

Automated Dashboards and Reports for Test Planning and Test Execution

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SAIC

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WHY DIGITAL TEST?

Status Quo: Document-Intensive Testing

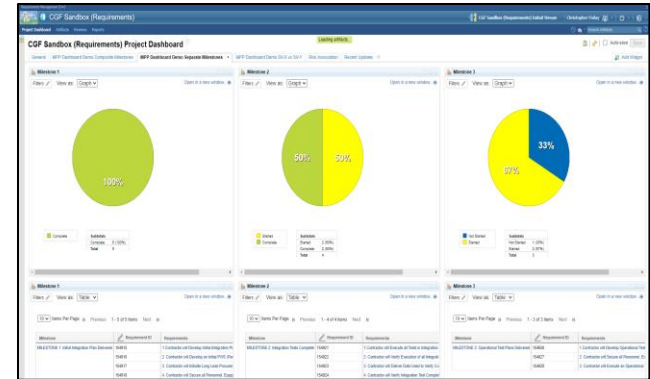
- Leads to siloed, disconnected tests of a system with little/no reuse
- No guarantee of consistency/completeness between requirements and test events
- Manually generated reports are often delivered as cold PDFs, Excel, PowerPoint, or other disjointed artifacts
- Requirement changes are manually propagated to spreadsheets, documents, and presentations

FILES & DOCUMENTS



SAIC: Digital V&V Solution

- Test Environment Integrates with Digital Thread for Live Data-Exchange and Navigation
- Test Planning
 - Configuration Controlled History of Every Item
 - Direct Integration with Requirements and Risks
 - Automated Dashboards
- Test Execution
 - Automated V&V of Requirements
 - Digital Thread Enabled Defects
 - Automated Report Generation
 - Test Execution Records and Defect Reports
 - PEO-centric Dashboards



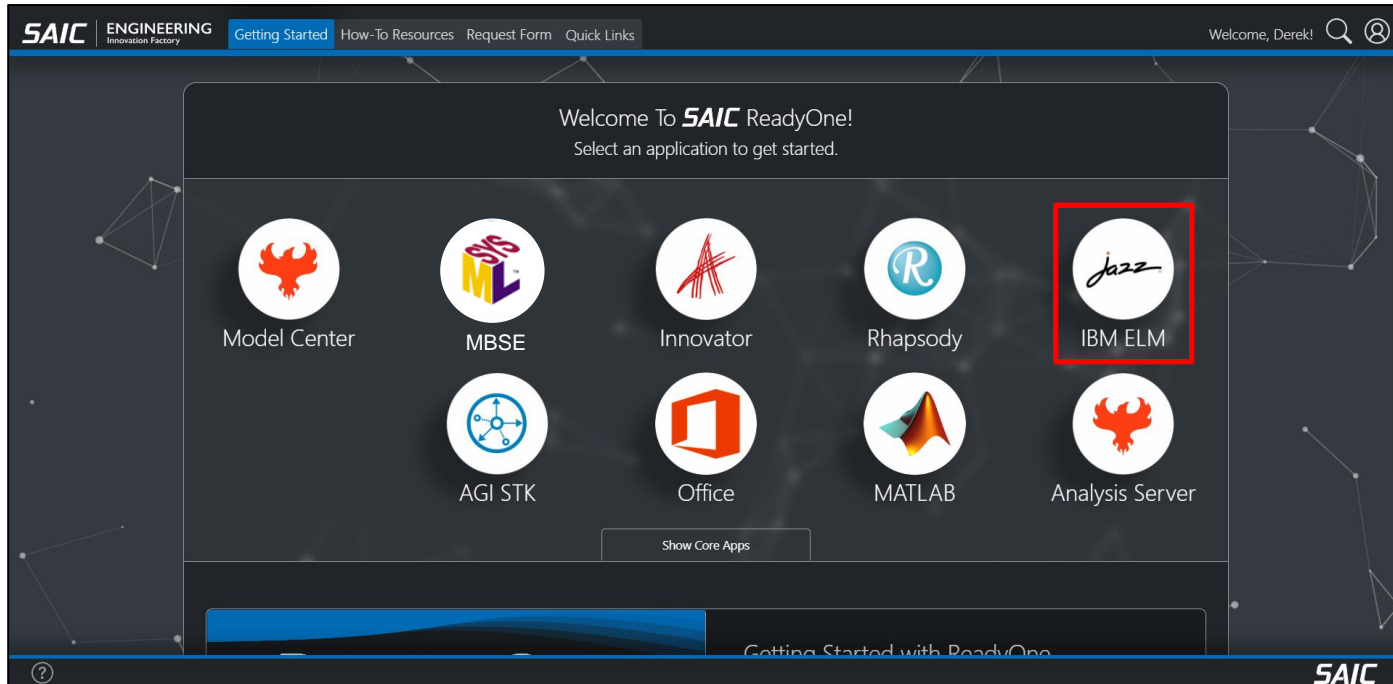
The interface shows a 'Test Cases' section with a list of test cases, including '65: Record Environmental Data Test Case' and '58: Data Recording Test Script'. Below this is a 'Test Execution Records' section showing a record for '114 Record Environmental Data Test Execution Record'. A 'Defect 508' is highlighted in a red box. The bottom section is titled 'Automated Trouble Reports' and shows a summary of a failing test case.



