

QMTIA

Quality Manager - TestStand Integration Adapter

ULMA Embedded Solutions's Quality Manager TestStand Integration Adapter provides an integration between IBM RQM, quality management tool, and National Instruments TestStand, test management software, that enhances test engineering teams efficiency by automating National Instruments TestStand sequence execution and reporting from IBM RQM.

■ *Test case traceability*

Test engineers can use the integration to link automated tests to test cases and to requirements. NI TestStand applications and parameter files on the test machine are linked to a IBM RQM test case that provides traceability to other project aspects including requirements, overall quality plan, project plan, change-defect management system, etc.

■ *Test automation*

The QMTIA provides automated test cases execution that improves testing efficiency. From the web-based interface of IBM RQM, test engineers can invoke the execution of the NI TestStand applications that are linked to the IBM RQM test case. The execution status reported by the NI TestStand sequence is displayed in the IBM RQM web interface as part of the test case execution results.

■ *Test case results management*

Upon completion of the NI TestStand sequence, various outputs from the sequence are automatically published to IBM RQM storage and an HTML report is linked to the IBM RQM test case execution result page.



Purchasing information available in
www.ulmaembedded.com
or
qmtia_sales@ulmaembedded.com

Setup

Consulting

Training

Push

- **ULMA Setup** package helps you accelerate

- | Installation
- | Configuration
- | Small deployment

- Well suited for

- | New projects with small budgets
- | Existing clients starting new projects, adding new product or require PoC

- ULMA Team

- | Junior consultant

- Delivery way

- | On-site
- | Remote

- Requires

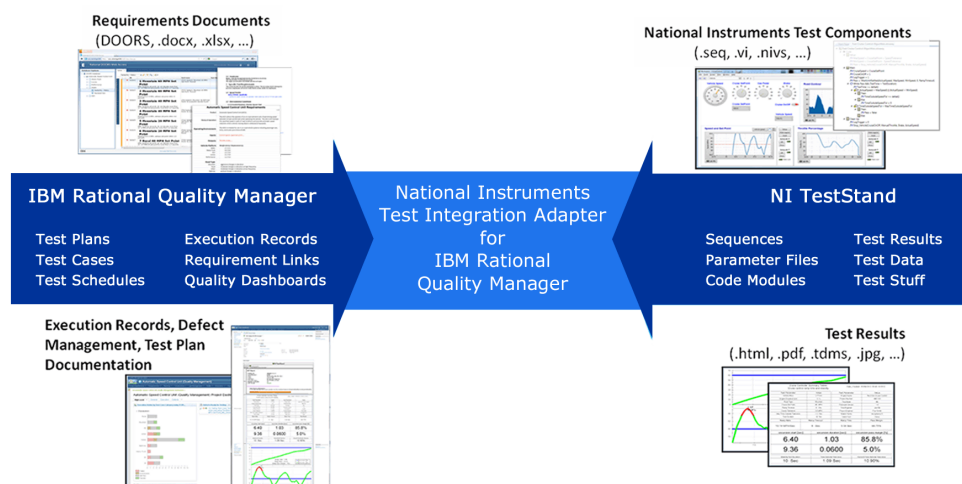
- | Support from IT team at customer site

- Duration

- | 1 day

*Please, contact us for quotation
and additional information*

qmtia_sales@ulmaembedded.com



Setup

Consulting

Training

Push

- **ULMA Consulting** package helps you accelerate

- | Data migration
- | Deployments
- | Tool customization
- | Report customization and generation
- | Backup strategy

