COSYSMO-IP
COnstructive SYStems Engineering Cost Model – Information Processing
“Headed in a new direction…”

Workshop Outbrief

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Outline

• Workshop Objectives
• Issues and Answers
• Calendar of activities/milestones
• 8 Action items
Objectives of the Workshop

- Reach consensus on resolving the issues
- Converge on scope of COSYSMO-IP model
- Address INCOSE issues
- Address definitions of model parameters
- Discuss data collection process
- Promote involvement by Affiliates
- Define next steps for CSI and INCOSE conferences

Issues and Answers

<table>
<thead>
<tr>
<th>Issue</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application scope</td>
<td>COSYSMO-IP first</td>
</tr>
<tr>
<td>Life Cycle scope</td>
<td>Currently front-end; negotiable</td>
</tr>
<tr>
<td>Too many size drivers</td>
<td>Reduced from 7 to 4</td>
</tr>
<tr>
<td>Conflicting cost drivers</td>
<td>Reduced from 17 to 12</td>
</tr>
<tr>
<td>Too software-oriented</td>
<td>IP systems include HW</td>
</tr>
<tr>
<td>Overlap between COSYSMO and CII</td>
<td>Candidate starting point identified</td>
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COSYSMO-IP: What is it?

The purpose of the COSYSMO project is to develop a parametric model to estimate the cost of system engineering activities during system lifecycle.

The focus of the initial increment, COSYSMO-IP, is on the cost of systems engineering for information processing systems or subsystems.

Candidate COSYSMO Evolution Path (before)

<table>
<thead>
<tr>
<th>Inception</th>
<th>Elaboration</th>
<th>Construction</th>
<th>Oper Test &amp; Eval</th>
<th>Transition</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP (Sub)system</td>
<td>1. COSYSMO-IP</td>
<td>2. COSYSMO-C4ISR</td>
<td>3. COSYSMO-Machine</td>
<td>4. COSYSMO-SoS</td>
</tr>
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</table>
INCOSE view of COSYSMO Evolution Path

How much of the lifecycle and how many of the domains? Initiate data collection for all and let the amount of data received determine what is included.

1. COSYSMO-IP
2. COSYSMO-C4ISR
3. COSYSMO-Machine
4. COSYSMO-SoS

Breadth and Depth of Key SE Standards

ISO/IEC 15288 - Establish a common framework for describing the life cycle of systems

EIA/ANSI 632 - Provide an integrated set of fundamental processes to aid a developer in the engineering or re-engineering of a system

IEEE 1220 - Provide a standard for managing systems engineering
ISO/IEC 15288 System of Interest Structure

Calendar of Activities: 2003
Action Item #1: Project Plan

- Prepare a COSYSMO Project Plan and Schedule.
  - Include monthly telecoms
  - Include quarterly face-to-face meetings
  - Account for opportunities to communicate with larger community audience at: PSM (Feb 19-20 – Herndon, VA, Jul 14-18 – Keystone, CO), INCOSE (Feb 3-7 – Tampa, FL, June 28-Jul 3 – Washington, DC), STC (Apr-May – Salt Lake City, UT), USC ARR (March), CSI (March), COCOMO (October)
    - INCOSE – preparation and work
    - PSM – cleanup and data dissemination
- Send Plan to COSYSMO WG for review and approval
- RI: Ricardo, Chris, Barry, Roger Shepherd
- Due Date: November 15, 2002

Action Item #2: Technology Maturity/Obsolescence

- Integrate concept of technology obsolescence as part of the technology maturity cost driver and change the cost driver title to Technology Risk
- RI: Ricardo, Ron Kohl, Don Reifer
- Due Date: November 15, 2002
Action Item #3: Driver Definitions

- Complete definition of new COSYSMO Drivers. Refine definitions based on 10/24/02 Workshop and forward to WG for assessment.
- RI: Ricardo, Marilee
- Due Date: November 8, 2002

Action Item #4: System and People

- Research how to involve the composition of a system – Hardware, Software, People, and Procedures. How do we account for the different types of systems as it relates to these components as related to the Drivers?
- RI: Ricardo, Garry
- Due Date: December 3, 2002
Action Item #5: Drivers Applicability Matrix

- Expand Applicability Matrix to include the entire SE Lifecycle and identify the applicability of all Drivers against the expanded matrix. Baseline lifecycle is EIA 632 using ISO/IEC 15288 for the late stages.
- RI: Gary², Garry
- Due Date: December 3, 2002

Action Item #6: Data Collection

- Research whether or not the currently collected data for the COCOMO II:2003 calibration contains data that can be mapped to the Systems Engineering Drivers.
- RI: Gary Thomas, Brad Clark, Chris Miller, Barry Boehm
- Due Date: December 15, 2002
Action Item #7: Data Collection Form

- Generate template(s) for COSYSMO DELPHI and Project data collections.
- RI: Ricardo
- Due Date: December 15, 2002

Action Item #8: Stakeholder Cohesion

- Modify definition to include more diversity, identification and trust.
  Reference: Table A-6 in COCOMO II Text (page 309).
- RI: Ricardo, Steven, George
- Due Date: December 15, 2002
Conclusion

Great effort and participation on everyone’s part!

Special thanks to LaDonna, Paul, Maggie, Sarah Christal, and the rest of the CSE Staff for coordinating the logistics and the FOOD.

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