



# *The Rapid Assessment of Software Process Capability*

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# Outline

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# *Introduction*

- ⇒ **Process assessment is typically seen as requiring intensive use of resources**
- ⇒ **the importance of assessment in improvement projects for small and medium size enterprises, and correctly identifies the need for a specific approach to such assessment**
- ⇒ **A key issue for many small and medium size companies - in particular - is the ability to obtain meaningful and reliable evaluations of capability with limited investment of time and resource**



# *Design Concerns*

- ⇒ **The assessment is conducted within a one-day timeframe.**
- ⇒ **The assessment is based upon an assessment model of limited scope, with a standard set of eight processes**
  - **the high level Software Development process (ENG.1) is assessed as a whole**
- ⇒ **The competence and experience of the assessors is seen as of primary importance.**
- ⇒ **Data collection is limited to the single technique of moderated discussion by performers of the processes.**
- ⇒ **Generation of ratings of capability is performed by a process of consensus-gathering.**



*RAPID*

**Rapid  
Assessment for  
Process  
Improvement in software  
Development**

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# Scope of the Assessment

|                                 |                |
|---------------------------------|----------------|
| <b>Requirements Gathering</b>   | <b>CUS.3</b>   |
| <b>Software Development</b>     | <b>ENG.1</b>   |
| <b>Project Management</b>       | <b>MAN.2</b>   |
| <b>Configuration Management</b> | <b>SUP.2</b>   |
| <b>Quality Assurance</b>        | <b>SUP.3</b>   |
| <b>Problem Resolution</b>       | <b>SUP.8</b>   |
| <b>Risk Management</b>          | <b>MAN.4</b>   |
| <b>Process Establishment</b>    | <b>ORG.2.1</b> |

- The Capability Dimension of the assessment model is identical in structure to that in ISO 15504-2;
  - for most assessments, the scope of the model is limited to Levels 1, 2 and 3.



# *Assessment Instrument*

- ⇒ **There is a complete set of questions / indicators for each process across all capability levels**
  - this provides a set of 210 questions in the model.
- ⇒ **The questions / indicators are based on**
  - an analysis of the outcomes of the processes,
  - the results of achievement of the various process attributes for each capability level.
- ⇒ **The assessment model is incorporated into a paper-based assessment instrument which is employed as the basis for the discussions in the assessment;**
  - all participants are provided with a copy of the instrument.



# Assessor Roles

- ⇒ **RAPID places substantial emphasis on assessor competence for the method.**
- ⇒ **The two assessors conducting the assessment adopt two roles - team leader and support assessor.**
- ⇒ **The team leader:**
  - prepares the plan of the assessment with the sponsor of the organization
  - during the assessment facilitates the discussion of the capabilities of the processes by encouraging frank and open discussion about the activities of the organization.
- ⇒ **The support assessor:**
  - records the evidence discussed against the relevant sections of the assessment instrument.





# Issues in Conducting Assessments

- ⇒ **Organisational demographics are collected before the site visit.**
- ⇒ **The first part of the site visit is restricted to discussion of Requirements Gathering and Software Development.**
- ⇒ **The remaining supporting processes can usually be discussed much more quickly on the basis of the earlier agreements.**
- ⇒ **Key findings focus on:**
  - **Strengths of the organisation.**
  - **Risks and improvement opportunities identified in the discussions.**



# Application

- ⇒ **25 assessments conducted so far.**
- ⇒ **Size range from 3 to 120 staff.**
  - average 10 - 12 staff
- ⇒ **All commercial software developers using leading-edge technologies.**
- ⇒ **intimate knowledge of their selected market.**
  - very close relationship with their clientele
  - good understanding of their clientele's requirements

