Performance Based Management at Raytheon Aircraft Company

Joe Kusick
Raytheon Aircraft Company
EVMS Manager
May 18, 1998

Raytheon Aircraft Policy for Performance Based Management

- EVMS is a “Tool” for Performance Based Management
  - Commercial/Development Programs
    - EVMS is applied based on Program Risk
      - Technical / Schedule / Cost
    - EVMS requirements are tailored
    - Programs to use EVMS designated by CEO
  - Government Programs
    - EVMS applied as contractually agreed to
  - Surveillance & Training
    - Conducted quarterly
    - Monthly report provided to CEO of Company addressing Major Programs use of EVMS
    - Joint / & Self surveillance

EVMS Endorsement by Top Management at Raytheon Aircraft Co.

Inter-Office Communication

Raytheon Aircraft

Beech

Hawker

Date November 14, 1995

From James E. Gray

To Distribution cc:

Subject Raytheon Aircraft Company
EVMS System Description

The Raytheon Aircraft Company Earned Value Management System Description sets the policy and provides guidance for programs which have been designated to be managed using earned value.

For high risk, high dollar government programs where EVMS is a requirement, the EVMS system description will be followed as written. Any deviations to the EVMS system description must be reviewed and approved by Raytheon Aircraft Company's management team.

Direction is provided for tailoring EVMS implementation on company funded efforts and medium to low risk government programs where EVMS is required. The attached check list provides this direction and should be incorporated in your program plan.

The Raytheon Aircraft Company Chief Financial Officer with the advice of the EVMS Manager will interpret policy and provide guidance for EVMS implementation.

Your cooperation, support, and use of EVMS as a management tool is required to enable Raytheon Aircraft Company to compete in a global environment where we are being challenged in our technical prowess, and our ability to meet schedule and cost commitments.

James E. Gray
Vice President and
Chief Financial Officer

APPROVED:

JEG:jm

Attachment

Roy Norris
President

Art Wegner
Chairman and Chief Executive Officer

Tailoring Criteria

Earned Value Measurement Check List (EVMCL)				
LEGEND: X = Mandatory requirement, prechecked				
A = Mandatory requirement, format or approach optional (attach forms)				
O = Optional, indicate applicability with an 'X'				
☐ = At least one is mandatory, choice of more than one is optional				
N/A = Not applicable due to a more stringent requirement				
PROGRAM				DATE:
ITEM	HIGH RISK HIGH DOLLAR DEVELOPMENTAL PROGRAMS GOVERNMENT PROGRAMS	MEDIUM TO HIGH RISK DEVELOPMENTAL PROGRAMS MAY BE GOVERNMENT OR COMPANY FUNDED	LOW RISK LOW DOLLAR DEVELOPMENTAL OR STABLE COMPANY FUNDED PROGRAMS PRODUCTION PROGRAMS	COMMENTS, ATTACHMENT NUMBER OR REFERENCE
I. ORGANIZATION				
1. Program work definition will be specified by the following:				
a. Development of a Work Breakdown Structure (WBS) that is reconcilable to the Statement of Work	X	X	A	
b. Issuance of a WBS Dictionary	X	X	O	
c. Issuance of a WBS Index	X	X	O	
d. Issuance of a WBS Pictorial Tree	O	O	O	
2. Program organizational definition will be specified by the following:				
a. The designation of Integrated Product Teams (IPT's) and the assignment of IPT Leaders (IPTLs)	X	X	A	
b. Issuance of a program organization chart to the lowest IPT level	A	A	O	
c. The definition of staffing requirements (by department) by the IPTL's	A	A	O	
d. The consolidation of IPT staffing requirements into a Program Staffing Plan (by department)	A	A	O	
3. The integration of work definition and organizational definition will be accomplished through:				
a. The identification of cost accounts and associated Control Account Managers (CAMs)	X	X	X	
b. Issuance of the program organization chart to the CAM level	O	O	O	
c. Issuance of a Responsibility Assignment Matrix (RAM)	X	X	A	
d. Issuance of a dollarized RAM indicating total burdened dollars for each cost account	X	X	A	