- Well suited for

- | Adding other ULMA packages
- | T&M based delivery

- ULMA Team

- | Junior consultant
- | Senior consultant

- Delivery way

- | On-site
- | Remote

- Requires

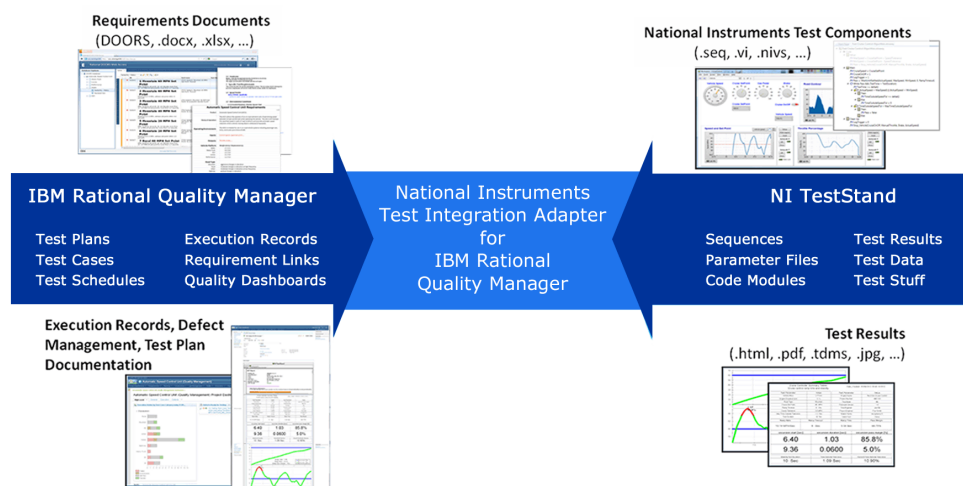
- | Project Owner and Project Manager at customer side
- | Support from IT team at customer site

- Duration

- | Variable

Please, contact us for quotation
and additional information

qmtia_sales@ulmaembedded.com



Setup

Consulting

Training

Push

- **ULMA Training** package helps you accelerate

- | Team enablement

- Well suited for

- | Team tool training
 - | Setting the foundations

- ULMA Team

- | Junior consultant

- Delivery way

- | On-site

- Requires

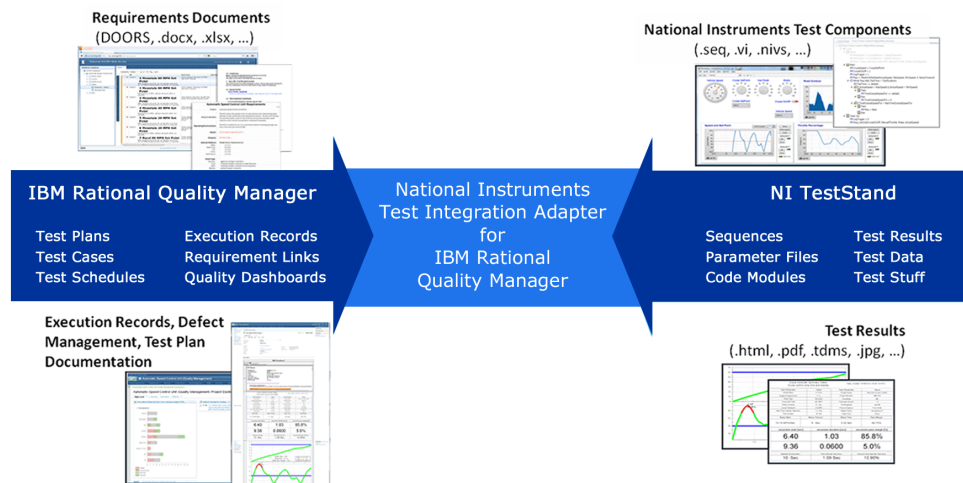
- | Support from IT team at customer site

- Duration

- | 1 day

*Please, contact us for quotation
and additional information*

qmtia_sales@ulmaembedded.com



Setup

Consulting

Training

Push

- **ULMA Push** package helps you accelerate

- | Setup
- | Consulting
- | Training

- Well suited for

- | Activity roadmapping
- | Fast forwarding your project
- | Tight deadlines that require quick take off

- ULMA Team

- | Junior consultant
- | Senior consultant



- Delivery way

- | On-site
- | Remote

- Requires

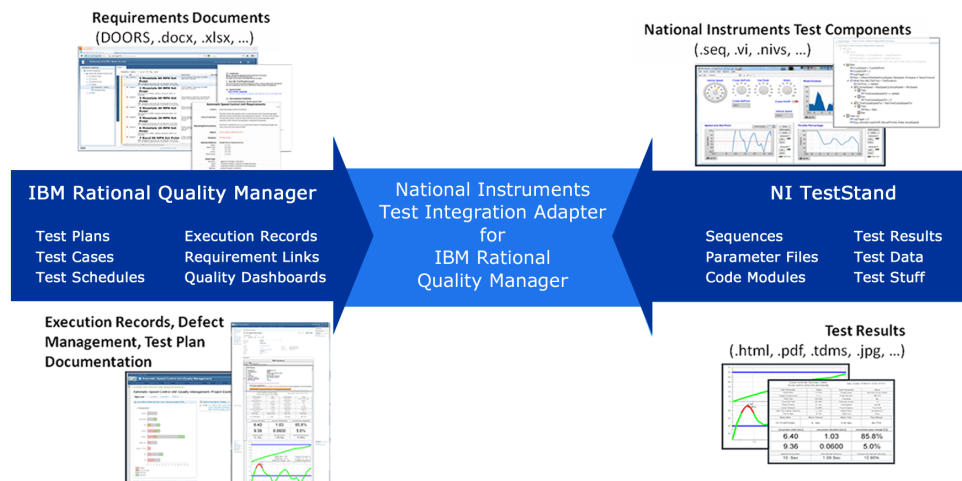
- | Project Owner and Project Manager at customer side
- | Support from IT team at customer site

