

Innovate2011

The Rational Software Conference

11th and 12th of October

Let's **build** a smarter planet.



Solving Test Management And Test Automation Challenges On A Large Programme Across Multiple Organisations

David Uzzell – National Grid Test Manager



The Challenge

- **Large multi million pound multi-vendor project Electricity Balancing System (EBS)**
- **Critical National Infrastructure (CNI) – keeps the lights on at the heart of the National Electricity Market**
- **Replaces legacy National Grid application set**
- **New applications / amended applications / new WAN/LAN / new hardware**
- **Very challenging availability, resilience and reliability requirements**
- **Minimal loss of service at transition from old to new**
- **High volume of system changes over the life of the system requiring reduced time to market**
- **Core system interfacing with many other systems**



The Proposed Project Solution Model



- **Multiple vendors delivering the solution**
- Across multiple time zones
- **Offshore testing**
- **CNI, Non-CNI National Grid**
- **External interfacing systems**



The Importance of Quality

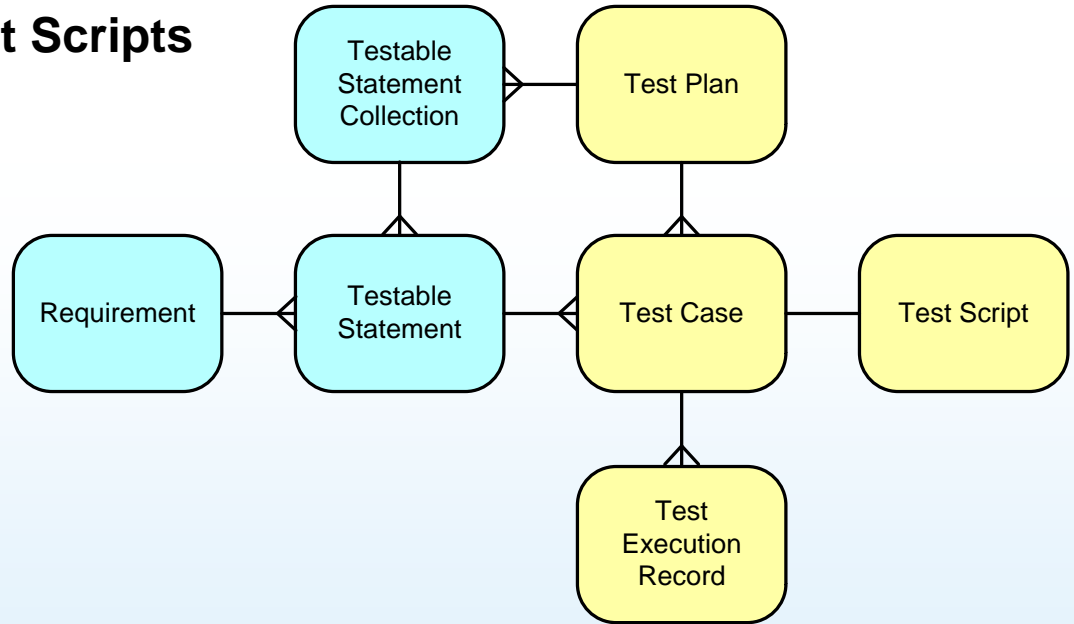
- **Challenging set of requirements**
- **Constraints**
 - **Multiple vendors creating tests**
 - **Repeatable manual and automated test execution**
 - **Common test coverage reporting**

**COLLABORATIVE APPROACH REQUIRED ACROSS
MULTIPLE VENDORS TO ACHIEVE OUR GOALS**



Key Artefacts

- Requirements
- Testable Statements and Testable Statement Collections
- Test Plans, Test Cases, Test Scripts
- Test Runs



How Did We Meet The Challenges

IBM Rational software



Rational Team Concert (RTC)



Rational Requirements Composer (RRC)



