Department of Justice
Office of the Chief Information Officer

Information Technology (IT) Investment
Baseline Management Guide

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1 INTRODUCTION

1.1 WHAT IS EARNED VALUE MANAGEMENT

Earned Value Management (EVM) is a project management tool used to plan and control project activity. EVM integrates the project work scope, schedule, and cost to establish a performance measurement baseline. As work is completed, credit is accrued according to the value of the work established in the baseline. Comparing the Budgeted Cost for Work Performed (BCWP) or Earned Value (EV) to the Budgeted Cost for Work Scheduled (BCWS) or Planned Value (PV) derived from the baseline and the Actual Cost of Work Performed (ACWP) or Actual Costs (AC) accrued through the status period will yield the schedule and cost variances.   Timely evaluation of significant cost and schedule variances enable the project or program manager and other stakeholders to focus on problem areas and mitigate potential risk to achieving project goals. Metrics based on past performance are used to statistically estimate future performance. Statistical projections can be used to test the project's Estimate to Complete (ETC) thereby quantifying cost risk to project budgets or funding. Weak performing areas are identified allowing the project manager to focus valuable resources on correcting critical problems. EVM provides objective metrics to the project stakeholders allowing them to take proactive responses.

1.2 THE EARNED VALUE MANAGEMENT SYSTEM

An Earned Value Management System (EVM System) is a term inclusive of the practices, procedures, and processes defining how EVM techniques are applied within the organization. While an EVM System may use a software tool to automate some of the processes, an EVM System is not a software tool alone. The EVM System consists of nine process groups: Organizing, Scheduling, Work Budget Authorization, Accounting, Indirect Management, Managerial Analysis, Change Incorporation, Material Management, and Subcontract Management.

Note to the reader: the term "EVM System" will be used throughout the document rather than EVMS to avoid confusion between the acronyms EVM and EVMS since both of these appear frequently throughout the document.

1.3 REQUIREMENTS FOR IMPLEMENTING AN EVM SYSTEM

The Office of Management and Budget (OMB) requires all federal government agencies to use an American National Standards Institute/Electronic Industries Association ANSI/EIA Standard 748 (ANSI/EIA-748) compliant EVM System for all major information technology (IT) investments with development activity.   The Department of Justice Order 2880.1B, "Information Resources Management Program", requires that major IT projects with development activities meeting prescribed thresholds, conform to the ANSI/EIA-748 on EVM System for project planning and execution, management reporting and earned value analysis.

1.4 PURPOSE AND SCOPE OF THIS DOCUMENT

The purpose of this document is to provide a framework for the development of an EVM System and the implementation of EVM across the Department. The goal is to achieve compliance with OMB's direction on the implementation of EVM. The Department will use this EVM System framework to verify compliance with OMB direction and industry standards.

This document will address the requirements necessary for developing consistent EVM Systems across the DOJ components. The material provided in this document has been tailored to meet the needs of the Department. This guidance, while more specific than the ANSI/EIA-748, is not intended to define all procedures for the development of an EVM System. The goal is to provide a framework while leaving flexibility for each DOJ component to further define their specific EVM implementation guidance required to meet their management and business needs.

Some knowledge of EVM is a pre-requisite for applying the guidelines presented within this document to the development of a DOJ component EVM System or to the implementation of EVM practices on a Department program.

1.5 INTENDED AUDIENCE

The guide is intended for use by DOJ component IT staff responsible for developing a DOJ component EVM System, program and project managers responsible for implementing EVM on a DOJ IT project, and contract personnel supporting an IT Program Management Office (PMO) or managing developmental IT projects on behalf of the Department.

2 LEGISLATION, POLICIES, STANDARDS

2.1 LEGISLATION

Legislation serving as the basis for policy requirements for EVM or, more generally, performance based management includes the following:

- Government Performance and Results Act of 1993 – This act mandates the use of performance metrics.
- Federal Acquisition Streamlining Act of 1994 – This act requires agency heads to achieve, on average, 90% of the cost and schedule goals established for major and non-major acquisition programs of the agency without reducing the performance or the capabilities of the items being acquired.
- Clinger-Cohen Act of 1996 – This act requires the establishment of the processes for executive agencies to analyze, track, and evaluate risks and results of major investments in IT and requires reporting on the net programs performance benefits achieved by the agencies.

