Effect of Current Acquisition Policies on Weapon System Acquisition

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NDIA's Gulf Coast Chapter

- **Supports National NDIA Initiatives and Provides Liaison with DOD and other Government Agencies in the Area**
- **Facilitates Multiple Executive Interchanges Per Year**
- **Hosts Annual Air Armament Symposiums**
  - **37th Annual October 16th and 17th**
- **Facilitates Air Armament Center and Industry Interaction**
- **Provides Scholarship Opportunities to Deserving Students and Supports Science and Math Programs In Local Schools**
- **Sponsors Key Industry Panels to Address Critical Initiatives Regarding Weapon System Acquisition**

NDIA's Gulf Coast Chapter
Industry Panels

Examples of Previous Panels:

- **Universal Armament Interface**
- **Urban and Complex Terrain Close Air Support**
- **Weapon Fuzing**
- **Long Range Strike**
- **Systems Engineering for Armament Systems**
- **Systems Engineering for Quick Reaction Programs**

This Year's Planned Panel:

- **Increasing Efficiency in Weapon System Acquisition**

Industry Panel for Increasing Efficiency Weapon System Acquisition

- **Objective: Formulate Specifics, Rather Than Generalities, Of What Can Be Changed In The Weapon System Acquisition Process To Increase:**
  - **Efficiency (Dollars, Schedule, Manning Required) And**
  - **Effectiveness (Timely Satisfaction Of Operator Weapon System Requirements).**
- **Current Status: Industry Panel Members Currently Being Identified, Scope of Panel Being Discussed**
  - **We Typically Have Approximately 20 Participants from Various Companies**
  - **Panel Selects Chairs and Co-Chairs**
- **Schedule: Provide Specific Recommendations at Forthcoming Air Armament Symposium in October 2012**
- **Many Potential Topics Already Identified**

Industry Panel for Increasing Efficiency Weapon System Acquisition

- **Initial Considerations:**
  - **Requirements,**
  - **Technology Transition,**
  - **Pre-planned Improvements,**
  - **Program Structure For Normal And Urgent Acquisitions,**
  - **Funding, Contract Types, Source Selection Process, Administrative Contracting And Audit Agency Activities,**
  - **Government Program Decision Process,**
  - **Development And Operational Test And Verification Requirements,**
  - **Government And Contractor Program Office Structures And Communication,**
  - **Associate Contractor Relationship Needs And Requirements,**
  - **Platform Integration Activities,**
  - **Supporting Alternate Applications And Platforms For Inventory Weapon Systems, Etc.**

Example of Issues to Be Addressed

What can be done to reduce or eliminate that protracted delays between completion of a (competitive) program phase and award of the next contract?

It is now not unusual (is actually normal) to see a year or more delay requiring companies to try and maintain the program team through overhead. Very, very inefficient.

Considerations:
Systems Engineering in A Fixed Price Environment

Observed Reactions- Over the Last Year

To The Weapon Systems Acquisition Reform Act

- **The Mindset In DOD Acquisition Has Seen A Major Shift:**
  - **Services Are Trying To Put Teeth Into Program Acquisition Strategies And RFP's To Emphasize Systems Engineering**
  - **Services And Industry Are Scrambling To Increase Systems Engineering Maturity Within Organizations**
  - **Services And Industry Are Reshaping Thinking Regarding Ramifications Of Fixed Price Developments**
  - **Services Are Trying To Be More Intelligent In Source Selections Regarding Probability Of Success**
- **All Well Intended - But Not Without Potential Pitfalls**
  - **Staffing, Education, Balance of Risk, Increased Government Responsibilities, Relationships, etc.**

Intended Consequences
Of The Weapon Systems Acquisition Reform Act

- **More Effective Acquisitions by Increased Accountability and More Carefully Planned Programs to Minimize Risk**
- **Higher Probability of Success in Programs**
- **Better Management of Expectations**
- **Not Driven by Perceptions of Excess Profits Within Industry**
  - **However, Certainly Intended to Prevent Industry From "Buying In" to Programs**

Hypothetical Scenario

The Government Releases A Competitive RFP For The Fixed-price Acquisition Of A New System.