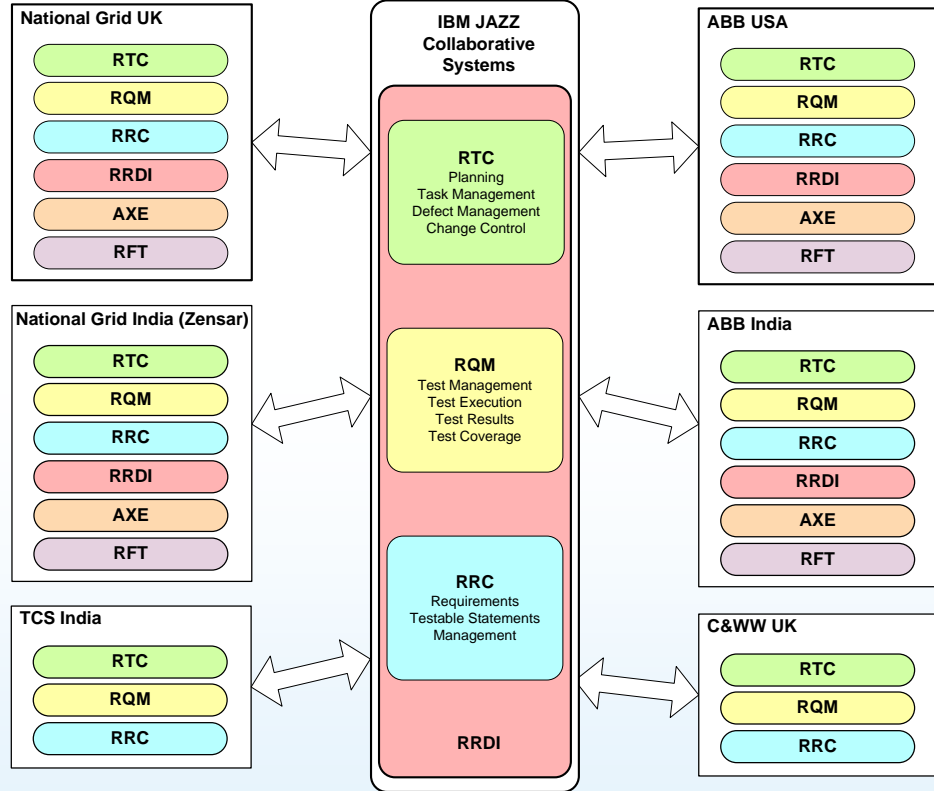
Rational Quality Manager (RQM)



Rational Functional Tester (RFT)



Rational Reporting for Development Intelligence (RRDI)

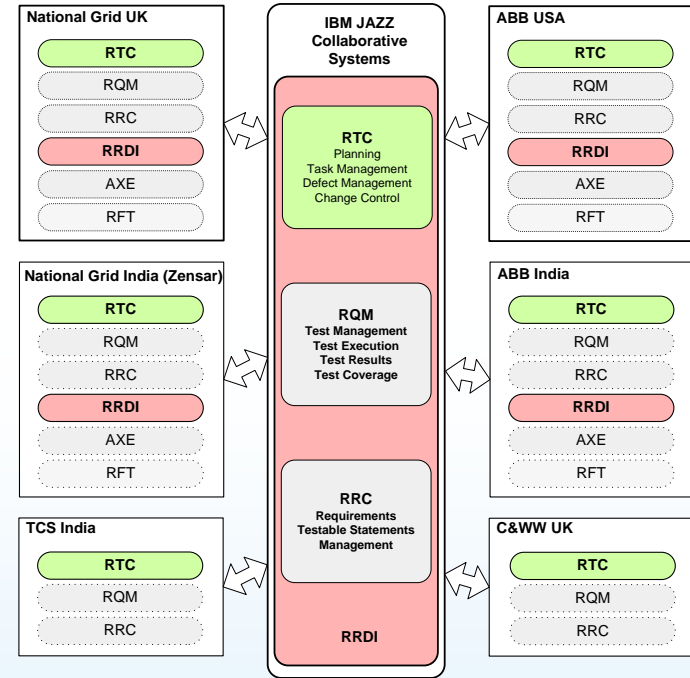


Innovate2011

Software. Everywhere.