Tailoring Criteria cont'd

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I. ORGANIZATION (continued)				
4. Integration of planning, budgeting, scheduling, work authorization, and cost accumulation will exist at the following levels:				
a. Contract / Program level	X	X	X	
b. Integrated Product Team (IPT)	X	X	X	
c. Cost Account level	X	X	X	
II. SCHEDULING				
1. Schedules will be developed using the following system(s)				
a. AS	☐	☐	☐	
b. EVMS - CPR system	☐	☐	☐	
c. Other(s) (list)			☐	
____________________________				
2. The following schedules will be prepared: definition will be accomplished through:				
a. Tier I Master Schedule	X	X	A	
b. Tier II Intermediate Schedules	X	O	O	
c. Cost Account Schedules depicting planning of work packages	X	X	A	
d. Supplementary Schedules (List)	O	O	O	
____________________________				
____________________________				
____________________________				
3. Vertical traceability between the various levels of schedules will be accomplished by one (or more) of the following:				
a. Using distinct nomenclature and date for milestones	☐	☐	☐	
b. Assigning unique milestones numbers	☐	☐	☐	
c. Activity / milestone coding in automated systems	☐	☐	☐	
d. Other (define in detail by attachment)	☐	☐	☐	

Tailoring Criteria cont’d

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II.	SCHEDULING (CONTINUED)						
	4.	Vertical traceability between various WBS elements within the schedules will be accomplished by one (or more) of the following:					
		a.	Using a 'logical' WBS numbering scheme	☐	☐	☐	
		b.	Maintaining a schedule index	☐	☐	☐	
		c.	Other (define in detail by attachment)	☐	☐	☐	
	5.	Horizontal traceability to ensure work is planned in a logical sequence considering the interdependencies among tasks will be accomplished by one (or more) of the following:					
		a.	Network based schedules	☐	☐	☐	
		b.	Bar chart schedules indicating logical relationships	☐	☐	☐	
		c.	Activity and/or milestone interface logs	☐	☐	☐	
		d.	Other (define in detail by attachment)	☐	☐	☐	
	6.	The schedule symbology utilized will be:					
		a.	Standard symbology	X	X	X	
III.	Contract Baseline & Revisions						
	1.	Summary Control Account authorizations will be used to authorize scope, schedule, and budget to the IPT Leaders		X	A	A	
	2.	Control Account Authorizations will be used to authorize scope, schedule, and budget to the Control Account Managers (CAMs)		X	A	A	

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III. CONTRACT BASELINE & REVISIONS (continued)				
3. The following logs will be used:				
a. Contract Budget Logs (CBL)	X	A	A	
b. Management Reserve (MR)	X	A	A	
c. Undistributed Budget (UB)	X	A	O	
IV. COST ACCOUNT PLANNING, AUTHORIZATION & REVISIONS				
1. Control Accounts will be established which are identified to a single element of the WBS and a single organizational element	X	X	O	
2. Control Accounts will be established at an appropriate level for management and analysis where responsibility for technical, schedule, and cost performance is assigned.	N/A	N/A	X	
3. Control Accounts will be subdivided into tasks and each task is identified as either: a discrete work package, level of effort, apportioned effort, or planning package	X	X	O	
V. DETERMINING STATUS & ENTERING BCWP				
1. Earned value techniques will be used for performance measurement	X	X	A	
2. Milestone weights and percent complete for earned value will be based upon:				
a. Direct labor dollars or direct dollars for material or other direct costs	☐	☐	☐	
b. Total burdened dollars	☐	☐	☐	
c. Other (describe) ___________________________	☐	☐	☐	

