



Acquisition Research:  
Creating Synergy for Informed Change  
3<sup>RD</sup> ANNUAL ACQUISITION RESEARCH SYMPOSIUM

# Using a Modular Open Systems Approach in Defense Acquisition

## Implications for the Contracting Process

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# DoD Acquisition Environment

- Problems<sup>1</sup>
  - Cost and schedule overruns
  - Operational performance deficiencies
  - Global War on Terrorism
  - Budget cuts and resource constraints
- Solutions<sup>2</sup>
  - Focus on decreasing acquisition timelines and leveraging emerging technologies

<sup>1</sup> GAO 06-257T

<sup>2</sup> Rogers & Birmingham, 2004



# Evolutionary Acquisition

- Evolutionary Acquisition Strategy
  - Preferred approach for rapid acquisition of mature technology, delivering capability in increments
    - Incremental Development
      - Identified desired capability, end-state requirement is known, requirement met over time in increments
    - Spiral Development
      - Identified desired capability, end-state requirement is not known, requirement met over time in increments



# Modular Open Systems Approach

- MOSA is an enabler to the evolutionary acquisition approach<sup>3</sup>
  - Ensures access to the latest technologies and products and facilitates affordable and supportable system development and modernization of fielded assets
  - Ensures that systems are designed to easily and affordably accommodate additive capabilities in subsequent increments

<sup>3</sup> DAG, 2004



# Modular Open Systems Approach<sup>4</sup>

- Integrated business and technical strategy
- Employs a modular design
- Defines key interfaces
- Uses widely supported, consensus-based standards
- Standards are published and maintained by a recognized organization

<sup>4</sup> OSJTF Guide, 2004



# Contractual Implications

- Implications on the contracting process from using a MOSA-based approach
- Roles and responsibilities of government and contractor
- Characteristics of successful MOSA-based programs





Mobile User Objective System (MOUS)



Multi-Mission Maritime Aircraft (MMA)



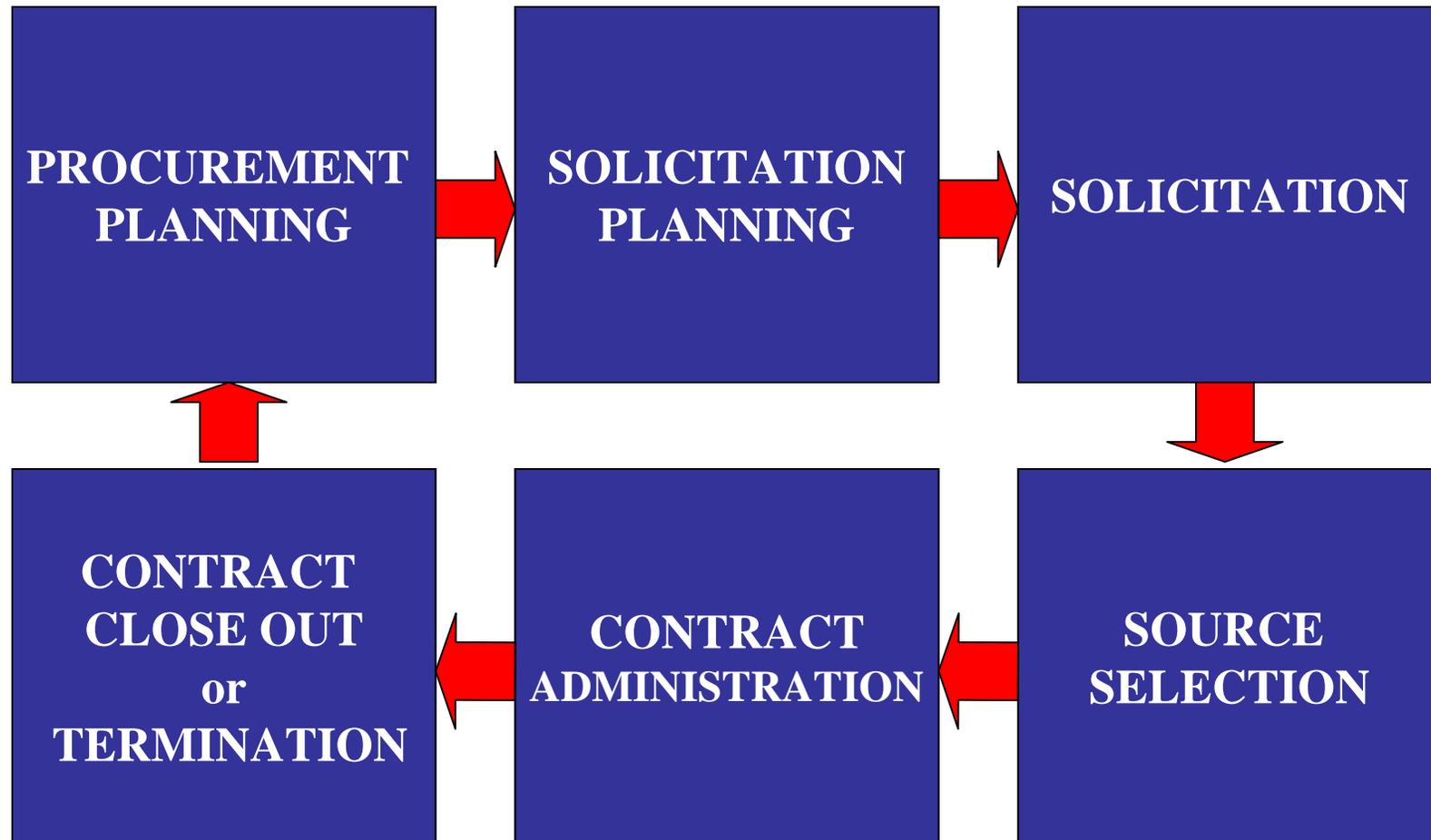
Source: (top) Lockheed Martin, (bottom) General Dynamics.

