Revitalizing Systems Engineering

Mark Adducchio, SMSG

17 May 2005

Overview

- System Engineering Policy/Guidance

- Simulator Systems Group Activities

- Implementation Plans

- TSA III Concept

- Summary

Policy/Guidance

- OUSD for Acquisition, Technology, and Logistics (AT&L) SE Policy Memo 20 Feb '04
- OUSD for Acquisition, Technology, and Logistics (AT&L) Policy Addendum 22 Oct '04
- Secretary of the Air Force for Acquisition (SAF/AQ) Policy Memo #03A-035 9 Apr '03
- ASC/CC Policy Memo #04-024, 4 Oct 04
- ASC Engineering Directorate Implementation Guidance Memo, 18 Jan 05
- AFIT/SY Center for Systems Engineering
- ASC/AE Acquisition Center of Excellence

SMSG Activities

- Systems Engineering Forum
  - Meeting with Industry in July 2004
  - Kicked off SMSG systems engineering revitalization effort
  - Initial follow-up at I/ITSEC 2004
- SMSG systems engineering maturity evaluation in process
  - Used SE-CMM assessment for the basis
  - Identified systems engineering problem areas
  - IPTs to address SMSG systems engineering maturity issues
  - Goal is continual process improvement

SMSG Activities (Con't)

- Systems engineering OI
  - SMSG internal implementation document
  - Systems engineering processes to be documented in a tailored program SEP
  - Establishes SMSG technical reviews
  - Describes government technical team's responsibilities
  - Identifies systems engineering procedures to follow
- Draft SMSG Guidance for SEP prepared
  - Trial program to develop a SEP (F-16 MTC)
  - Gather lessons learned
  - Refine guidance and expand implementation