- Duration

- | Approx 2-4 days

*Please, contact us for quotation
and additional information*

qmtia_sales@ulmaembedded.com



ULMA Embedded Solutions QMTIA

A unique collaborative experience

► ABOUT US



► PARTNERS



► SERVICES

**SYSTEMS
ENGINEERING &
TOOL
INTEGRATION**



**AUTOMATED
SYSTEMS FOR
VALIDATION**



**INDUSTRIAL
IoT
APPLICATIONS**



**CUSTOM
MECHATRONIC
PRODUCT
DEVELOPMENT**



► TOOL INTEGRATION PRODUCTS

DAIA

IBM Rational DOORS and Altium's Altium Designer Integration Adapter

- Requirements traceability to electronic design elements
- Traceability analysis
- Change notifications

QMTIA

IBM Rational Quality Manager and National Instruments TestStand Integration Adapter

- Test case traceability
- Test automation
- Test cases results management

OSLC Adapter for LV

IBM Rational DOORS & National Instrument LabVIEW OSLC Adapter

- Requirements set
- Application development
- App deployment
- Acceptance testing
- Requirements compliance

CERTIFICATIONS



Functional safety engineers
for HW/SW design according
IEC 61508



IBM Rational DOORS & DNG
IBM Rational Rhapsody
IBM Rational Quality Manager



NI Certified LabVIEW Architect &
Champion
NI Certified LabVIEW Developer
NI Certified TestStand Developer



ISO 9001
ISO 15504 · L2 (SPICE)



Professionals for
requirements engineering
Foundation Level



Vector CANoe



Innovative SME



CTFL Professionals



The Reuse Company
Knowledge Manager (KM)