Littoral Combat Ship (LCS)



Common Enterprise Display System (CEDS)

# The Procurement Process



Source: Adapted from *Contract Management: Organizational Assessment Tools*. Garrett and Rendon, NCMA, 2005.

# Procurement Planning

- Market Research
  - Determine availability of COTS products and open systems-based products
  - Determine capabilities of contractors to use open systems approaches and to comply with contractual requirements
- Request for Information (RFI)
  - Gather information from industry for use in planning acquisition
  - Enhance access to emerging technologies



# Procurement Planning

- Industry Conferences
  - Inform industry about technical requirements
  - Solicit industry inputs for the acquisition
  - Obtain information from industry to improve the solicitation



# Solicitation Planning

- Section C Documents
  - Specifications (PBSS or Seg Spec)
    - Influenced by language in requirements document (ORD/CDD)
  - Statement of Work (SOW)
    - Specific language referring to the use of open systems and MOSA
    - SOW requires compliance with PEO IWS OACE standards and PEO C4I RAID standards



# Solicitation Planning

- Section C Documents (cont.)
  - Statement of Objectives (SOO)
    - Includes MOSA language from OSJTF MOSA Guide
    - Contractor responds with compliant SOW
    - SOW incorporated into contract
  - Contract Data Requirements List (CDRL)
    - Request certain data or demonstrations from contractor to verify levels of “openness”



# Solicitation Planning

- Section L (Instructions to Offerors)
  - Specific language pertaining to proposal preparation and adherence to the use of open systems in the development process
  - Identifies proposal evaluation factors (Technical, Cost, Management)
  - MOSA language typically found in Technical Volume requirements
    - Requires offerors to describe its approach for developing and implementing open systems



# Solicitation

- Draft RFPs
  - Allows for additional industry feedback on proposed acquisition and requirements
  - 21 day review period and comments
- Procurement Strategy
  - Use of “full and open competition” with multiple contract awards
  - Use of “rolling down-select” strategy



# Source Selection

- Section M Evaluation Factors
  - Specifies how the factors will be evaluated
  - Specifies relationship between cost and non-cost factors
- Basis for Award
  - Use of Best Value evaluation strategy supports MOSA objectives
  - Allows trade-offs among cost and non-cost factors



# Contract Administration

- Contract Types and Incentives
  - CPAF
    - Technical
    - Schedule
    - Management
    - Cost
  - FPI/AF
  - CPIF
  - Award Term