Draft SMSG SEP Guidance

- Draft SEP outline
  - Introduction (program description)
  - System capabilities and requirements
  - Systems engineering organizational integration
  - Systems engineering process application to life cycle phases
  - Technical management and control
  - Technical review plan
  - Integration with other program management control efforts
- SEP is a living document
  - Not a contractual baseline (similar to IMS)
  - Facilitates continuous systems engineering improvement
  - Analogous to Integrated Master Plan (IMP)
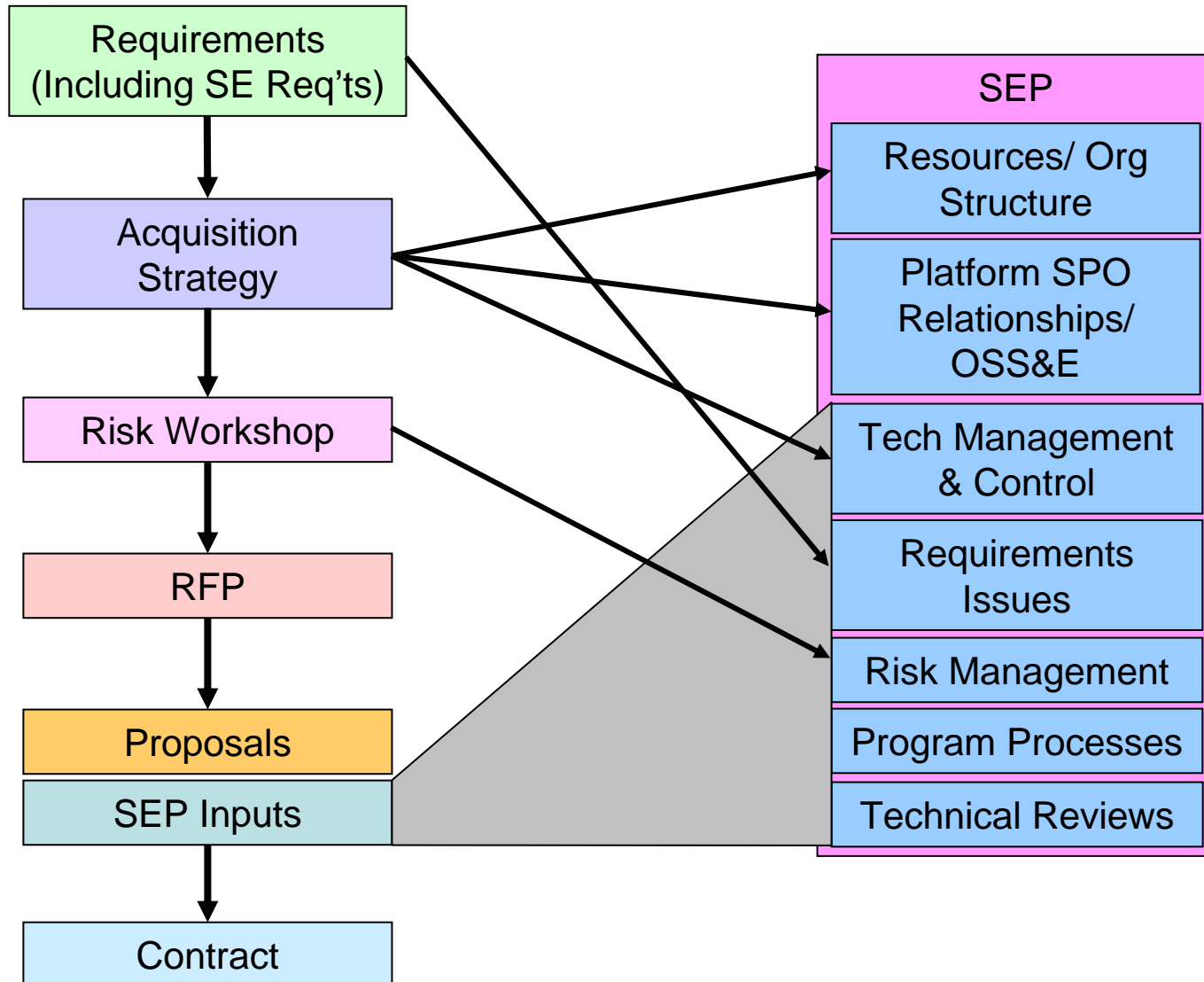
Implementation Plans

- Government actions
  - Pre-RFP
    - Risk assessment to identify SE areas to evaluate
    - Government SEP initiated
    - Systems engineering expectations established
  - Section L/M
    - Systems engineering process description based on risk assessment
      - SEP
      - IMP Narratives
      - Technical volume content
    - Systems engineering evaluation criteria
  - Post-Award
    - Develop/update/integrate SEP
      - Continually updated throughout life cycle
    - Proposal vs. CDRL for contractor information
    - Document baseline practices and processes in SEP
    - Manage according to SEP

SEP Development

Implementation Plans (Con't)

- Government expectations
  - Proposal To Include
    - Systems engineering incentives
    - SEP/IMP/technical volume content
      - Systems engineering processes
      - Technical management approach
      - Contractor's systems engineering organizational structure
  - Execution
    - Contractor to follow proposed approach, processes, practices etc., including systems engineering
    - Contractor support of SEP development and/or updates
    - Control technical effort according to baselined practices and processes documented in SEP

TSA III Concept

- Government to prepare/maintain TSA III top level SEP

- Basic contract requirements considerations
  - RFP to require inputs for the SEP (to be retained for each winning contractor)
    - May replace system engineering question set
    - Potentially replace site visits
    - Could be applied as a sample task

- Delivery order requirements
  - Delivery order SEP tailored from Government top level SEP
  - Contractor input tailored from basic contract inputs for delivery order SEP
  - Process essentially the same as previously discussed