Managing Team Workload Across Organisations

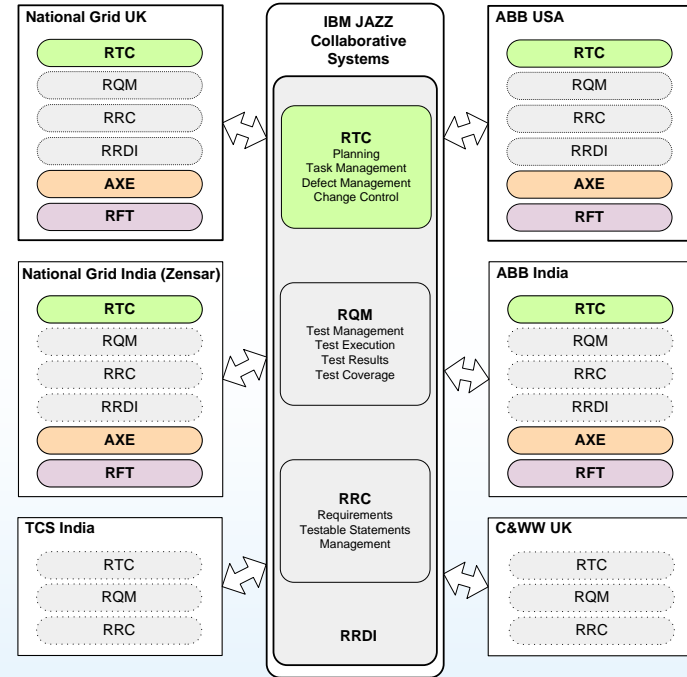
- High level chunks of work allocated to teams/individuals
- All details linked to tasks – chat, message@me - email reduction
- Work plans and tasks
- National Grid offshore test teams have own plan
- All test artefact creation managed through tasks
- Reporting of progress



Developing a Common Framework Across Organisations For Non Technical Test Automation



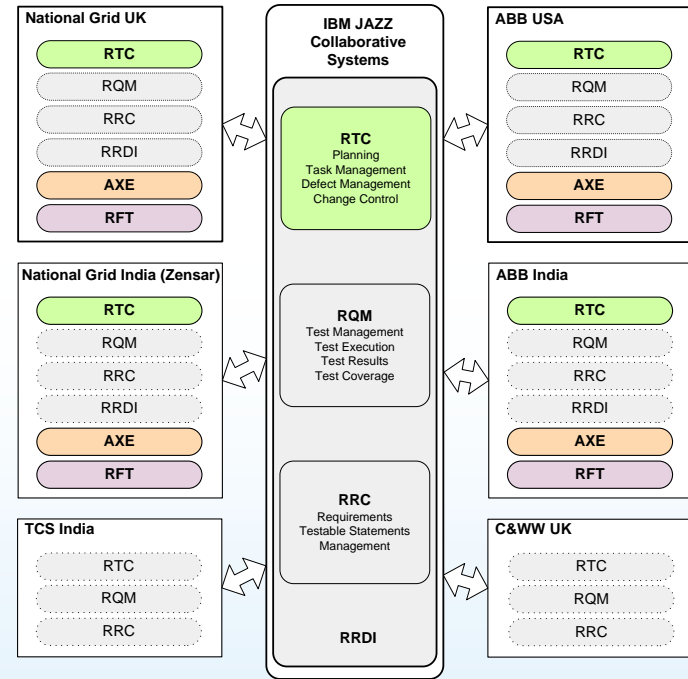
- Shared framework written in RFT
 - Object maps and methods
- Written by several organisations
- All under shared source control
- Use Excel to create tests
 - Each test a series of subtests
 - Generates RFT java code
 - Executed from RQM
- Modular, reusable, maintainable test building blocks



Developing a Common Framework Across Organisations For Non Technical Test Automation (2)