2.2 POLICIES

Executive policy directing the application of EVM on IT programs include the following:

- OMB Circular A-11 (Part 7, Planning, Budgeting, Acquisition & Management of Capital Asset) – This circular outlines a systematic process for program management, which includes integration of scope, schedule, and cost objective; requires the use of earned value techniques for performance measurement during execution of the program; and specifically identifies the ANSI/EIA-748.
- OMB Memorandum M-10-27, "Information Technology Investment Baseline Management Policy" – This policy directs agency policy to address: (I) establishing an investment baseline; (II) re-baselining an investment; (III) notifying OMB of new and changed baselines; (IV) managing and monitoring baselines via the use of performance management systems; and (V) Federal IT Dashboard reporting requirements.
- DOJ Order 2880.1B, Information Resources Management Program – This order establishes Department of Justice policy governing the planning, management, operation, and use of IT resources. Specifically, Chapter 2, Part 6, "Program and Project Management" establishes a department-level priority project oversight process to focus DOJ CIO attention on those investments most critical and most at risk. This process includes the use of an EVM System conforming to ANSI/EIA-748 in the planning, execution and reporting of major IT projects.

2.3 STANDARDS

The following standard is referenced in all of the above policies as the guideline with which the EVM systems should conform.

- American National Standards Institute/Electronic Industries Association, Standard 748 (ANSI/EIA-748), "Earned Value Management Systems" – This industry standard EVM System guideline incorporates best business practices to provide strong benefits for program or enterprise planning and control. The processes include integration of program scope, schedule, and cost objectives, establishment of a baseline plan for accomplishment of program objectives, and use of earned value techniques for performance measurement during the execution of a program. The system provides a sound basis for problem identification, corrective actions, and management re-planning as may be required.

2.4 GUIDANCE

Industry and Department of Justice guidance documents assisting with the application of EVM include the following:

- National Defense Industrial Association (NDIA) Intent Guide – This guide provides additional insight into the EVM system guidelines included in ANSI/EIA-748. The guide's primary purpose is to define in detail the management value and intent for each of the 32 guidelines in ANSI/EIA-748. The guide also lists the typical attributes and objective evidence items that can be used to verify compliance with each of the guidelines. It is recommended for use in performing an initial compliance assessment and for performing implementation surveillance.
- NDIA Surveillance Guide – This guide defines a standard industry surveillance approach to maintaining compliance with ANSI/EIA-748 and any organization specific EVM processes and procedures. It is intended to assist organizations with a new EVM system to establish a surveillance process or to help organizations with an established EVM system to standardize their surveillance approach.
- The Program Manager's Guide to the Integrated Baseline Review (IBR) Process – This NDIA guide defines the purpose, goals, and objectives of an IBR. It describes the attributes of an effective IBR and discusses a baseline review process that will lead to a better understanding of program risks. It provides a common definition and framework for the IBR process.
- DOJ IT Governance Guide – The primary purpose of this guide is to communicate the expectations for the stakeholders in the Department involved in the execution and oversight of Information Technology governance. The guide also communicates the Department's expectations for Component self-governance to the Component CIOs. Additionally, the Guide communicates the Department's intentions for IT governance to external oversight organizations such as the Office of Management and Budget, the General Accounting Office and the Department's Office of the Inspector General. It is a companion document to the Department of Justice Information Resource Management Order 2880.1B.
- The General Accounting Office report GAO-09-3SP dated March 2009 entitled GAO Cost Estimating and Assessment Guide – The basic information in the Cost Guide includes the purpose, scope, and schedule of a cost estimate; a technical baseline description; a work breakdown structure (WBS); ground rules and assumptions; how to collect data; estimation methodologies; software cost estimating; sensitivity and risk

analysis; validating a cost estimate; documenting and briefing results; updating estimates with actual costs; EVM; and the composition of a competent cost estimating team.

3 SCOPE

3.1 CRITERIA FOR APPLICATION OF EVM

Per OMB Circular A-11, an EVM System is required to be applied to those parts of the *major investment* where *developmental effort* is required.

