

# SE Leading Indicators Workshop



*Garry Roedler*  
*Donna Rhodes*  
*Cheryl Jones*  
*Howard Schimmoller*

## SYSTEMS ENGINEERING LEADING INDICATORS GUIDE

Version 1.0

June 15, 2007  
*Supersedes Beta Release, December 2005*

### Editors

Garry Roedler  
Lockheed Martin Corporation  
[garry.j.roedler@lmco.com](mailto:garry.j.roedler@lmco.com)

Donna H. Rhodes  
Massachusetts Institute of Technology  
[rhodes@mit.edu](mailto:rhodes@mit.edu)

Developed and Published by Members of



INCOSE Technical Product Number: INCOSE-TP-2005-001-02

# Workshop Agenda

- 1:30 Introduction and Objectives to Baseline New Participants (Garry Roedler and Howard Schimmoller)
- 1:45 Review of draft document update; reformatting and measurement matrix (Howard Schimmoller)
- 2:00 Discussion of outstanding sections, not yet reviewed (20 minutes each)
  - Test Completeness (Mike Uchino, and Tom Wissink)
  - Algorithm & Scenario Trends (Gan Wang, Al Shernoff, and John Rieff)
  - Architecture Trends (Bob Swarz, and John Rieff)
- 3:00 Break
- 3:10 Discussion of selected/updated sections already reviewed by the team in telecons (20 minutes each - based on speaker availability and status to update)
  - Review of Complexity Change Trends (Sarah Sheard and Dave Henry)
  - Review of Affordability Trends (Reggie Cole, John Gaffney, and Howard Schimmoller)
  - Defect and Error Trends (John Gaffney, Dave Henry, Bob Welldon, Winsor Brown, Trindy LeForge, and Cheryl Jones) includes Defects Escape Trends (Jerry Fisher)
- 4:10 Presentation of additional potential NAVAIR Indicators (Greg Hein)
- 4:40 Review UERC Activities (Garry Roedler)
  - Highlighting coordination efforts with complimentary industry efforts

# SE Leading Indicators Guide

## Revision

*Garry Roedler  
Donna Rhodes  
Cheryl Jones  
Howard Schimmoller*



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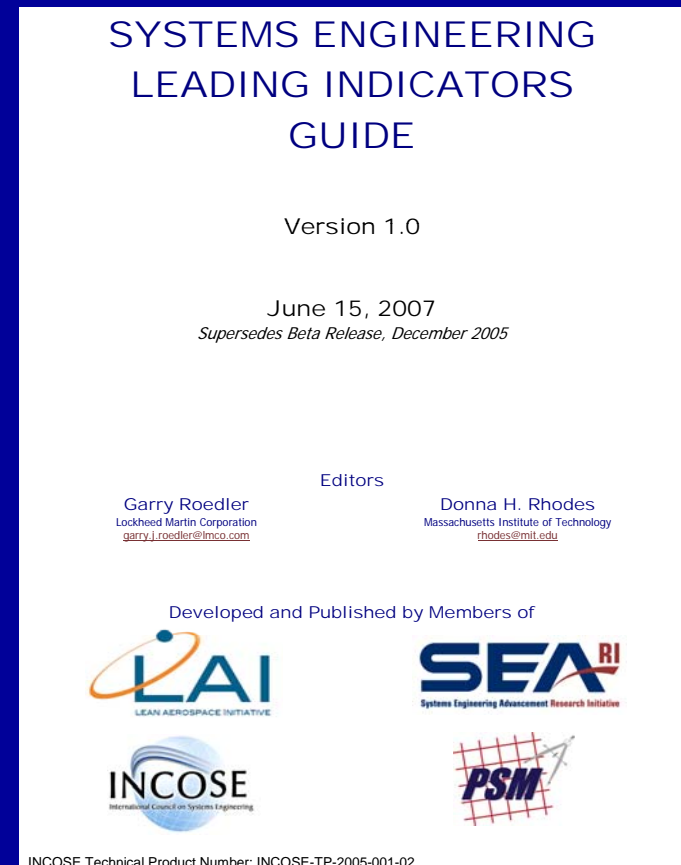
# Introductions