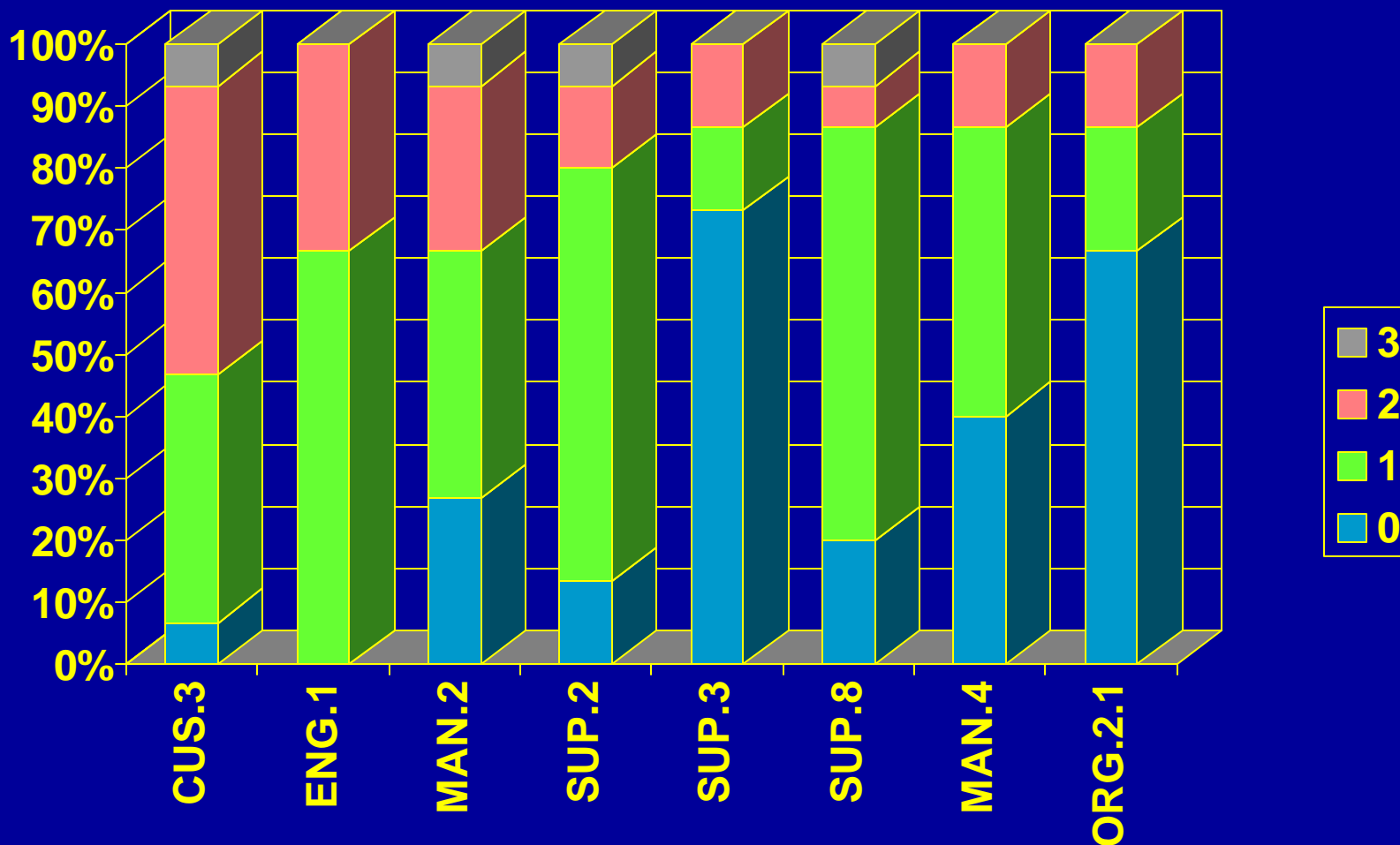


# Investment costs

| Task                                       | Person(s) involved  | Typical Effort                |
|--|---|-------------------------------|
| Prepare and send demographic questionnaire | Team leader   | 15 minutes                    |
| Complete demographic questionnaire         | Sponsor   | 15 minutes                    |
| Prepare Assessment Plan                    | Team leader   | 30 minutes                    |
| Prepare Assessment Instrument              | Team leader   | 30 minutes                    |
| Conduct RAPID Assessment                   | Team leader<br>Support Assessor<br>Organization<br>Participants | 8 hours<br>8 hours<br>8 hours |
| Prepare Assessment Report                  | Team leader<br>Support Assessor                                 | 6 hours<br>4 hours            |



# Results



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# *Validation Strategy*

- ⇒ **Up to 5 of the assessed organisations will have a full assessment of capability (based on ISO 15504-5) conducted.**
- ⇒ **Results will be compared with the RAPID results.**
- ⇒ **Two validation assessments have been performed so far, and results are highly consistent.**
  - **Significant differences can be explained by weaknesses in the method and/or model, and these are being improved.**



# Conclusions

- ⇒ **The strength of RAPID lies in the customer's involvement with the assessment.**
- ⇒ **The restricted scope and the timeframe of one-day, makes RAPID a feasible assessment approach for small organizations.**
  - The cost of performing the assessment is not exorbitant.
  - It also has strong potential for performance of snapshot assessments on projects within the larger organization
- ⇒ **Benchmarking information can be provided quickly for organizations assessed using RAPID.**
- ⇒ **Feedback from participants has been uniformly positive.**