OMB Circular A-11 defines a "major acquisition/investment" to mean a system or project requiring special management attention because of its importance to the mission or function of the agency, a component of the agency or another organization; is for financial management and obligates more than $500,000 annually; has significant program or policy implications; has high executive visibility; has high development, operating, or maintenance costs; or is defined as major by the agency's capital planning and control process. OMB may work with the agency to declare other investments as major investments.

An IT investment is considered "Major" at the Department of Justice if it meets any of the following criteria below:

1. Software development projects with Current Year (CY) Life Cycle Development costs (DME) greater than $10M or $25M over a 5-year period (CY+4) (DOJ Order 2880.1b 6.c.2.b)

2. Tech Refresh/Hardware Upgrade projects with Current Year (CY) Life Cycle Development costs (DME) greater than $50M or $250M over a 5-year period (CY+4)

3. Multi-Agency Collaboration investments such as E-Gov and Line of Business initiatives that require the efforts of more than one agency (OMB Circular No. A-11 2010, Section 300)

4. Projects specially designated by the DOJ CIO, Component CIO, or OMB as Major Investment due to Congressional interest, technological complexity, risk, a large commitment of resources, or the program is critical to achievement of a mission capability or set of capabilities.

Development effort is work that involves developing or applying new technology or systems to fulfill the investment's intended functions. This includes modernization or enhancements to existing systems.

For programs meeting the above definitions for major investments with developmental effort, DOJ Order 2880.1B, Information Resources Management Program states that ANSI/EIA-748 compliance is required for major Development / Modernization / Enhancement (DME) IT projects having annual DME costs of $10M or more; or five year life-cycle DME costs of $25M or more; or is required for those major and non-major DME IT projects requiring the special attention of the DOJ CIO. For those projects requiring the special attention of the DOJ CIO, factors that may be considered in determining the applicability of ANSI/EIA-748 compliant EVM include the level of management visibility, level of DME funding, duration of the development phase, and level of risk.

Investments not meeting any of the above criteria are not required to use an EVM System as a planning and control tool for program management. However, an EVM System does provide

benefits to any program with developmental effort and Department program managers are encouraged to review the guidelines and standards available to determine if tailored EVM System processes may be an effective means of managing program performance and risk.

3.2 APPLICATION TO PROGRAM COSTS

Earned value principles shall be used to plan and manage development activities for Major IT investments (including development efforts supporting a mixed-lifecycle investment) and project future impact of variance (e.g. Budget at Completion, Estimate at Completion). EVM compliance with ANSI/EIA-748 is to be applied to all program DME costs that meet the criteria defined in Section 3.1. This includes DME work performed by both contractors and direct Government personnel (i.e., federal employees). Performance measurement shall occur at the investment level to be applied to both Government and contractor efforts, regardless of contract type. Solicitations and contracts for DME IT efforts subject to EVM requirements shall reference the Federal Acquisition Regulation (FAR) EVM provisions and clauses included in Appendix C of this document for convenience. EV data for inter-agency projects (e.g., e-Gov initiatives) should be collected and reported by the lead agency.

For contracted effort, EVM applies to any DME project regardless of contract type. However, EVM is not commonly applied to fixed price contracts since this contract type is typically not appropriate for DME work. If DME work is contracted under a fixed price arrangement, and the payment method is some form other than performance based progress payments, the program manager may request an exemption to use a tailored approach to EVM. Any exemptions must be approved by the component CIO and the DOJ CIO.

Agencies shall define the requirements for implementing EVM in compliance with ANSI/EIA-STD 748 on both new and ongoing major acquisitions (contracts)

   i.   Evidence should include contract language and/or project management documentation requiring the use of EVM in compliance with the ANSI/EIA-STD 748
   ii. For contracts requiring EVM, Earned Value data and documentation certifying EVM compliance with ANSI/EIA-STD 748 should be readily available to OMB upon request.

EVM does not apply to costs associated with steady state systems or a program's Operations and Maintenance costs. Operational Analysis should be used to measure how well the investment is achieving expected cost, schedule, and technical and customer performance goals. Guidance on operational analysis for steady state systems or effort is included in future versions of the DOJ IT Governance Guide.