They Ask For Comprehensive Systems Engineering Information, Including Risk Assessments And Reliability Mitigation Plans, As Part Of The Proposal.

Hypothetical Scenario
(Cont'd)

- **Two Contractors Respond:**
  - **Contractor A Provides An In-depth Proposal, Fully Populating A Risk Register With Conservative Assessments Of Current Risk, Defines Specific And Comprehensive Plans To Mitigate The Risk, And Prices The Proposal To Include The Most Likely Costs For Retiring The Risks As The Program Proceeds.**
  - **Contractor A's Price to the Government Is: $100 M**

Hypothetical Scenario
(Cont'd)

- **Two Contractors Respond:**
  - **Contractor B Provides A Fully Responsive Proposal, Provides An Optimistic Assessment Of Current Risk, Provides Summary Level Risk Mitigation Planning Limited To The Identified Risk Elements, And Optimistically Prices The Proposal To The Tasks Identified.**
    - **Contractor B's Price to the Government is: $ 85 M**

Hypothetical Scenario
(Cont'd)

- **How Did It Happen?:**
  - **Contractor A's Engineering Staff:**
    - **Carefully Flowed Down the Requirements**
    - **Thought Through The Engineering Challenges,**
    - **Developed Risk Mitigation Strategies**
    - **Planned Detailed Subsystem and Integrated System Verification**
    - **Emphasized Manufacturing Readiness and Production Representative Qualification Testing**
    - **Coordinated With All The Related Systems Engineering Disciplines**
    - **Had Support from Management Who Carefully Reviewed And Supported The Engineering Input, And Proposed Accordingly**

Hypothetical Scenario (Cont'd)

- **How Did It Happen?:**
  - **Contractor B's Engineers:**
    - **Were Just As Intelligent As Contractor A's**
    - **Constructed A Realistic Program, Including Risk Assessments, Mitigation Plans, Etc.**
  - **Contractor B's Management:**
    - **Considered (Perhaps Briefly), The Engineering Input And Costs To Execute The Program.**
    - **As A Result Of A Capture Team "Price-to-Win" Analysis, Management Took A "Management Challenge" Cut To The Costs**
    - **Allocated A Much-Constrained Budget On Engineering**
  - **Contractor B's Engineers then:**
    - **Risks Were Then "Reconsidered", And Reduced/Removed**
    - **Cut Out Risk Mitigation Elements.**
- **Result: A Very Optimistic Picture Was Displayed To The Government.**

Hypothetical Scenario
(Cont'd)

By The Way - This Is Not A Hypothetical Scenario, It Is Happening Today, Throughout Air Force, Army and Navy Acquisitions

The Challenge to DOD Acquisition:

- **Changing The Culture To Make Sure We're Dealing With "Contractor A's" Rather Than "Contractor B's".**
- **Rewarding Realistic, Carefully Planned Proposals**
- **Avoiding Awarding Contracts To Contractor B's**

Questions That Invariably Arise:

1. **Why Would The SSA Possibly Award To Contractor B?**
2. **How Can We Justify Leaving $15 M On The Table?**
3. **Why Don't We Award To Contractor B, Hold The Additional $15 M In Reserve, And Use It If Necessary?**
4. **Why Can't We Just Hold Contractor B's Feet To The Fire And Make Him Pay For The Likely Overrun?**
5. **Where Is The Government Vulnerable? After All, It Is A Fixed Price Contract.**
6. **How Can I Get Enough Detail In The Proposal To Realistically Assess The Risk, Required Scope And Schedule, And Probability Of Success?**
7. **Where Will The Government Possibly Get The Technical Staff Capable Of Performing The Source Selection?**
8. **Etc.**

Where Is the Government, Most Vulnerable?

In Source Selection:

- **Risk Of Not Having Sufficient Technical Staff* (In Quality/Experience And/Or Numbers) To:**
  1. **Prepare An Adequate RFP To Include Sufficient Technical Content,**
  2. **Evaluate Proposals In Sufficient Depth To Assess Compliance And Risk**
- **Risk Of Being Overly Constrained In Obtaining Sufficient Technical Information Due To Arbitrary Information Constraints (Page Numbers, Content, Etc.)**
- **Risk Of Not Requiring, As Part Of The Contract, Minimum Essential Systems Engineering Tasks Be Performed**
  - **"If It Is Not Required In The Contract, It Is In The Contractors Tradespace To Eliminate." Especially In Fixed Price Contracts.**
- **<u>Risk of Overestimating The Availability of Government Provided Equipment, Test Resources. Data, and Other Requirements</u>**

- **These same areas are vulnerable in program formulation and execution.**

* Systems Engineers, Specialty Engineers, Test Engineers, Systems Safety, etc.

