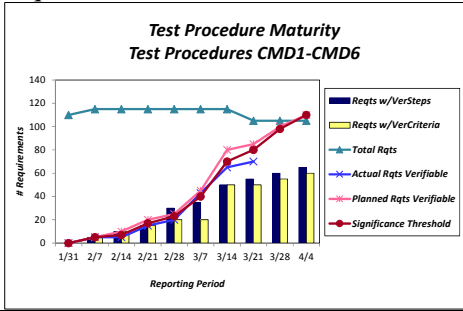


**Measurement Information Specification
Test Procedure Maturity**

Information Need	Information Need	Evaluate the development of 80 test procedures to obtain a weekly assessment of progress and suitability for use in requirements verification.																																																																												
	Information Category	<ol style="list-style-type: none"> Schedule and Progress Product Quality 																																																																												
Measurable Concept	Measurable Concept	<ol style="list-style-type: none"> Work Unit Progress Test Procedure Readiness (new Measurable Concept) 																																																																												
Indicator	Indicator	Test Procedure Maturity Trend																																																																												
	Analysis Model	<p>As test procedure development progresses, Actual Requirements Verifiable should be close to Planned Requirements Verifiable, steadily growing toward 100% of requirements allocated (Total Requirements).</p> <p>When a test procedure's maturity is 90% or greater, then the test procedure is ready for use in requirements verification. If data for a specific collection of test procedures (e.g., for CMD area) falls below the Significance Threshold line (10%), investigate and implement corrective action, as necessary.</p>																																																																												
	Decision Criteria	Significance Threshold is calculated as within 0-10% PlannedReqs Verifiable, consistent with the staffing profile for this task. Only negative variances (behind schedule) are of concern.																																																																												
	Indicator Interpretation	<p>For this indicator, Actual Requirements Verifiable is well outside the decision criteria for this week (for the previous week it was slightly behind). An additional expert was reassigned to help complete the test procedures associated with the requirements that were behind schedule. The experts that were reassigned were developers who had knowledge of the detailed requirements.</p>  <table border="1"> <caption>Test Procedure Maturity Test Procedures CMD1-CMD6</caption> <thead> <tr> <th>Reporting Period</th> <th>Reqs w/VerSteps</th> <th>Reqs w/VerCriteria</th> <th>Total Rqts</th> <th>Actual Rqts Verifiable</th> <th>Planned Rqts Verifiable</th> <th>Significance Threshold</th> </tr> </thead> <tbody> <tr> <td>1/31</td> <td>0</td> <td>0</td> <td>110</td> <td>0</td> <td>0</td> <td>10</td> </tr> <tr> <td>2/7</td> <td>0</td> <td>0</td> <td>110</td> <td>0</td> <td>0</td> <td>10</td> </tr> <tr> <td>2/14</td> <td>0</td> <td>0</td> <td>110</td> <td>0</td> <td>0</td> <td>10</td> </tr> <tr> <td>2/21</td> <td>0</td> <td>0</td> <td>110</td> <td>0</td> <td>0</td> <td>10</td> </tr> <tr> <td>2/28</td> <td>0</td> <td>0</td> <td>110</td> <td>0</td> <td>0</td> <td>10</td> </tr> <tr> <td>3/7</td> <td>0</td> <td>0</td> <td>110</td> <td>0</td> <td>0</td> <td>10</td> </tr> <tr> <td>3/14</td> <td>0</td> <td>0</td> <td>110</td> <td>0</td> <td>0</td> <td>10</td> </tr> <tr> <td>3/21</td> <td>0</td> <td>0</td> <td>110</td> <td>0</td> <td>0</td> <td>10</td> </tr> <tr> <td>3/28</td> <td>0</td> <td>0</td> <td>110</td> <td>0</td> <td>0</td> <td>10</td> </tr> <tr> <td>4/4</td> <td>0</td> <td>0</td> <td>110</td> <td>0</td> <td>0</td> <td>10</td> </tr> </tbody> </table>	Reporting Period	Reqs w/VerSteps	Reqs w/VerCriteria	Total Rqts	Actual Rqts Verifiable	Planned Rqts Verifiable	Significance Threshold	1/31	0	0	110	0	0	10	2/7	0	0	110	0	0	10	2/14	0	0	110	0	0	10	2/21	0	0	110	0	0	10	2/28	0	0	110	0	0	10	3/7	0	0	110	0	0	10	3/14	0	0	110	0	0	10	3/21	0	0	110	0	0	10	3/28	0	0	110	0	0	10	4/4	0	0	110	0	0
Reporting Period	Reqs w/VerSteps	Reqs w/VerCriteria	Total Rqts	Actual Rqts Verifiable	Planned Rqts Verifiable	Significance Threshold																																																																								
1/31	0	0	110	0	0	10																																																																								
2/7	0	0	110	0	0	10																																																																								
2/14	0	0	110	0	0	10																																																																								
2/21	0	0	110	0	0	10																																																																								
2/28	0	0	110	0	0	10																																																																								
3/7	0	0	110	0	0	10																																																																								
3/14	0	0	110	0	0	10																																																																								
3/21	0	0	110	0	0	10																																																																								
3/28	0	0	110	0	0	10																																																																								
4/4	0	0	110	0	0	10																																																																								
Derived Measure	Derived Measure	None																																																																												
	Measurement Function	N/A																																																																												