3.3 DOJ COMPONENT RESPONSIBILITIES

Department components are responsible for developing and implementing an ANSI/EIA-748 compliant EVM System. The DOJ component EVM System is required to comply with the policies and standards identified in Section 2.0 of this document and to implement OCIO guidance on EVM. The DOJ component EVM System is owned by the component and is also governed by the component's policies and procedures.

Department components are required to plan and manage DME efforts meeting the criteria of section 3.1 with the component EVM System. The OCIO will work with the DOJ component CIOs to determine which programs require the use of the DOJ component EVM System.

Department components are responsible for ensuring contractor compliance with the DOJ component EVM System and coordinating with the DOJ CIO on ANSI/EIA-748 system compliance reviews. Appendix B, DOJ Objective Evidence List, should be used to assess compliance with ANSI/EIA-748. The Department component may accept successful ANSI/EIA-748 compliance or validation reviews performed on the contractor EVM System by other Department components or federal agencies. If a DOJ contractor does not have access to a previously validated ANSI/EIA-748 system, then the contractor is responsible for implementing and verifying system compliance to ANSI/EIA-748 contract requirements using an independent contractor or agency that specializes in conducting an EVM System demonstration and documenting the contractor's EVM System compliance to the ANSI/EIA-748 standard. The DOJ component should be involved in the contractor's EVM Implementation plan and status, as well as, reviewing the validating contractor or agency reports documenting compliance to ANSI/EIA-748.

The Department component should follow the contractor's validated EVM System description and procedures without adding more restrictive or administratively costly system process requirements unless there are valid reasons provided by the PMO to the DOJ CIO. Examples of system process changes include imposing a specific earned value technique to be used on the project/contract, or imposing minimum restrictions on the amount of Level of Effort on the project/contract, or imposing an amount of discrete planning effort on the project/contract. If the Department component is aware of significant cost, schedule or technical risk to achieving project goals, then more management visibility and control may be required.

The Department component's participation in Integrated Baseline Reviews (IBRs) of contractor planning is critical to managing development effort and alerting the Department component to contractor compliance to their validated ANSI/EIA-748 EVM System description/procedures. In addition, after the IBR the Department component involvement in contractor changes to detail planning of schedule or cost, uses of management reserve, distribution of undistributed budgets, or more frequent (weekly) reporting at levels below the control account may be needed especially during periods of significant risk. The potential risk for cost or schedule variance to plan in development work is frequently due to changing requirements as the design evolves into more specific details or as the users gain more system operational knowledge. To mitigate this risk, the Department component's timely visibility and involvement in the contractor's cost and schedule changes to project planning and variances to plan becomes an essential tool for project management.

3.4 EXEMPTIONS

For major DME IT investments that meet the criteria for implementing an ANSI/EIA-748 compliant EVM, but possessing strong written justification explaining why EVM is not appropriate for the investment, exemptions may be granted by the DOJ CIO.

4   PROCESSES

The Department has established a framework for developing an ANSI/EIA-748 compliant EVM System. It defines the processes, typical evidentiary documents, and special considerations that are required of programs with projects meeting the Department's criteria to implement EVM. This section is organized according to the high-level categories defined by ANSI/EIA-748:

- Organization,
- Planning , Scheduling, and Budgeting,
- Accounting Considerations,
- Analysis and Management Reports, and
- Revisions and Data Maintenance
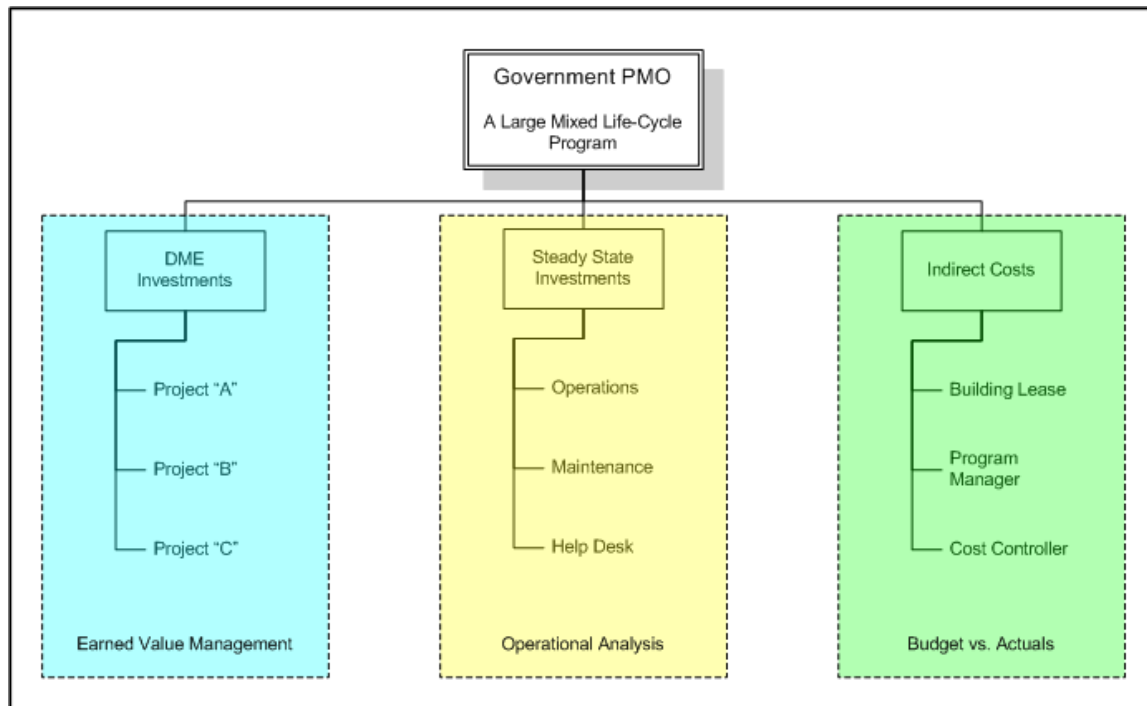
Figure 1: Mixed Life-Cycle Program Cost Categories

For the purposes of this section, a *project* is a collection of activities united by a common objective to create a unique product or service within a finite period of time. Progress toward the completion of these activities is discretely measurable. A *program* is a collection of similar or related projects or operations typically managed by the same team. For example, the project can be a phase of the program or a discrete effort required to attain a program goal or set of goals. Projects are typically developmental in nature and operations are typically steady state. Therefore, a program may be either of these types or may be a mixed lifecycle depending on the composition of the work included in it. If a program is responsible for submitting an OMB Exhibit 300 or contributing to an OMB Exhibit 300, its costs should be divided in three

categories: DME, Steady State, and Indirect Costs as illustrated in Figure 1. The focus of this document and any EVM System is the management of the DME costs.

4.1 ORGANIZATION

As stated previously, EVM involves the integration of the project scope, cost, and schedule. Before the cost and schedule can be planned, the scope of work must be defined and the organizational entities responsible for completing the work must be identified. The organizational requirements of an EVM System may be met with the preparation of a Work Breakdown Structure (WBS), its associated WBS Dictionary, an Organizational Breakdown Structure, and a method for integrating these structures for proper planning and control including the use of a WBS/OBS matrix and a Responsibility Assignment Matrix.

4.1.1 Work Breakdown Structure

The foundation for any EVM System must be set by organizing all project work into a defined logical structure. A product-oriented family tree of hardware, software, services, data and facilities is used in developing this structure. This structure will form the basis of communication throughout the acquisition process and the common link unifying the planning, scheduling, cost estimating, budgeting, contracting, configuration management, risk management and performance reporting disciplines. This structure is called a Work Breakdown Structure or WBS. A WBS deconstructs a project's end product into successive levels with smaller specific elements until the work is subdivided to a level suitable for management control. The WBS should be developed to at least the Control Account (CA) level, the lowest level in the WBS at which work must be defined.

By breaking the work down into smaller elements, management can more easily plan and schedule the program's activities and assign responsibility for the work. It also facilitates establishing a schedule, cost, and EVM baseline. Establishing a product-oriented WBS is a best practice because it allows a program to track cost and schedule by defined deliverables, such as hardware or software component. This allows a project manager to more precisely identify which components are causing cost or schedule overruns and to more effectively mitigate the root cause of the overruns.