Final Thoughts

- **Fixed Price Contracts Don't Totally Shift Risk To The Contractors- Government Responsibility Is Increased As Well And Is Equally Critical To Successful Execution**
- **Don't Think The Government Can Direct Contractors To Respond To Direction After Award If It Was Not Clearly Included In The Contract**
  - **Examples:**
    - **Frequency, Location, Size And Content Of Meetings**
    - **Failure Analyses**
    - **Data**
    - **And Many, Many More.**
- **Don't Let Contract Type Shut Down Effective Communication!**

Bob Marinan

Gulf Coast Chapter NDIA Board of Directors

- **Contractor Behavior in Fixed Price Weapons Development**
  - **We've been here before with the A-12**
  - **Early Returns on Fixed Price Contracting**
  - **Contractor Behaviors in a Fixed Price Environment**

- **A-12 Program**
  - Navy effort begun in 1983
  - Requirement for a stealthy ground attack aircraft
  - Program was a fixed price development won in 1988 by the McD/GD team
  - Cancelled in 1991
    - due to program delays (est 18 months behind schedule)
    - projected cost increases (est $1B over cost)
  - This issue is still in litigation

- **A-12 Lessons Learned - Contractor Perspective**
  - **Firm Schedules need to be established, maintained, and strictly enforced**
  - **When performing to a fixed price contract – nothing more than what the spec requires should be provided without schedule and cost compensation**
  - **You cannot allow outside influences to dictate the methodologies used for development - stick to the plan**

- **Fixed Price World Early Returns**
  - **No longer priced? Cost plus items that foster teaming:**
    - **IPT's, working group meetings, Home & Away's, etc.**
  - **Predominately, Low Cost Bidders still win contracts**
    - **Drives focus to low cost bids while assuming greater risk**
    - **Lack of opportunity for dialogue drives contractors to take "educational guesses" regarding requirements**
    - **Impact is on reduced capability**
    - **Less than desired PDR/CDR expectations**

- **Fixed Price World Early Returns (Cont)**
  - **Unsatisfied customers (Warfighter, AQ, Public)**
    - **Lowering cost will win every time over capability**

Note: Imperative Company IRAD supports/feeds research lab priorities to help reduce high risk technologies

Contract Type Behaviors – Typical Prime

	Cost Plus	Firm Fixed Price
Program Cooperation	IPT with Customer	Decisions influenced by how it impacts FFP
Estimate Conservatism	Estimates cover tasks	Estimates cover risks
Earnings Spread	Appx 8%	Appx 15%
Changes/Design Reviews	Provide what customer wants	Provide what contract says
Management Reserve	Can cover program changes	Held to cover program risks
SOW	More objective wording	Each “shall” scrutinized for scope
Approval Levels	Program /Division – uses fewer billets	Corporate – requires more time and billets
Cost Reporting/Resources	Per the contract	Internal reporting greater
Exit Criteria	Progressive Tech Development	Rigid deliverables

More Tech Development Under Cost Plus Approach

Dave Andrews

President, NDIA Gulf Coast Chapter

Integrated Defense Acquisition, Technology, and Logistics Life Cycle Management System

Following the Materiel Development Decision, the Milestone Decision Authority may authorize entry into the acquisition process at any point, consistent with phase-specific entrance criteria and statutory requirements.