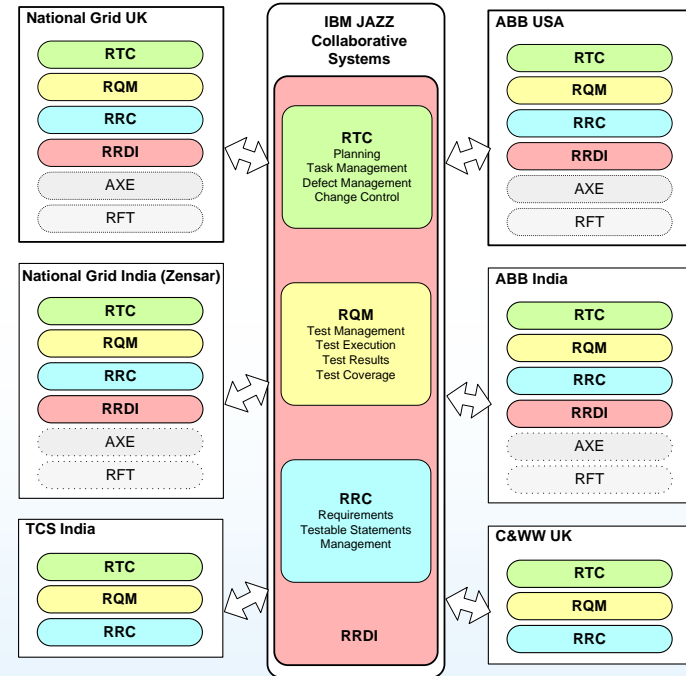
- Real-time relative test data and expected results
- Same test data used for both old and new system
- System steps are different



Establishing Ownership of Test Coverage

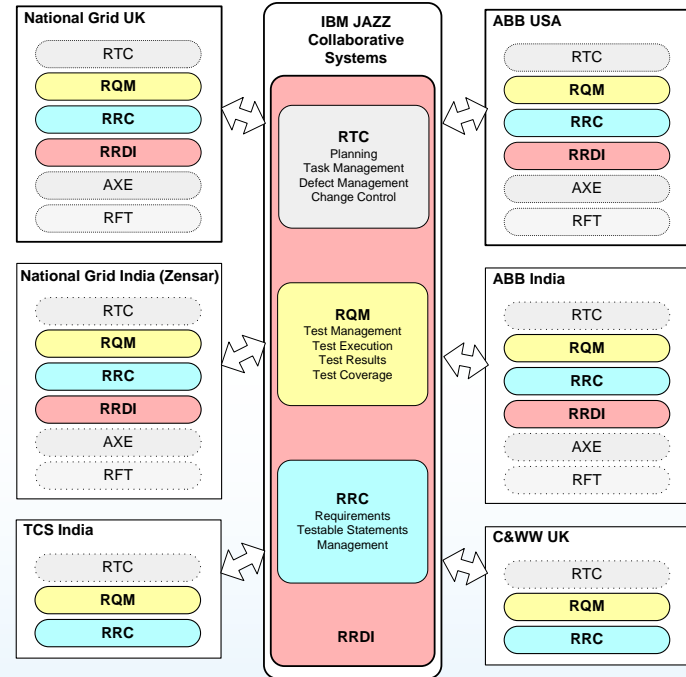


- Testable Statement Collections
 - Allocated to appropriate team
 - Track work allocation and progress through detailed tasks
- Reporting through RQM and RTC



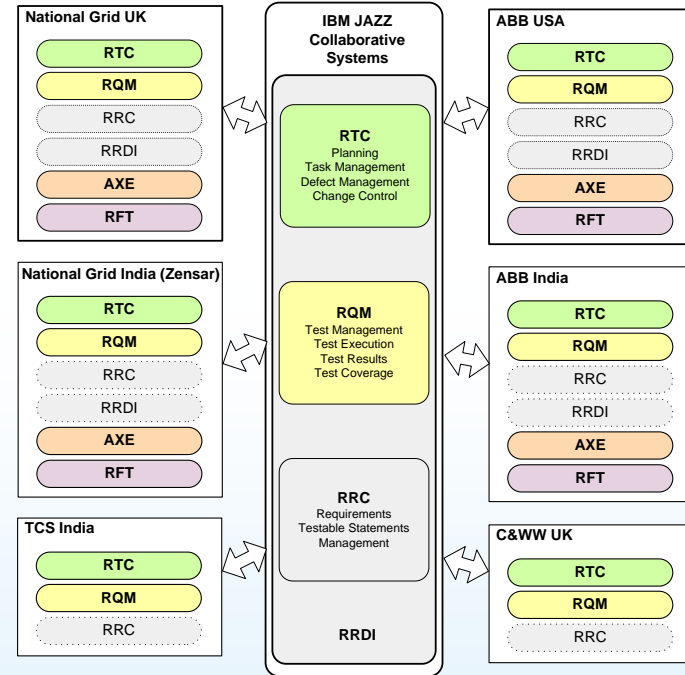
Proving Test Coverage of Requirements

- Artefacts are linked to facilitate
- Coverage Reporting
 - Requirement to Testable Statement
 - Testable Statement Collection to Test Plan
 - Testable Statement to Test Case
 - Test Case to Test Script
- Reports to show:-
 - Test Artefact Creation
- Progress/Coverage
 - Test Execution Requirements Coverage