► **STANDARDS** | Critical applications

Root

| IEC 61508

Railway

| EN 50155

| EN 50128

Household appliances

| IEC 60730

Machinery

| ISO 13849

| IEC 62061

| IEC 61800-5

Medical devices

| IEC 60601

| ISO 14971

| IEC 62304

EMC

| EN 60335

| EN 61000

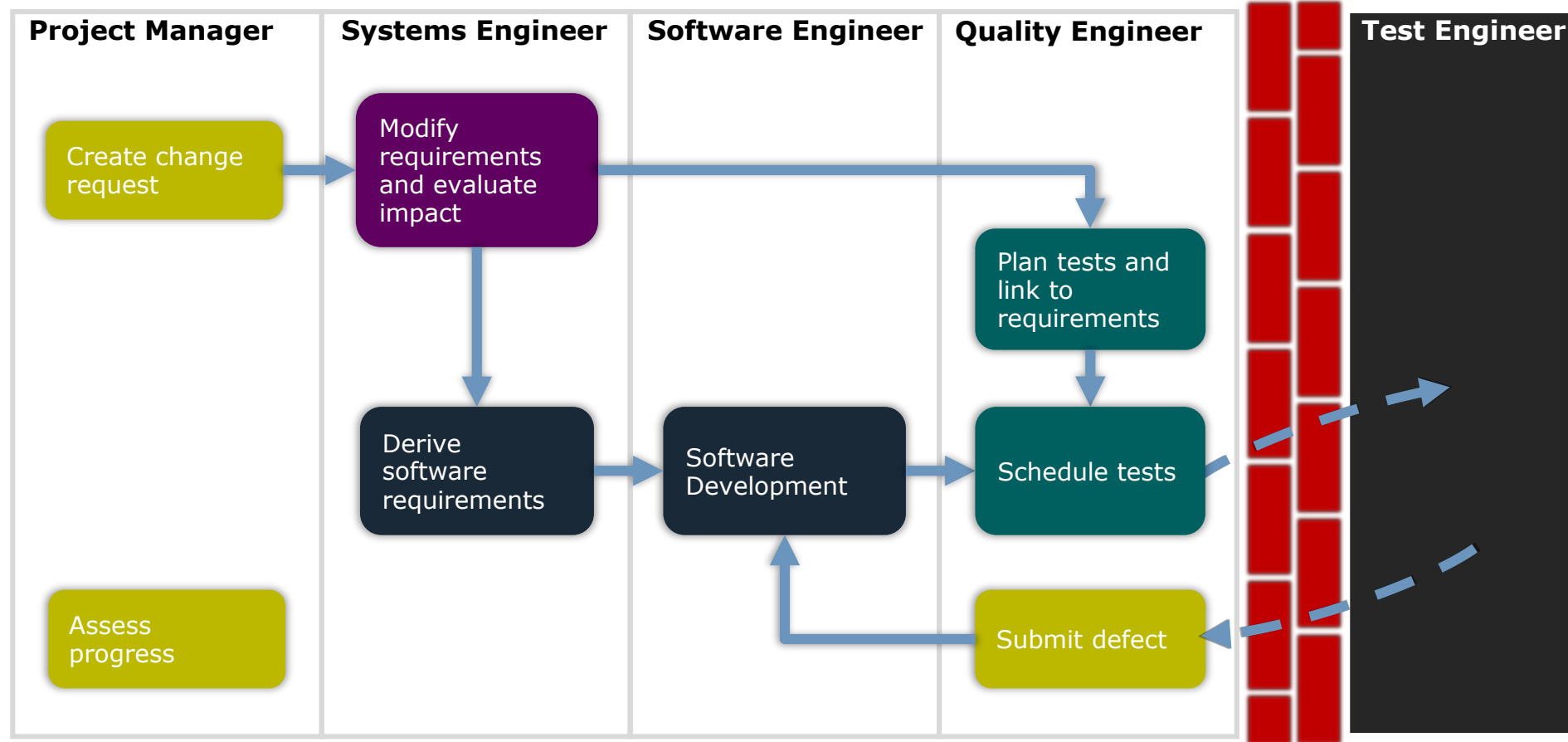
| EN 55025

| ISO 7637

Integrating IBM RQM and National Instruments TestStand with QMTIA

by ULMA Embedded Solutions

► TRADITIONAL DEVELOPMENT PROCESS



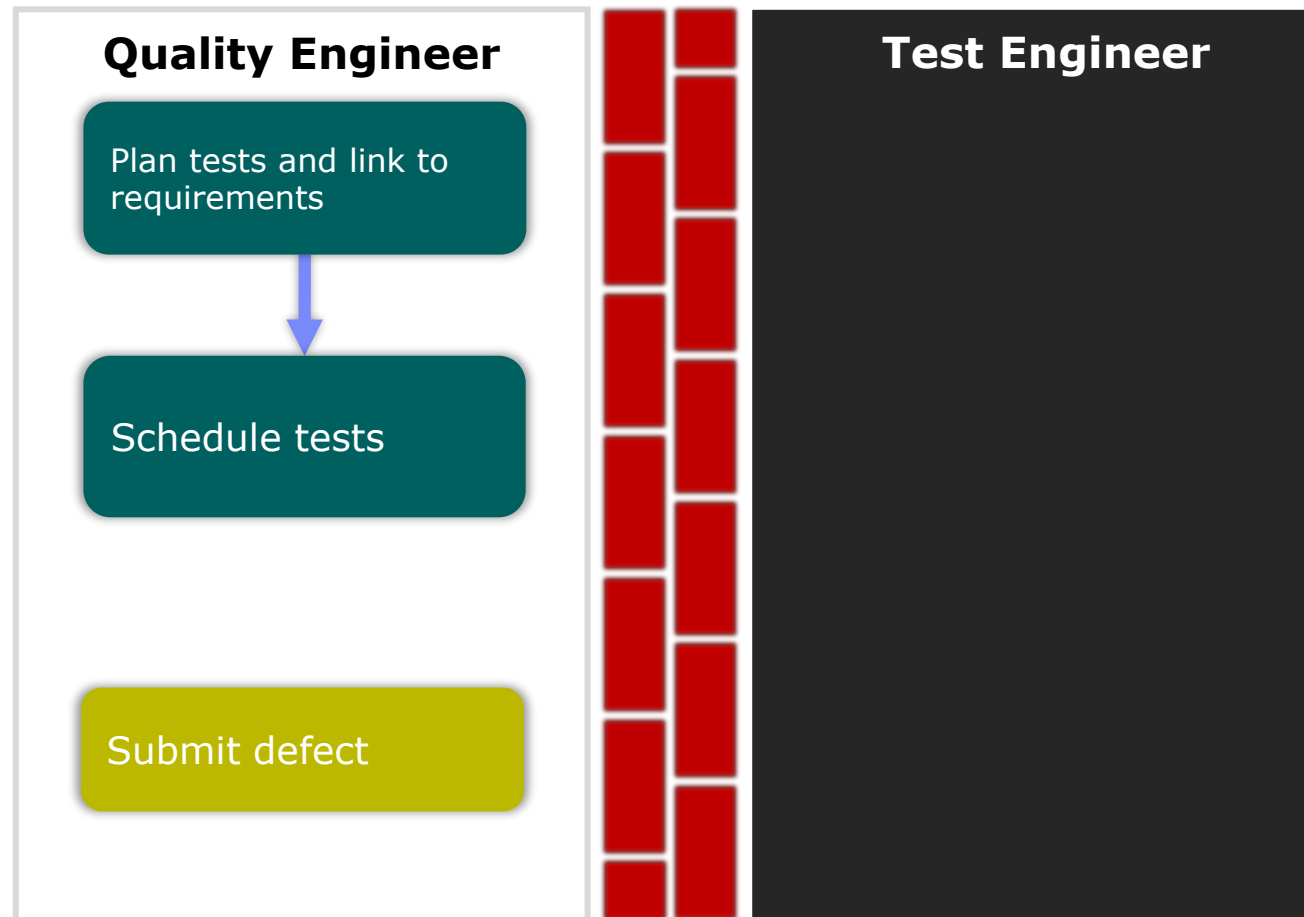
DOORS

Rhapsody