Measure Name: Test Procedure Maturity		
Measurement Specification (cont.)		
Base Measure	Base Measures	<ol style="list-style-type: none"> 1. Total number of requirements allocated to test procedure (TotReqs) 2. Number of requirements from (1) for which all steps (execution, data collection, and data analysis) are complete (ReqtswVerSteps) 3. Number of requirements from (1) for which verification criteria are consistent with the requirement (ReqtswVerCriteria) 4. Number of requirements from (1) for which all steps are complete AND all verification criteria are consistent (ActualReqsVerifiable) 5. Planned number of requirements verifiable (PlannedReqsVerifiable)
	Measurement Method	<ol style="list-style-type: none"> 1. For each test procedure, count the number of requirements allocated. 2. Estimate the effort to prepare/review verification steps and criteria for each requirement and define a target date for completion. For each week, count the number of requirements that are planned to be completed that week (PlannedReqsVerifiable). <p>For each requirement allocated to the test procedure:</p> <ul style="list-style-type: none"> • Read the requirement text. • Review the test procedure steps and verification criteria. <ol style="list-style-type: none"> 3. If the steps are complete, add 1 to ReqtswVerSteps. 4. If the verification criteria are consistent with the requirement text, add 1 to ReqtswVerCriteria. 5. If both conditions above (in (2) and (3)) are true, add 1 to ActualReqsVerifiable.
	Type of Method	<ol style="list-style-type: none"> 1. Objective 2-5. Subjective (with well-defined rules for assigning values)
	Scale	1-5. Integers from zero to infinity
	Type of Scale	1-5. Ratio
	Unit of Measurement	1-5. Requirement
	Attribute	Relevant Entities
	Attributes	<ul style="list-style-type: none"> • Number of requirements allocated to test procedure • Number of requirements allocated to test procedure, for which test procedure contains complete and correct verification steps

Measure Name: Test Procedure Maturity	
Data Collection Procedure (for each Base Measure)	
Frequency of Data Collection	1-2. At the start of test planning 3-5. Concurrent with test procedure review
Responsible Individual	1-2. Supplier management 3-5. Acquirer project engineer, assisted by software experts in the role of test procedure reviewers
Phase or Activity in which Collected	Code and Unit Test (i.e., during Test Procedure generation)
Tools Used in Data Collection	Excel Spreadsheet
Verification and Validation	Review with supplier test team
Repository for Collected Data	Acquirer Excel spreadsheet

Data Analysis Procedure	
Frequency of Data Reporting	Weekly
Responsible Individual	Acquirer project engineer, assisted by software experts in the role of test procedure reviewers
Phase or Activity in which Analyzed	Code and Unit Test (i.e., during Test Procedure generation)
Source of Data for Analysis	Supplier test procedures Requirements and design documents
Tools Used in Analysis	Excel Spreadsheet
Review, Report, or User	Test Procedure Maturity report, supplied to acquirer program management personnel and supplier development and management personnel