# Today's Objectives

- Continue the progress made to date
- Review update paradigms
- Discuss proposed section additions/updates
- Review coordination efforts with complimentary industry efforts
- Final confirmation of new/updated indicators - as applicable, based on maturity

# Existing SE LI Guide

- Collaborative effort across industry and academia
- Initial release after 18 month beta period
  - Including several workshops here at PSM



# Priorities for the Revision

## 1. Matrices to show specific relationships

- Cost-effective sets of Base Measures that support greatest number of indicators
  - Strong utility
  - Not likely to be a one-size-fits-all
    - ❖ May differ by type of program (requiring multiple tables)
- Indicators vs. SE Activities
  - Most valuable at process level (use ISO/IEC 15288)
  - Concern about making too large if lower level

Chris Miller,  
Howard Schimmoller,  
Jim McCurley

Reggie Cole,  
Garry Roedler

## 2. Changes to existing Indicator Specifications

- Improve "Leading Insight Provided"
- Add general interpretation/implementation considerations
  - E.g., expectations may be phase/time dependent
- Add timing information – when to collect and when to take action
- Rollup – how and when you can roll up the measurement information
- More uniform format of indicator examples

Mark Mithers  
-Reqs Indicators  
Reggie Cole to  
supply info

# Priorities for the Revision

## 3. Revise definition of SE Leading Indicators as follows:

- An individual measure or collection of measures that are *predictive of future system engineering performance, system performance [, or ability to implement the system (from a systems engineering perspective)]*.
  - Predictive information (e.g., trends or relationships) is provided before the performance is adversely impacted.
  - Linked to business/project objectives.
  - Aids leadership by providing insight to take actions regarding:
    - ❖ Assessment of process effectiveness and impacts
    - ❖ Necessary interventions and actions to avoid rework and wasted effort
    - ❖ Delivering value to customers and end users

## 4. Revise document format

- Add descriptive information to indicators in exec summary table – rename section to Introduction
- Combine sections 3 and 4 together
- Create a set of exec briefing charts
  - In section use indents to guide users to level of detail
  - Possibly add a roadmap to document
- Look at LM Aero example format for Measurement & Analysis Process guide AC5597

Leadership Team  
Lead, Howard Schimmoller



# New Indicators Authors

- New indicators (no particular order)
  1. Test Completeness (Mike Uchino, Tom Wissink)
  2. Resource Volatility (Carl Schaeffers, Ricardo Valerdi)
  3. Complexity Change Trends (Sarah Sheard, Dave Henry)
  4. Defect and Error Trends (John Gaffney, Dave Henry, Bob Welldon, Winsor Brown, Trindy LeForge, and Cheryl Jones) includes Defects Escape Trends (Jerry Fisher)
  5. Algorithm & Scenario Trends (Gan Wang, Al Shernoff, John Rieff)
  6. Architecture Trends (Bob Swarz, John Rieff)
  7. Review of Affordability Trends (Reggie Cole, John Gaffney, and Howard Schimmoller)
  8. Defect and Error Trends (John Gaffney, Dave Henry, Bob Welldon, Winsor Brown, Trindy LeForge, and Cheryl Jones) includes Defects Escape Trends (Jerry Fisher)
- Additional scope
  1. Concept Development – May want to consider based on needs identified by UARC EM task

# Going Forward

- Team operation to work revision
  - Will conduct telecon meetings for most of the work
    - Approximately every 3 weeks
    - 2-hour working sessions
    - Use dial-in number and web connection
  - Will have 1-2 Face-to-face meeting (near completion)
    - One is the PSM User Group workshop
- Schedule
  - Began telecon meetings in Feb 2009
  - Target Oct/Nov 2009 for release of revision
- Ongoing coordination
  - Communication with collaboration stakeholders through team representative
  - Invite wider collaboration stakeholder review at key points
  - Support and leverage UARC research