Cloud-Based Solution

ReadyOne

- ▶ Web-based, no downloads required
- ▶ The IBM Jazz Suite is accessible via ReadyOne at <https://www.readyone.net/>



Engineering Lifecycle Management (ELM)

- ▶ IBM Engineering Lifecycle Management (ELM), also known as the IBM Jazz Suite, is composed of the following tools:
 - DOORS Next
 - Engineering Workflow Management (EWM)
 - Formerly Rational Team Concert (RTC)
 - Rhapsody Model Manager (RMM)
 - Engineering Test Management (ETM),
 - Formerly Rational Quality Manager (RQM)
- ▶ Allows connection to relational database providing seamless integration
- ▶ Currently using ELM 7.0.2



Engineering Test Management (ETM)



► Test Planning

- Create and manage test artifacts
- Export test documentation
- Link to requirements for validation
- Conduct gap analyses

► Test Execution

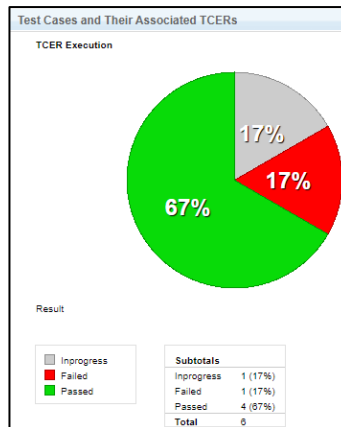
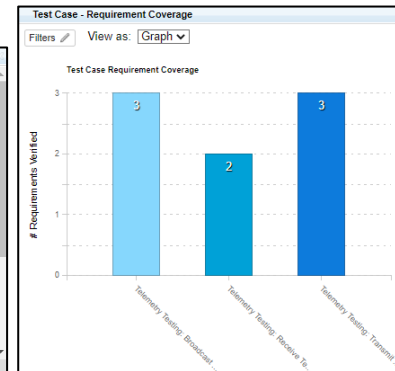
- Execute test cases
- Document results
- Validate requirements
- Export test results

Test Case - Requirement Coverage

Filters View as: Table

10 Items Per Page M Previous 1 - 8 of 8 Items Next M

Test Case ID	Test Case	Requirement ID	Requirement
70	Telemetry Testing: Broadcast Service Test Case	163560	The SIRIUS FM-1 satellite system shall provide 24-hour radio broadcast services.
		163570	The SIRIUS FM-1 satellite system shall broadcast radio communication to the contiguous United States.
		163574	The SIRIUS FM-1 satellite system shall transmit received signals to receivers located at any location within the contiguous United States.
69	Telemetry Testing: Receive Telemetry Test Case	163573	The SIRIUS FM-1 satellite system shall receive signals transmitted from ground stations located in Los Angeles CA, Memphis TN, and New York, NY.
		163570	The SIRIUS FM-1 satellite system shall be capable of receiving data at a rate of 128 Kbps.



Test Case Requirement Status

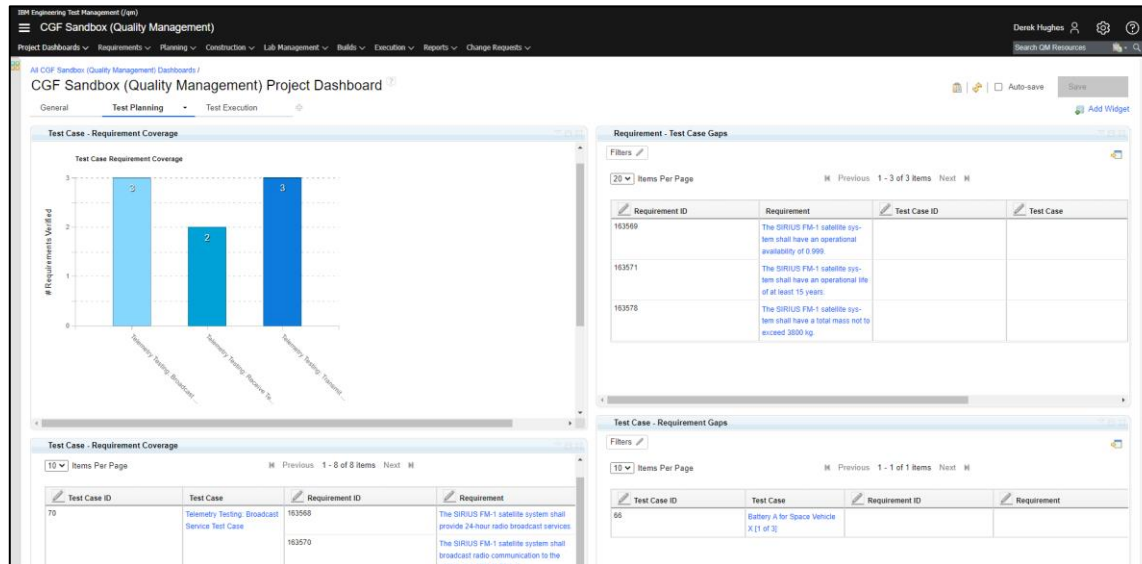
Test Case ID	Test Case	TCER	Requirement	Result
70	Telemetry Testing: Broadcast Service Test Case	Telemetry Testing: Broadcast Service Test Case	The SIRIUS FM-1 satellite system shall provide 24-hour radio broadcast services.	Passed
			The SIRIUS FM-1 satellite system shall transmit received signals to receivers located at any location within the contiguous United States.	Passed
			The SIRIUS FM-1 satellite system shall broadcast radio communication to the contiguous United States.	Passed
69	Telemetry Testing: Receive Telemetry Test Case	Telemetry Testing: Receive Telemetry Test Case	The SIRIUS FM-1 satellite system shall be capable of receiving data at a rate of 128 Kbps.	Passed
			The SIRIUS FM-1 satellite system shall receive signals transmitted from ground stations located in Los Angeles CA, Memphis TN, and New York, NY.	Passed
68	Telemetry Testing: Transmit Telemetry Test Case	Telemetry Testing: Transmit Telemetry Test Case	The SIRIUS FM-1 satellite system shall be capable of transmitting data at a rate of 128 Kbps.	Failed
			The SIRIUS FM-1 satellite system shall transmit signals within 5 seconds (T), 2 seconds (O) of receipt of signals from ground stations.	Failed