Materiel Solution Analysis Phase | Technology Development Phase | Engineering & Manufacturing Development Phase | Production & Deployment Phase | Operations & Support Phase

MDD | MS A | MS B | MS C | FRP DR

Integrated System Design | Post-CDR A | System Capability & Manufacturing Process Demonstration | Low-Rate Initial Production | Full-Rate Production/Deployment | Life Cycle Sustainment | Disposal

Joint Capabilities Integration & Development System (need-driven)

Initial Evolutionary Acquisition Strategy

Evolutionary Acquisition Strategy

Oversight & Review

Contracting

Major Products

Logistics/ Sustainment

Defense Acquisition System (event-driven)

Technical — Systems Engineering, Test and Evaluation, Supportability

Materiel Solution | Prototypes | Prototypes | Production Representative Articles | Low-Rate Initial Production Systems | Full-Rate Production Systems

Increment 2 | Increment 3

Total Life Cycle Systems Management

Cost

Cost Estimation Methods: Analogy | Parametric | Engineering | Actual Costs

PBO POM Input | PBO Budget Estimate

Types of Funds: RDT&E – Advanced Technology Development | RDT&E – Advanced Component Development and Prototypes | RDT&E – System Development & Demonstration | RDT&E – Management & Support | Procurement | Operations and Maintenance

Appropriated Funds To Support Contracts

Planning, Programming, Budgeting & Execution Process (biennial-calendar-driven)

Military Departments and Defense Agencies: POM/Budget Formulation (Changes to On Year) → August POM/Budget Submit (Changes to On Year) → September - November Issue Resolution → PDRMC → Final PBDs → MBI (December) → DoD Budget (February)

Office of the Secretary of Defense and Joint Staff: Guidance for Development of the Force (Off Year Optional) (December / February) → Joint Programming Guidance (Off Year Optional) (April / May) → PBD Cycle (October - November)

White House: National Military Strategy | National Defense Strategy | National Security Strategy | Fiscal Guidance

DoD Budget (February) → OMB (January) → President's Budget to Congress (February (1st Monday))

FYDP updated

Congress: Budget Committees | Authorization Committees | Appropriation Committees | Authorization/ Appropriation Acts Passed (February - September)

DoD Testimonies | DoD Appeals | Allocation | Apportionment

- **Believe it or not we can make it worse!**
- **Generally, competition makes everything better**
- **However, if you aren't very precise in understanding what you are buying, you may be very disappointed**