The WBS is an illustration of what work will be accomplished to satisfy a program's requirements. Figure 2 shows the standard DOJ IT WBS. A WBS breaks down product-oriented elements into a hierarchical structure that shows how elements relate to one another as well as to the overall end product. A 100 percent rule is followed in the next level of decomposition of a WBS element (child level) in that it must represent 100 percent of the work applicable to the next higher (parent) element. Standardizing the DOJ IT WBS enables more consistent cost estimates, allows data to be shared across organizations, and leads to more efficient program execution. Not standardizing on a WBS causes great difficulty in comparing costs from one contractor or project to another, resulting in substantial expense to government estimating agencies when collecting and reconciling contractor cost and technical data in consistent format. The standard DOJ IT WBS should be tailored to fit each program. DOJ requires the preparation of a standard product oriented WBS in Statements Of Work for all major IT developmental efforts.

WBS Level

DOJ Project XYZ

1

Project System A Deliverables & Support Services WBS 1.

Project System B Deliverables & Support Services WBS 2.

2

System Development WBS Code: 1.1

Deployment, Installation & Checkout WBS Code: 1.2

3

Project Management & Planning WBS Code: 1.3

System Engineering WBS Code: 1.4

System Test & Evaluation WBS Code: 1.5

Training WBS Code: 1.6

Operation & Maintenance WBS Code: 1.7

Common Support Equipment WBS Code: 1.8

Data WBS Code: 1.9

Facilities WBS Code: 1.10

Figure 2: Standard DOJ IT Work Breakdown Structure

The WBS may take the form of a multi-leveled chart or an indented list of project tasks but in any form it must provide a visible framework to define the project content. The WBS will define all end products and services of the project to the level required by the management team to effectively plan and control the project. The WBS decomposes all in-scope project activity into distinct elements of manageable work. Due to the WBS's hierarchical structure, higher levels will aggregate the lower detailed level work element's scope, cost and schedule parameters. The WBS elements shall be assigned a unique number consistent with its placement in the hierarchical structure (e.g. 3.1.2, 3.1.2.1). The highest level of the WBS, usually level 1, is the total project summary of all the detailed level activity. There should be no project activity that is not covered by an element of the project WBS. Work omitted from the WBS is outside of the project's scope and its performance measurement baseline.

4.1.2 WBS Dictionary

Since WBS element titles are typically abbreviated, a more detailed explanation of the work

included helps to differentiate the activity in one work element from another. A WBS Dictionary provides a clear description of the effort required to accomplish all work in each element of the WBS elements. Ideally, the WBS Dictionary entry for each WBS element should be of sufficient detail to allow team members not initially involved in the project planning the ability to gain a thorough understanding of the planned work required to meet the projects objectives. In the best examples, a WBS Dictionary will include descriptions at DOJ PMO summary reporting levels and the control account level:

- A description of the resources and products necessary to begin work,

- A description of the work that will be performed, and

- A description of the end product(s)

If prepared properly, the WBS and WBS Dictionary will clearly define the scope of each WBS element and by extension the scope of the entire project. These documents should reflect the way the project management team intends to manage the project. This includes defining which WBS elements will be performed in-house or contracted.

4.1.3 Organizational Breakdown Structure

A significant component to EVM is assigning responsibility for project task completion to functional organizations within the performing team. The Organizational Breakdown Structure (OBS) identifies each organizational entity responsible for a subset of the WBS elements. The OBS divides the project team into distinct groups and graphically identifies the distribution of authority. In its simplest form, the OBS is an organization chart. The OBS should represent all government and contractor organization elements responsible for project performance. If Integrated Product Teams (IPT) are formed from government and contractor staffs, then these IPTs should be represented on the OBS in place of distinct government and contractor groups. Finally, the organizational entity responsible for controlling indirect costs should also be identified.