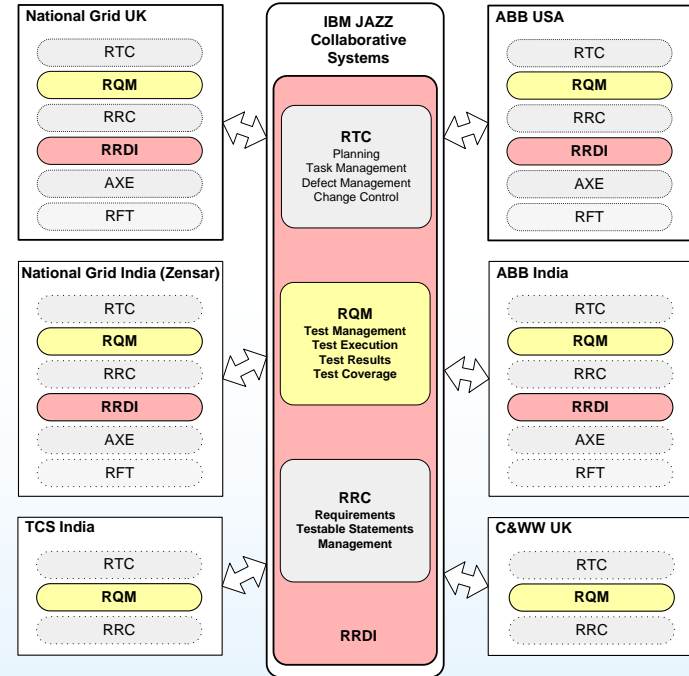
Creating Repeatable Tests in Different Organisations

- Shared Framework written in RFT
 - Modular, Reusable, maintainable test building blocks
 - All under Shared Source Control
- Shared Data
 - All under Shared Source Control
 - Repeatable Starting Point
- Known Controlled Test Environments
- Execution via RQM



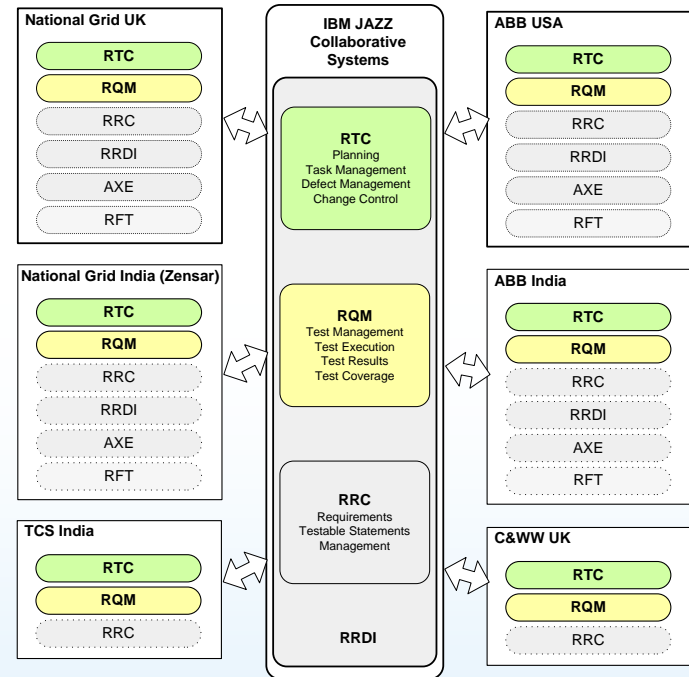
Reporting On Test Progress And Coverage

- Reports to show:-
 - Test artefact creation
- Progress/Coverage
 - Test execution requirements coverage



Managing Defects Across Organisations

- Defects created from test execution
 - Linked to Test Case
- Allocated to appropriate owning organisation/owner



Where We Are

- Project completing design phase
- Vendors engaged, testable statements being loaded
- Automation tests created for current system to prove process
- ABB started creating automated tests