Fixed Price Development

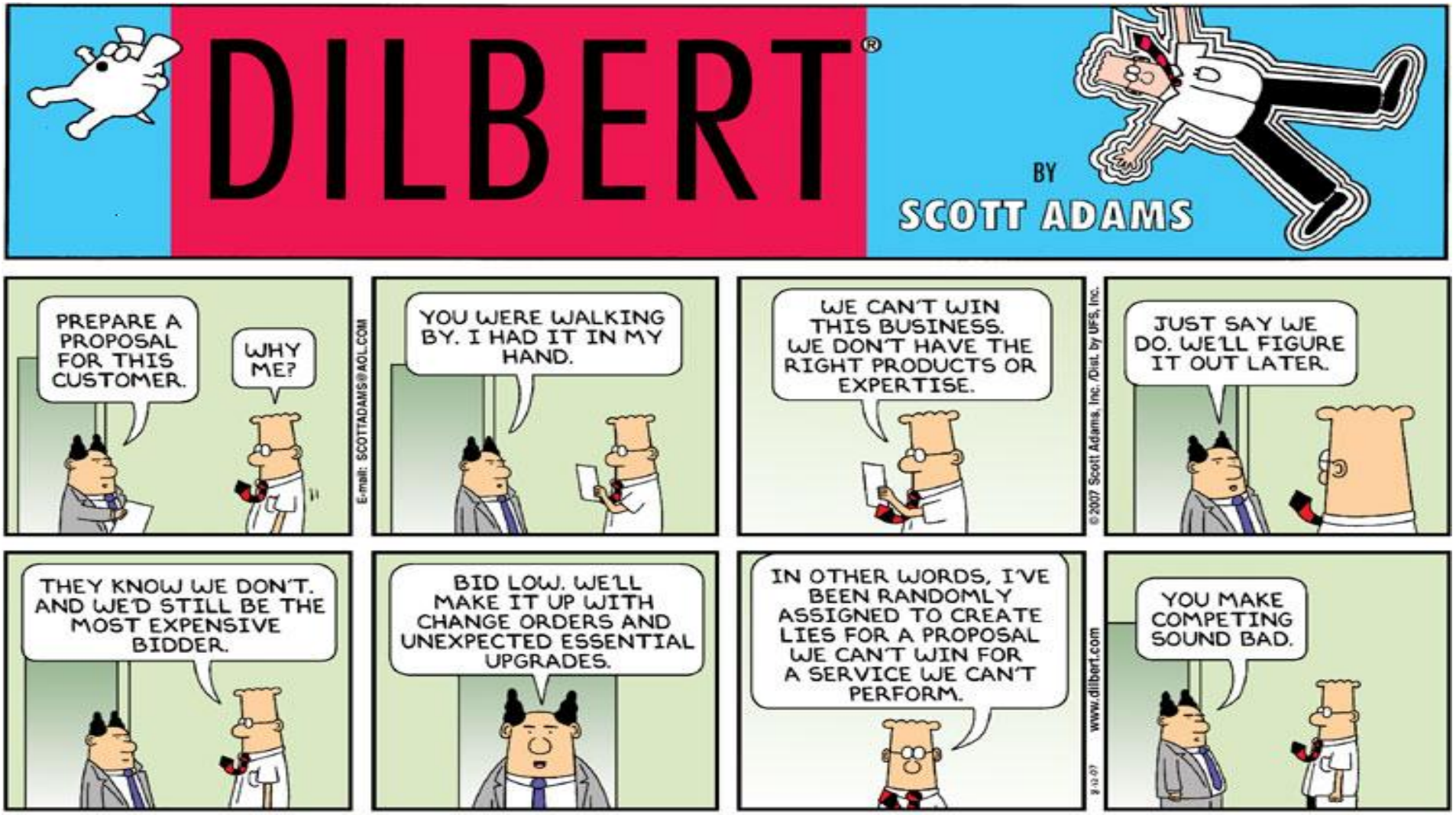
- **Contractors will bid what you ask them to bid**
  - **Whether they like it or not**
  - **Whether it makes sense or not**
- **Government should understand the risks**
  - **Contractors don't want to aggravate their customer**
  - **They will try to accommodate requests that are not in scope**
  - **Problems may not surface until contract is 90% funds expended and 80% work completed**
  - **Check the CPI. You may be the problem!**
  - ***Neither the government nor contractor is used to the discipline required to manage a Fixed Price Development Contract***

- **Failure mode >> Unplanned government oversight**
  - **SPO sending people to monitor or understand how the development is going**
    - **Government believes this is an inherent part of their oversight**
    - **Generally, the contractor will bid a level of effort for government interface**
    - **Support of a specific activity may or may not be in the scope of the bid. You have to check!**
      - **Even if it is in the bid, it probably doesn't envision a 3 month investigation of a flight failure.**
      - **If you call a new meeting, it's probably not in the bid.**

- **Failure Mode >> Test schedules are notoriously unpredictable**
  - **Contractor will bid manhours and material to support various kinds of tests**
  - **What could go wrong?:**
    - **Airplanes break**
      - **How many retries are planned for in the contractor's bid?**
    - **GFE breaks or is late**
    - **Test is out prioritized on the range**
      - **How many retries are planned for in the contractor's bid?**
    - **Security holds your test team at the gate for 6 hours because the MAX system wasn't updated properly!**

- **Failure mode >> SPO can't control OSD**
  - **OSD adds requirements without funding**
    - **Additional testing, additional meetings, previously unknown requirements**
  - **There is usually no slack in the contract funding to accommodate change in contract scope**
  - **Budgeting for contingencies like this is usually the first thing cut**

- **Failure mode >> SPO can't control funding stream from Congress / OSD / AF**
  - **Changes to the contract funding may require renegotiation of scope and cost**
  - **Fixed price development will require a precise layout of manpower and tasks**
  - **Program funding cuts will require re-planning and re-phasing of work, which can have significant cost and schedule impact**



- **Fixed price development requires contractors to add risk to their bids**

- **That is a tall order in a competitive environment**

Thanks For Your Attention!

Questions or Comments for the Panel?

38th Air Armament Symposium

Save the Date!

Oct. 16 – 17, 2012

Emerald Coast Conference Center

Fort Walton Beach, Florida

Sponsored by NDIA Gulf Coast Chapter in partnership with Air Armament Center