4.1.4 Organizational Structure Integration

In order for the Work Breakdown Structures and the Organizational Breakdown Structures to be effective for project planning and control, these must be integrated with each other. One method for representing the integration of the WBS and OBS is to prepare a relationship diagram such as the one shown in Figure 3 which is a type of Responsibility Assignment Matrix (RAM). This view shows the intersection point of the WBS and the OBS and identifies the Control Accounts (CAs) in the project. The CA is the level most commonly used for internal and external EVM reporting. It integrates technical work scope, schedule, budget and organizational responsibilities and it is managed by the Control Account Manager (CAM).
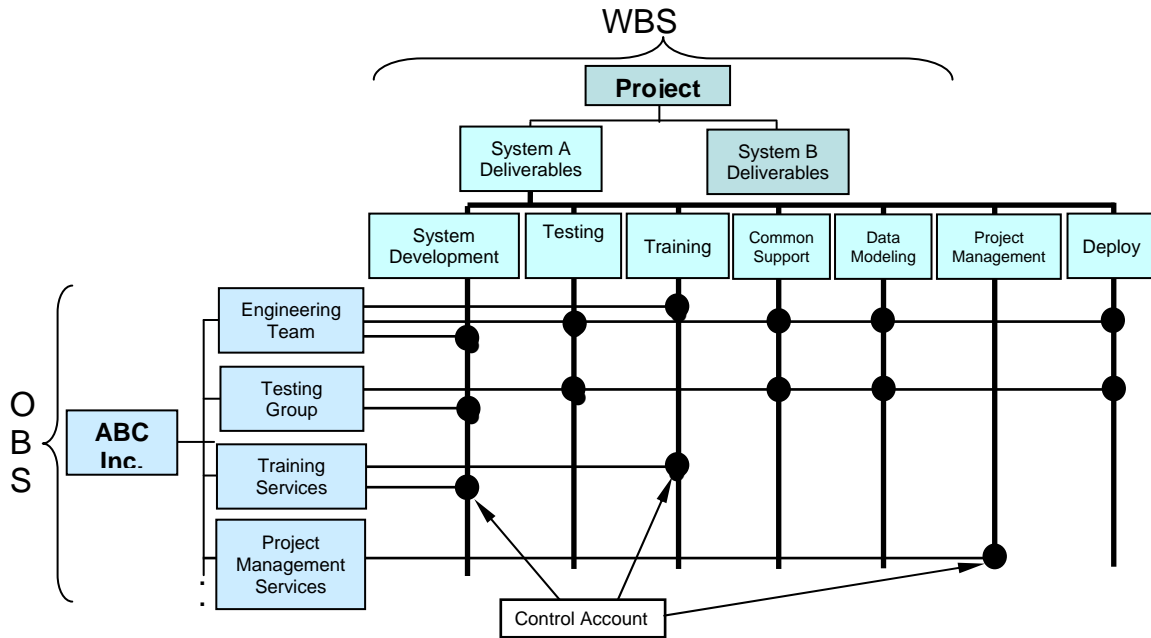
Figure 3: Responsibility Assignment Matrix – Control Accounts

Another effective alternative is shown in Figure 4. This RAM serves to cross-reference the WBS to the OBS and shows which specific organizational resources are responsible for work in each CA. Although there are various ways to show the data, a simple and effective way is to mark the intersection either with an uppercase X to show who has primary responsibility and a lowercase x to show who has supporting responsibility.

X = Primary Responsibility x = Supporting Responsibility	Responsibility Assignment Matrix						
	Project XYZ – System A Deliverables						
ABC Organization	System Development	Testing	Training	Common Support	Data Modeling	Project Mgmt.	Deployment
- Tim Smith – Engineering Team	X	x		x	x		x
- Sue Price – Engineering Team	x	x	x		x		x
- June Belle – Testing Group		X					
- Steve Mays – PM Services						X	
- Dotty Ryan – PM Services		x	x			X	x
- Bill Smith – O&M Group							X
- Andrew Vase – IT Support				X			
- Claire Jones – Data Team	x				X		
- Jeff Rose – Training Services			X	x			x

Figure 4: Responsibility Assignment Matrix - Resources

For some projects, it may be desirable to summarize performance by both the WBS and the OBS, although for most DOJ projects, summarization by WBS alone will suffice. If performance summarization by OBS is desirable, it will be necessary to construct the lowest WBS elements (i.e., work package level) such that only one organizational element has responsibility for its completion.

