A Standard Test Process Assessment Method?
The case for Test Maturity Model!

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ICSTest – 28 September 2005
Agenda

- Why do we need a test process assessment model?
- What contenders to the crown?
- Why and what is TMM?
- The TMMi Foundation
- Proposed Structure of TMMi
Why do we need it?

- IT ever more complex
- Growth in CMM/CMMi & other models to improve processes
- Test Discipline maturing; what is there to assess test & test-related quality processes in depth?
- How do you assess the quality of the testing process that supposedly demonstrates quality?
Motivators

- What are the testing capabilities internally & of external suppliers? Ensure Regulatory & other Governance?
- Need objective robust assessment method, clearly understood by all
- Need to develop a structured test process improvement framework
- Want to identify improvement opportunities in an action plan with realistic timescales
- Extend institutionalisation of good practices
- Need to integrate seamlessly with project lifecycle... often geographically challenged!
Other Contenders

- Test Process Improvement (TPI) - continuous model and flexible to organisation
- Test Improvement Model (TIM) – Based on CMM but not as extensive in KPAs nor as detailed
- CMM/CMMI – improving but still no depth in test areas
- SPICE – Doesn’t address in sufficient detail
- TOM – good but protected
Why TMM?

- We decided on TMM because:
  - We can use experience and structure of CMM/CMMi assessments and qualified CMM Assessors
  - TMM can be developed as a staged or continuous assessment model
  - TMM can be used in isolation (of overall assessment models)...
  - In reality supports CMMi & other process maturity models, but concentrates on testing!
  - Is robust and readily understood by all – results & certification
  - Robust, structured, common Process Improvement Road Maps result
The current TMM Structure

5 Maturity Levels

Testing Capability

Indicate

Maturity Goals (KPA)

Contain

Maturity Sub-Goals (Goals)

Supported by

Activities / Tasks / Responsibilities (KPs)

Achieved by

Organised by

Critical Views (SPs)

Address

Implementation and Organisation Adoption

Manager

Developer / Tester

User / Client

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## TMM Levels

<table>
<thead>
<tr>
<th>TMM Levels</th>
<th>CMMI Levels</th>
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<tbody>
<tr>
<td><strong>Level 5 : Optimisation, Defect Prevention &amp; Quality Control</strong></td>
<td><strong>Level 5 : Optimisation</strong></td>
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<tr>
<td>Use process data for defect prevention</td>
<td>2 process areas</td>
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<tr>
<td>Quality control</td>
<td></td>
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<tr>
<td>Test process optimisation</td>
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<tr>
<td><strong>Level 4 : Management &amp; Measurement</strong></td>
<td><strong>Management &amp; Measurement</strong></td>
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<tr>
<td>Establish an organisational review programme</td>
<td>2 process areas</td>
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<tr>
<td>Establish a test measurement programme</td>
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<td>Software quality evaluation</td>
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<td><strong>Level 3 : Integration</strong></td>
<td><strong>Level 3 : Integration</strong></td>
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<tr>
<td>Establish a software test organisation</td>
<td>14 process areas (including Verification and Validation)</td>
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<td>Integrate testing into the project lifecycle</td>
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<td>Establish a test/technical training programme</td>
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<td>Control and monitor testing</td>
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<td><strong>Level 2 : Phase Definition</strong></td>
<td><strong>Level 2 : Phase Definition</strong></td>
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<tr>
<td>Develop testing and debugging goals</td>
<td>7 process areas</td>
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<tr>
<td>Initiate test planning process</td>
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<tr>
<td>Institutionalise basic techniques and methods</td>
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<tr>
<td><strong>Level 1 : Initial</strong></td>
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The TMMi Foundation

Why?

- Independent reference model development as trusted anchor for enterprise process improvement
- Integrate existing company-driven initiatives into best of breed Reference Model
- Establish basis for international test assessment standards
- Provide standard, robust Assessment Benchmarking Accreditation & Certification
- Develop public industry benchmarking data
- No other initiatives evident around the world
TMMi Foundation Objectives

- The TMMi™ Foundation proposes developing:
  - A standard TMMi™ Assessment Model that can be used in isolation or in support of wider Process Assessment models and is either staged or continuous.
  - Assessment Method Accreditation/Audit Framework for TMMi™ in accordance with ISO15504 and the process to certify commercial assessment methods against the standard model.
  - Certification and training/examination process, procedures and standards for formal, public accreditation of Assessors and Lead Assessors and the on-going management
  - An independently managed data repository to support TMMi™ assessment method accreditation, assessor and assessment certification/validation and validated assessment data and certificates.
Structure of TMMi Foundation

- Non-profit making body registered in UK
- European Board (8 members)
- Global interest/user base
- Links to SEI & Illinois Institute of Technology
- Working parties develop; large expert review panels
- Reference model & industry benchmarking data placed in public domain
Proposed TMMi Reference Model

- 3 Classes of assessment in line with ISO 15504
- Reference Model developed further in line with CMMi (cover missing elements such as Test Environments etc. and cater for progress in other models)
- Concept of Lead Assessors and Assessors trained, certified and accredited
- Based on interviews, artefacts and standard rating system; all depersonalised
- Standard, repeatable and robust assessments which are verifiable and auditable; process certification available
Benefits

- TMMi Foundation is the independent mechanism only; sole interest in developing industry standard!
- Works with and listens to IT practitioners
- Develops in line with other standard Quality & Process Models/Methods
- Common, international standard!
- Production of benchmark data in public domain
Contact us!

- If interested, please:
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