Test Planning

Test Plan Dashboarding

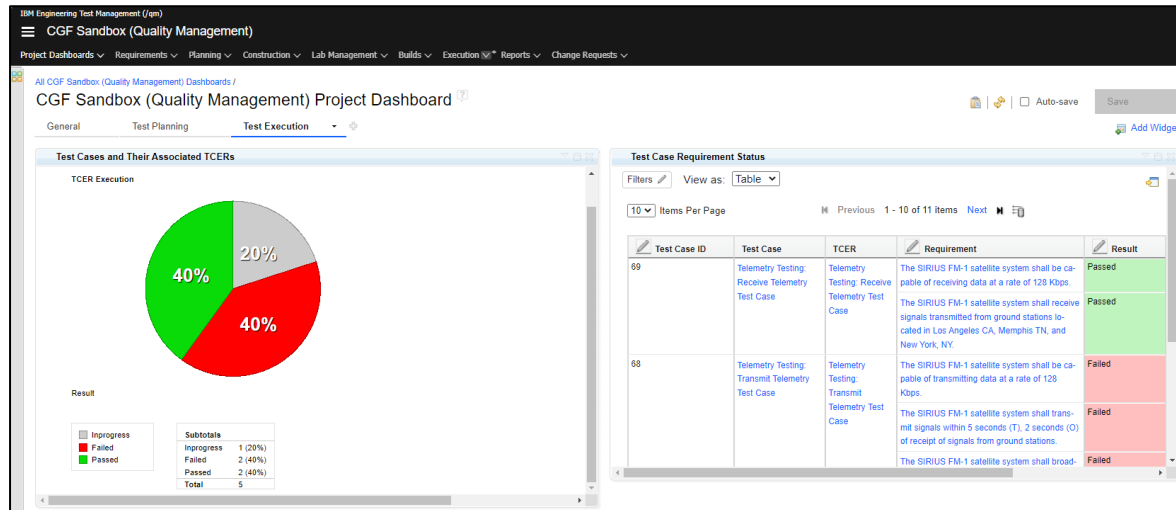
- ▶ Reusable widget templates available to assist Test Planning Activities
 - Requirement Coverage
 - Gap and Impact Analyses
- ▶ Additional widgets can be tailored and displayed here



Test Execution

Test Execution Dashboarding

- ▶ Reusable Widget Templates available to assist Test Execution Activities
 - Test Case Completion Status
 - Requirement Validation Status
- ▶ Additional Widgets can be Tailored and Displayed here



ETM Demo

Digital V&V Example

The screenshot shows a web browser window displaying the SAIC ReadyOne application. The browser's address bar shows a URL with an access token. The application's header includes the SAIC logo, 'ENGINEERING Innovation Factory', and navigation links: 'Getting Started', 'How-To Resources', 'Request Form', and 'Quick Links'. A user greeting 'Welcome, Derek!' is visible in the top right. The main content area features a large white callout box on the left with the text 'Test Environment in ReadyOne Ecosystem'. To the right of this box are three circular icons representing different applications: 'Innovator' (a red scribble), 'Rhapsody' (a blue 'R' in a circle), and 'IBM ELM' (the word 'jazz' in a script font). Below these icons is a 'Show All Apps' button. The bottom of the page has a blue bar with a question mark icon on the left and the SAIC logo on the right.



Questions/Comments



SAIC DE Profile & Validation Rules:

<https://www.saic.com/digital-engineering-validation-tool>

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