

# ***DoD Software Engineering and System Assurance***

## **Software Cost Control Initiatives**



**Bruce Amato**

Software Engineering and System Assurance

**Office of the Under Secretary of Defense**

**Acquisition, Technology and Logistics**

**April 9, 2008**



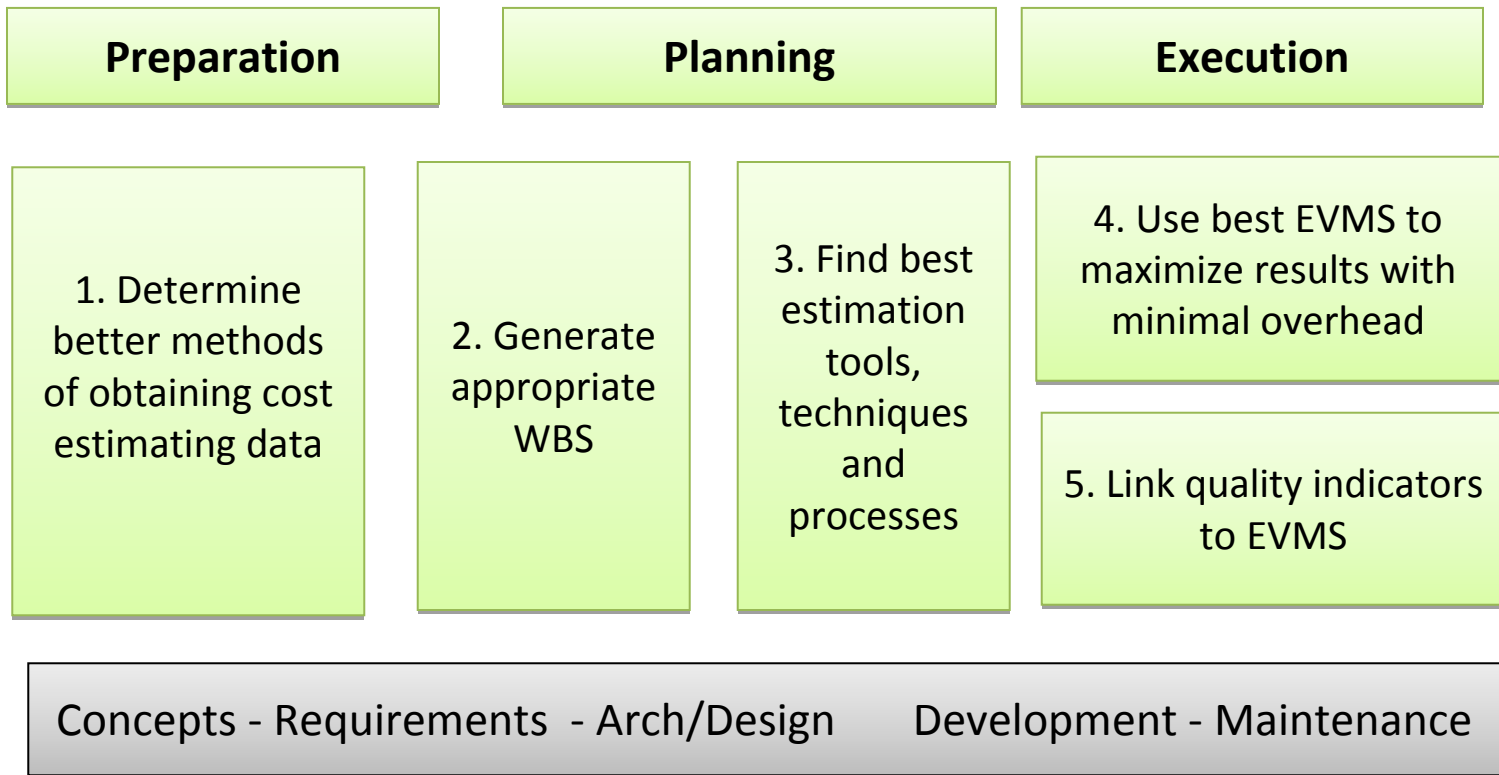
# *The Software Cost Control Problem*

---

- **The Problem** of software cost control spans the acquisition lifecycle which include:
  1. Estimates forced before adequate data is available
  2. Use of inappropriate Work Breakdown Structures
  3. Poor upfront estimates for software components
  4. Ineffective earned value data collection
  5. No leading quality indicators
- **Root cause:** Logical development (vs. physical development) is difficult to visualize and requires different tools and techniques to manage
- **The Result** is programmatic inefficiencies and an inability to discover and correct problems in time



# Software Cost Control Working Group Scope



***SSA SW Cost Control initiatives span the acquisition life cycle***



# *Relationship of Cost Control Processes*

---

1. **Getting the data** for estimating right is a key factor in that is necessary for everything else to fit into place
2. If **the WBS** is not right, it inhibits not only the initial estimate but monitoring
3. Getting **the estimate** right should lower causes for breeches and need for "cutting corners"
4. Better less intrusive **EVM collection** should help PM spot issues in timely manner
5. **Leading quality metrics** will augment EVM by answering the "why" program is off track and "what" is really being produced



# Obtain Cost Related Data

---

1. Barry Boehm USC Incremental Commitment Model Initiative
  - Expand model
  - Develop Guidebook
  - Pilot Guidebook



# Get the WBS Right

---

## 2. Revise MIL HNDBK 881 Work Breakdown Structures

- Review entire handbook
- Recommend software related guidance
- Pilot guidance
- Determine interrelationships to EVM Guidance



# *Develop Software Estimation Capabilities*

---

3. Find best estimation software, processes and techniques
  - Continually evaluate various estimation software packages
  - Review processes and techniques
  - Use estimation tools and techniques on program reviews
  - Offer results to the community at large
  - Update Best Practices Database



# Use Best EVMS

---

## 4. Evaluate EVMS offerings

- Revise EVM Guidance for software
- Look for root causes of EVM failures
- Determine how to integrate EVM to other software metrics





# *Link Quality Metrics to EVM*

---

## 5. Determine optimal set of leading software indicators

- research software quality indicators as possible leading performance indicators that would enhance and compliment EVM statistics
- Develop overarching (streamlined) guidance for the entire cost control life cycle that encompasses all five study areas