TSA III Concept
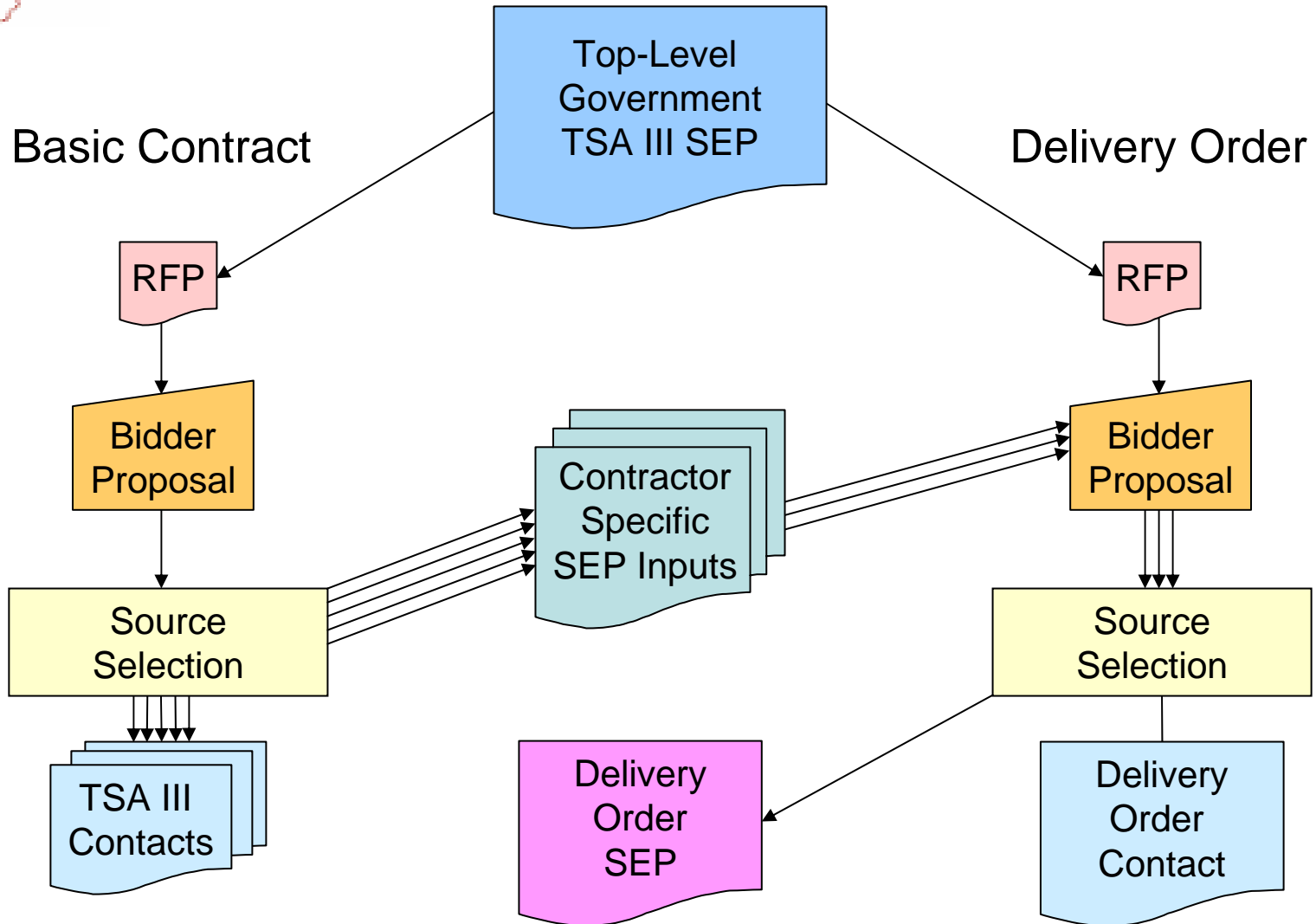
Summary

- SE revitalization is a DoD priority
- Government SEP is central to achieving goal
- SMSG aggressively pursuing development of SEP for our programs
- Widespread introduction of SEP for SMSG programs under TSA-III
- Industry feedback is key to smooth implementation