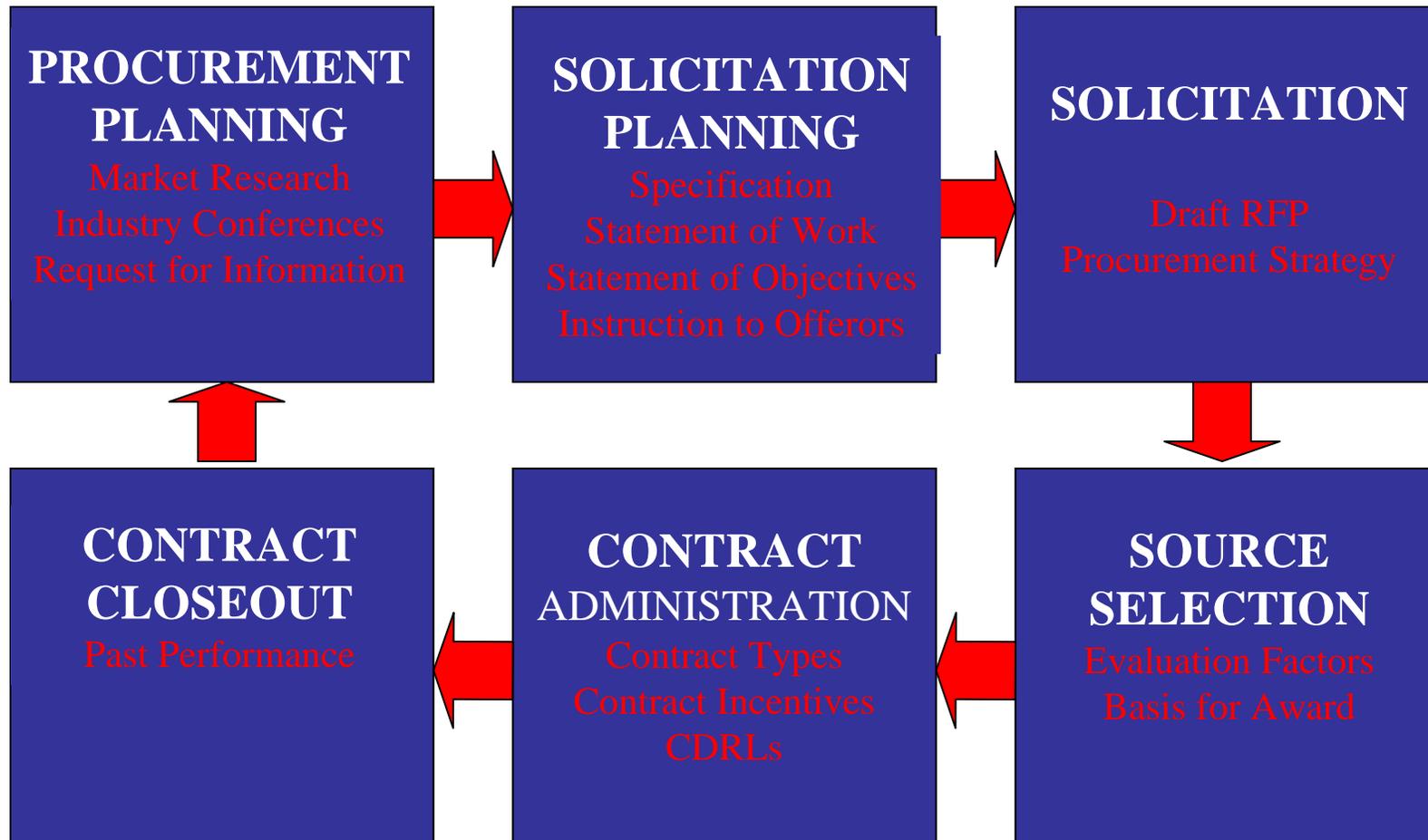


# Contract Closeout

- Final contractor evaluation
  - Periodic and final past performance
  - To be used as an evaluation factor in future source selections
  - Use of CPAR to document contractor performance in meeting “openness” requirements



# MOSA Implications on the Procurement Process



Source: Adapted from *Contract Management: Organizational Assessment Tools*. Garrett and Rendon, NCMA, 2005.

# Roles and Responsibilities

- Degree and source of control of the interfaces and standards
- Impacts level of flexibility and innovation used by contractor in designing and developing the system
- More flexibility and innovation used by contractor is critical factor in achieving MOSA objectives



# Options for Roles and Responsibilities

Option	Government Developed			Contractor Developed	
1	Initial Capabilities Document	System Specification		Statement of Work	Contract Signed
2	Initial Capabilities Document	System Specification	Statement of Objectives	Statement of Work	Contract Signed
3	Initial Capabilities Document	System Specification		Statement of Work	Contract Signed

# Characteristics of MOSA Based Contracts

- Early involvement and participation of industry in developing requirements and acquisition strategy
- Shared roles between government and contractors in development of system specification and statement of work (SOW)
- Best value source selection strategy, with higher weights given to non-cost evaluation factors such as technical performance and past performance



# Characteristics of MOSA Based Contracts

- Contract structure that includes incentives for meeting higher levels of openness (Incentive fees, Award fees, Award term)
- Documentation of contractor's performance in meeting openness requirements (Past performance evaluation)



# Summary

- Evolutionary acquisition is preferred approach
  - MOSA is an enabler to Evolutionary Acquisition
- MOSA has specific implications to the contracting process
  - Industry involvement
  - Shared roles
  - Best value strategy
  - Contract incentive structure
  - Document contractor past performance