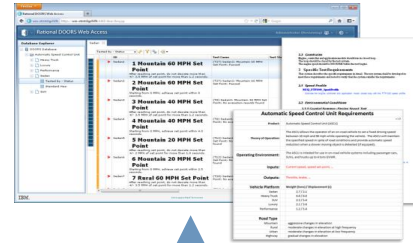
Team Concert

Quality
Manager

► TRADITIONAL DEVELOPMENT PROCESS

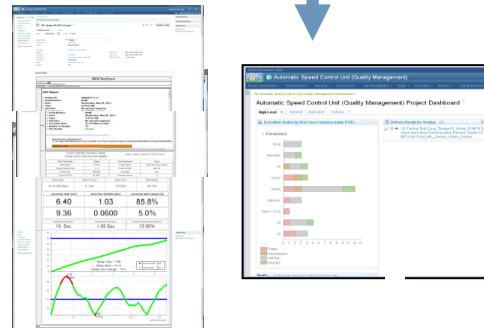


Requirements Documents
(DOORS, .docx, .xlsx, ...)



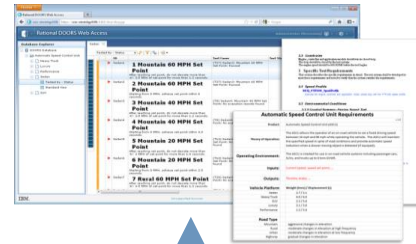
IBM Rational Quality Manager

Execution Records, Defect Management, Test Plan Documentation

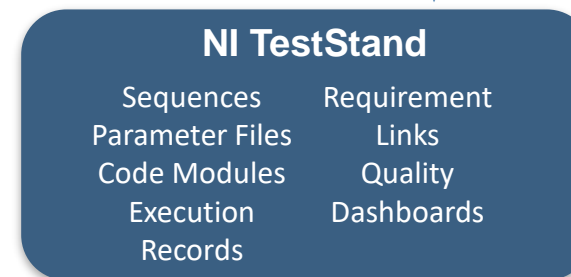
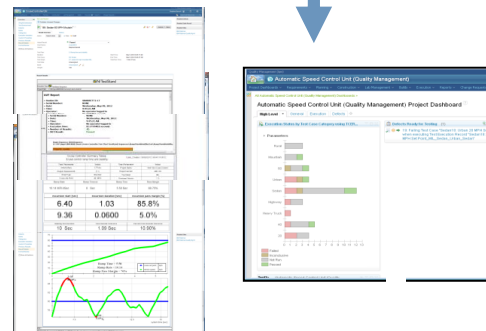


Test Engineer

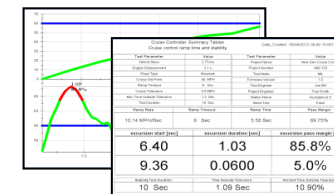
Requirements Documents
(DOORS, .docx, .xlsx, ...)