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VI. VARIANCE ANALYSIS				
1. Analysis and reporting will always be accomplished for the total program. In addition, significant variances will be reported and analyzed at the:				
a. Contract Reporting Level	X	X	O	
b. Integrated Product Team Level / Design Build Team	X	X	O	
c. Control Account Level	X	O	O	
d. Other (list)	O	O	O	
____________________________				
2. Thresholds are established for variance analysis and are documented on the attached reference. These thresholds will be determined for:				
a. Current period (if applicable)	X	X	O	
b. Cumulative to date	X	X	X	
For the following categories:				
a. Customer reporting levels	X	X	X	
b. Integrated Product Team levels	O	O	O	
c. Control Account levels	X	O	O	
d. Other (list)	O	O	O	
____________________________				
3. For labor elements of cost, rate and efficiency variance will be determined and analyzed	X	A	O	
4 For high value material, price and usage vcariance will be	X	A	O	
determined and analyzed monthly	□	□	□	
	□	□	□	
	□	□	□	
	□	□	□	
	□	□	□	

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VII.	ESTIMATES AT COMPLETION (EAC)				
1.	The lowest level at which the EAC will be examined monthly for accuracy and updated as warranted is at the:				
a.	Contract / Program level	N/A	☐	☐	
b.	Contract reporting level	N/A	☐	☐	
c.	IPT	N/A	☐	☐	
d.	Control Account level	X	☐	☐	
e.	Work package level	O	☐	☐	
2.	The lowest level at which a comprehensive EAC will be performed at least annually is the:				
a.	Contract / Program level	N/A	N/A	A	
b.	Contract reporting level	N/A	X	O	
c.	IPT	N/A	O	O	
d.	Control Account level	X	O	O	
e.	Work package level				
VIII.	MATERIAL AND OTHER DIRECT COSTS				
1.	Develop Bill of Material based on current design definition	X	X	X	
2.	Identify high value and low value materials	A	A	A	
IX.	SUBCONTRACTS				
1.	All subcontracts will be identified:				
a.	As part of the WBS Dictionary	☐	☐	☐	
b.	As listed on a separate document (reference document) and cross reference to the WBS	☐	☐	☐	
2.	Identify subcontracts as either Type One or Two	X	X	A	

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IX.	SUBCONTRACTS (continued)				
	3. Develop flowdown requirements for Type One and / or Two subcontracts	X	X	X	
X.	REPORTING				
	1. The following software system will be used for processing performance measurement data:				
	a. EVMS - CPR	☐	☐	☐	
	b. Other (list) ___________________________	N / A	N / A	☐	
	2. The program requires the following cost / schedule reports (list each report and its due date or include on attachment)				
	a. ___________________________				
	b. ___________________________				
	c. ___________________________				
	d. ___________________________				
	e. ___________________________				
	f. ___________________________				
	g. ___________________________				

Lessons Learned

① You must first understand the existing Financial & Operational business processes and tools available in a company.

② Tailor the EVMS management process with existing systems capabilities considered.

③ Corporate culture is slow to change.

- Must have support from the CEO
- EVMS <u>cannot</u> be successful if viewed as a “Finance Report”

Lessons Learned cont'd

- ④ You must train, reinforce and make it a part of doing business.
- ⑤ Proper EVMS use and implementation <u>starts prior</u> to program or contract - <u>start</u>, not after.
  - Assess contractors capabilities
  - Set the statement of work
  - Definitive
  - Plan the baseline

Recommendations

- For FFP Contracting
  - Establish Performance Measurement milestones at a <u>HIGH</u> level. Preferably deliverables in the contract.
    - Assess performance to those deliverables.
  - Establish EVMS requirement based on <u>Risk</u> and not necessarily contract type.
  - Improve pre-award process
    - Access the contractor prior to award decision.
    - Plan the baseline prior to full authority to proceed.
    - Use the right contract vehicle for the product you are contracting for. (Do not use a FFP Contract for contracts that are not high risk.)
  - Poor contractor evaluations prior to contract are not fixed by <u>additional</u> legislation operating reports.
    - Insight versus Oversight