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Technical Part 2: RadICS Digital I&C Platform Topical Report

RadICS Development Processes

(Closed Session)

July 14, 2015, Rockville, Maryland



Agenda

- RadICS Development Processes
 - System Level
 - Hardware Level
 - Electronic Design Level
 - Project Specific
- System Requirements Analysis
- Electronic Design Verification & Validation
- Configuration Management

RadICS Development Processes (1/5)

- RadICS Platform Lifecycle Model

RadICS Development Processes (2/5)

- High-level design documents for RadICS platform and projects

RadICS Development Processes (3/5)

- RadICS Module Electronic Design and Implementation

RadICS Development Processes (4/5)

- RadICS Electronic Design Phases Activity Descriptions

RadICS Development Processes (5/5)

- RadICS Electronic Design Phases Activity Descriptions

System Requirements Analysis (1/4)

- High Level RadICS Requirements

System Requirements Analysis (2/4)

- The allocation of RadICS requirements has up to three dimensions:
 - Modules to which they are application (MA = module allocation)
 - Means of meeting the requirement (IA = implementation allocation)
 - Means of V&V (by testing) (TA = test allocation)
- Module allocations used for RadICS are:

System Requirements Analysis (3/4)

- Implementation allocations used for RadICS are:

System Requirements Analysis (4/4)

- Testing allocations used for RadICS are:

Electronic Design Verification & Validation (1/3)

Verification tasks are performed at each stage of design

- Document Verification

- Review and comment using checklist
- Document inspection verifying document to a defined procedure

- Testing involves preparation of test procedures/reports as defined by the corresponding plan and specification
- Requirements tracing involves verifying that all requirements at one level of design are both implemented at the next level and are tested
 - It also reveals if features are introduced at one level of design that are not required by the previous level

Electronic Design Verification & Validation (2/3)

Verification tasks are performed at each stage of design

- Electronic Design Verification

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- Hardware Design Verification

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Validation testing is performed at designated stages of design

- Fault Insertion Test Plan

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Electronic Design Verification & Validation (3/3)

Validation testing is performed at designated stages of design

- Integration Test Plan

- Validation Test Plan

- Testing of the entire product to system requirements

- Function Block Library Component Test Plans

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Configuration Management (1/3)

- RadICS Configuration Items

Configuration Management (2/3)

- RadICS Configuration Management Activities

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Configuration Management (3/3)

- RadICS Change Management Process

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Thank you for your attention!

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