Execution Records, Defect Management, Test Plan Documentation



Test Results
(.html, .pdf, .tdms, .jpg, ...)



The screenshot displays the Rational DOORS Web Access application. On the left, a sidebar shows a project tree with folders like 'Requirements' and 'Views'. The main pane lists several requirements, including '1 Horeatate 60 MPH Set Point', '2 Horeatate 60 MPH Set Point', '3 Horeatate 60 MPH Set Point', '4 Horeatate 60 MPH Set Point', '5 Horeatate 20 MPH Set Point', '6 Horeatate 20 MPH Set Point', and '7 Rural 60 MPH Set Point'. A pop-up window titled 'Automatic Speed Control Unit Requirements' is open, showing details for requirement '1.1.1 Automatic Speed Control Unit Requirements'. This window includes sections for 'Abstract', 'Description', 'Operating Environment', 'Inputs', 'Outputs', 'Vehicle Inputs', and 'Test Type'.

Automatic Speed Control Unit Requirements

Abstract: Automatic speed control unit requirements for the vehicle.

Description: This document describes the requirements for the automatic speed control unit. The unit is responsible for maintaining the vehicle's speed at a set point, adjusting the throttle and brakes as needed. It must be able to handle various driving conditions and respond to driver inputs.

Operating Environment: The unit must operate in the following environments:

- Highway driving
- Urban driving
- Mountain driving
- Curvy roads
- Variable road conditions

Inputs: The unit receives the following inputs:

- Driver's set point
- Vehicle speed
- Throttle position
- Brake pedal position
- Engine speed
- Vehicle position

Outputs: The unit outputs the following:

- Throttle position
- Brake pedal position
- Engine speed
- Vehicle position

Vehicle Inputs:

Input	Unit	Value
Throttle position	0.000	1.000
Brake pedal position	0.000	1.000
Engine speed	0.000	1.000
Vehicle position	0.000	1.000

Test Type:

- Integration test
- Regression test
- Unit test
- Acceptance test
- Performance test
- Stress test
- Reliability test
- Security test
- Compliance test
- Interoperability test
- Usability test
- Accessibility test
- Localization test
- Internationalization test
- Portability test
- Compatibility test
- Conformance test
- Validation test
- Verification test
- Configuration test
- Deployment test
- Installation test
- Upgrade test
- Downgrade test
- Migration test
- Backup test
- Restore test
- Disaster recovery test
- Business continuity test
- Incident response test
- Security audit test
- Penetration test
- Vulnerability assessment test
- Compliance audit test
- Performance benchmark test
- Load test
- Stress test
- Reliability test
- Security test
- Compliance test
- Interoperability test
- Usability test
- Accessibility test
- Localization test
- Internationalization test
- Portability test
- Compatibility test
- Conformance test
- Validation test
- Verification test
- Configuration test
- Deployment test
- Installation test
- Upgrade test
- Downgrade test
- Migration test
- Backup test
- Restore test
- Disaster recovery test
- Business continuity test
- Incident response test
- Security audit test
- Penetration test
- Vulnerability assessment test
- Compliance audit test
- Performance benchmark test
- Load test

