safe_Utillies', 'Quality Review Completed', and 'Code Coverage Started - Safe_Utillies'. A secondary window in the foreground shows a detailed view of the 'Safe_Utillies' project, listing various metrics like 'Clarity', 'Maintainability', 'Testability', and 'Metric Groupings', all of which are marked as '100% Metrics Successful'.

The LDRA Productivity Package for Energy embraces both static and dynamic analysis techniques to encompass a wide range of essential features designed to ensure compliance with functional safety and security standards. Static code analysis is used to evaluate code quality and gather critical metrics. It enables checking against the rules defined by coding standards such as MISRA, CERT, and CWE, in addition to user configurable rules sets.

Dynamic analysis capabilities include unit, integration and system level testing on simulators and target hardware alike. Structural coverage analysis including MC/DC enables the assessment of coverage statistics and the implementation of requirements-based and on-target testing, while the analysis of data coupling and control coupling helps to ensure that source code is implemented in accordance with its developer's intentions.

Reporting of both static and dynamic analyses is tuned to industry requirements and formatted to reflect the objectives of EN 60880 and IEC 62138. Optional add-in capabilities including requirements traceability, web-based project reporting of testing and analysis results, tool qualification packages, and object to source code traceability. These capabilities complement the base productivity package to provide a comprehensive toolkit for ensuring the highest level of assurance in the development of energy related embedded software, meeting the rigorous standards of FERC and other regulatory authorities in the energy industry.

The image displays two overlapping screenshots of the LDRA Productivity Package for Energy software interface. The top screenshot shows the 'LDRA Productivity Package for Energy Test Manager Report' for 'System Set: Safe_Uilities' and 'IEC 62138 Category C'. It includes a sidebar with navigation options like 'Test Manager', 'Code Review', 'Standards Model Compliance', 'Quality Review', 'Code Coverage', and 'MC/DC Test Case Planner'. The main content area shows a 'Code Review' section with a list of files: 'main.c', 'safe_compress.c', 'safe_sprintf.c', and 'safe_string.c'. Below this is a 'Quality Review' section. The bottom screenshot shows the 'LDRA Productivity Package for Energy Code Coverage Overview Report' for the same system set and category. It features a prominent '92% Statement Coverage' result, a warning that 'Coverage Metrics required to achieve IEC 62138 Category C NOT Attained', and a 'System Summary' table. The table lists 'Safe_Uilities' with a 'Statement (%)' of '92%'. The interface is clean and professional, with a purple header and a white background for the reports.

The LDRA Productivity Package for Energy at a glance:

- Functional safety standard compliance with EN 60880 and IEC 62138, and support for secure coding best practice
- Static code analysis including key quality, complexity and testability metrics
- Coding standards compliance including MISRA, CERT, and CWE for both C and C++, along with many other commercially available coding standards
- The ability to define custom coding standards
- Dynamic structural coverage analysis including MC/DC
- Unit and system level testing on target hardware
- Requirements-based and on-target testing
- Security analysis and reporting, including taint analysis
- Data coupling and control coupling analysis
- Can be extended through add-in capabilities including requirements traceability, web-based project-level reporting, tool qualification packages, and object to source code traceability and coverage
- Breadth of capabilities meets the needs of most Energy software development and verification projects
- Flexibility and scalability to support projects at any point in the lifecycle

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