The screenshot displays the NI LabVIEW environment for a vehicle speed monitoring system. The front panel features several analog meters: Velocity Speed (0-160 km/h), Cruise Setpoint (0-160 km/h), Gas Pedal (0-100), Brake (0-100), and Road Condition (0-100). A bar chart also represents the Road Condition. The back panel shows the block diagram with various control and data handling blocks. A code window on the right displays the LabVIEW script for the RoadCondition variable.

```

1  RoadCondition := CreateFromInt
2  RdCond := 0
3  RdCond := RdCond + 1
4  RdCond := RdCond - 1
5  RdCond := RdCond * 2
6  RdCond := RdCond / 2
7  RdCond := RdCond % 100
8  RdCond := RdCond % 100
9  RdCond := RdCond % 100
10 RdCond := RdCond % 100
11 RdCond := RdCond % 100
12 RdCond := RdCond % 100
13 RdCond := RdCond % 100
14 RdCond := RdCond % 100
15 RdCond := RdCond % 100
16 RdCond := RdCond % 100
17 RdCond := RdCond % 100
18 RdCond := RdCond % 100
19 RdCond := RdCond % 100
20 RdCond := RdCond % 100
21 RdCond := RdCond % 100
22 RdCond := RdCond % 100
23 RdCond := RdCond % 100
24 RdCond := RdCond % 100
25 RdCond := RdCond % 100
26 RdCond := RdCond % 100
27 RdCond := RdCond % 100
28 RdCond := RdCond % 100
29 RdCond := RdCond % 100
30 RdCond := RdCond % 100
31 RdCond := RdCond % 100
32 RdCond := RdCond % 100
33 RdCond := RdCond % 100
34 RdCond := RdCond % 100
35 RdCond := RdCond % 100
36 RdCond := RdCond % 100
37 RdCond := RdCond % 100
38 RdCond := RdCond % 100
39 RdCond := RdCond % 100
40 RdCond := RdCond % 100
41 RdCond := RdCond % 100
42 RdCond := RdCond % 100
43 RdCond := RdCond % 100
44 RdCond := RdCond % 100
45 RdCond := RdCond % 100
46 RdCond := RdCond % 100
47 RdCond := RdCond % 100
48 RdCond := RdCond % 100
49 RdCond := RdCond % 100
50 RdCond := RdCond % 100
51 RdCond := RdCond % 100
52 RdCond := RdCond % 100
53 RdCond := RdCond % 100
54 RdCond := RdCond % 100
55 RdCond := RdCond % 100
56 RdCond := RdCond % 100
57 RdCond := RdCond % 100
58 RdCond := RdCond % 100
59 RdCond := RdCond % 100
60 RdCond := RdCond % 100
61 RdCond := RdCond % 100
62 RdCond := RdCond % 100
63 RdCond := RdCond % 100
64 RdCond := RdCond % 100
65 RdCond := RdCond % 100
66 RdCond := RdCond % 100
67 RdCond := RdCond % 100
68 RdCond := RdCond % 100
69 RdCond := RdCond % 100
70 RdCond := RdCond % 100
71 RdCond := RdCond % 100
72 RdCond := RdCond % 100
73 RdCond := RdCond % 100
74 RdCond := RdCond % 100
75 RdCond := RdCond % 100
76 RdCond := RdCond % 100
77 RdCond := RdCond % 100
78 RdCond := RdCond % 100
79 RdCond := RdCond % 100
80 RdCond := RdCond % 100
81 RdCond := RdCond % 100
82 RdCond := RdCond % 100
83 RdCond := RdCond % 100
84 RdCond := RdCond % 100
85 RdCond := RdCond % 100
86 RdCond := RdCond % 100
87 RdCond := RdCond % 100
88 RdCond := RdCond % 100
89 RdCond := RdCond % 100
90 RdCond := RdCond % 100
91 RdCond := RdCond % 100
92 RdCond := RdCond % 100
93 RdCond := RdCond % 100
94 RdCond := RdCond % 100
95 RdCond := RdCond % 100
96 RdCond := RdCond % 100
97 RdCond := RdCond % 100
98 RdCond := RdCond % 100
99 RdCond := RdCond % 100
100 RdCond := RdCond % 100

```



► QMTIA BENEFITS

1. Provides a **bidirectional** connection between IBM RQM and NI TestStand
2. Enhances **test efficiency** by automating test execution and reporting from RQM
3. **Improves product quality** by ensuring lifecycle traceability from requirements down to automated tests and test results
4. **Reduces time to market** thanks to streamlined collaboration between test engineers and other roles

► OUR QMTIA PACKAGED SERVICES

Pkg 1: SET UP

- | Helps you accelerate:
 - Installation
 - Configuration
 - Small deployment
- | 1 day duration
- | On-site / Remote

Pkg 2: TRAINING

- | Helps you accelerate:
 - Team enablement
- | 1 day duration
- | On-site

Pkg 3: CONSULTING

- | Helps you accelerate:
 - Data migration
 - Deployments
 - Tool customization
 - Report customization and generation
 - Backup strategy
- | Variable duration
- | On-site / Remote

Contact us at qmtia_sales@ulmaembedded.com for more information about these services and pricing

► CONTACT US



+34 943 25 03 00



qmtia_sales@ulmaembedded.com



www.ulmaembedded.com



ULMA Embedded Solutions



@ULMA Embedded