Methodologies must be established for planning scheduled dates, preparing costs estimates, recording actual costs, and calculating the earned value according to the WBS, at least to the Control Account Plan (CAP) level. In other words, the scheduling and financial accounting systems should be capable of replicating the WBS to the CAP level. The CAP is the lowest level in the WBS at which work *must* be defined with specific start and finish dates, organizational responsibility is assigned, a specific planned value (PV) is defined, actual costs (AC) will be collected, earned value (EV) will be calculated, and management control is afforded without undue burden. Comparing Figures 2 and 3, these examples illustrate a project with most Control Accounts at WBS level 3 and most Work Packages at level 4. Many financial accounting systems were not designed with project performance tracking in mind. This may necessitate the collection of status reports directly from team members to meet the requirement.

4.1.5 Organizational Processes

A WBS, WBS Dictionary, and OBS should be prepared for all of the Department's major DME IT projects. These documents should be prepared by the project team before any discrete performance based activity begins. If portions of the work effort are contracted, the contractor should be requested to report EV data according to the WBS prepared by the project team.

If possible for ease of accounting and reporting, the WBS should be replicated in the financial control system to the control account level. Charge numbers should be established for a one-to-one correspondence with the control accounts.

4.2 PLANNING, SCHEDULING, AND BUDGETING

Major IT acquisitions should be structured into useful phases or segments/increments using unique WBS element codes. Segments and increments should correspond to the delivery, implementation and testing of workable systems or solutions in discrete increments, each of which comprises a system or solution that is not dependent on any subsequent increment in order to perform its principal functions. WBS codes must define scope of effort or delivery items, start and end dates, time phased cost budgets, and identification of contractor or government element of work (labor, material, subcontract, other direct cost) that support the program/project's entire DME objectives. The total program/project DME Budget at Completion (BAC) is controlled by the total baseline for all Fiscal Years reported in the OMB Exhibit 300 or other customer/sponsor funding or other stakeholders providing resources for the project. The DOJ/component PMO will maintain a Project Log of total project BAC value and the specific authority, general scope, and date of incorporation into the BAC. Incremental funding authorizations will generally affect the time phasing of budgets and scheduling of project scope but would only affect the total budget if project scope/objectives were specifically deleted or added by the PMO authorization process.

4.2.1 Funding and Performance Measurement Baseline Differences

Funding is financing for payment and budgeting is the Program Manager establishing cost goals with technical and support managers prior to starting work. Establishing the budget baseline provides a clear initial communication of project cost objectives tied to scope deliverables.

Funding and budget are sometimes equal when the initial budget baseline is established. However, after the initial budget baseline is established, funding can be adjusted to match actual costs to date and the time phased estimate of costs to complete the remaining work. Budgets (especially detail work package budgets) tend to stay fixed and are not adjusted to match actual costs. The fixed budgets are near-term detail-planned cost goals (work packages) and far-term planning package cost goals that must sum to the project Budget at Complete (BAC) and reconcile to the negotiated contract Target Cost or Target Price. The fixed budgets enable early identification and reporting of cost problems by the comparison of actual costs to earned budgets for completed work (cost variances) with the explanations of cost variance cause, corrective action and updates of forecasted cost for remaining work (impact assessment).

Another potential difference between Budget baseline and funding is time phasing of cost. Funding is normally time phased to support estimated labor expenditure and material procurement order, whereas, time phased performance measurement budgets are based on estimated labor and material expenditure at point of usage. The longer the procurement lead-time, i.e., Purchase Order issue to material receipt or use, then the greater the potential difference between funding and budgeting time phased profiles.

The DOJ/Component PMO EVM baseline planning, scheduling, and budgeting will utilize a rolling wave approach to plan, schedule and budget. Future project phases or segments may be planned at summary WBS levels and then re-planned to include detail work package level planning prior to or with an authorization to proceed. The total budget baseline includes Contingency Reserve/Management Reserve, Undistributed Budget and time phased Performance Measurement Baseline distributions. All changes to the program budget base (total BAC including reserves) and changes to the total project monthly time phasing must be tracked and documented by the DOJ/Component PMO which includes an explanation citing the reason for change, WBS elements affected, and the appropriate work authorization reference for the revision.

Once the elements of work have been defined and the organizational entities responsible for completing the work have been identified, the work can be detail planned to establish the contractor and government Performance Measurement Baseline (PMB). To do this, the project team must identify the dependencies between the work elements, assign resources to the work element, estimate the work and/or cost required to complete the work element, and define a period of performance for each work element. This detailed level of planning is conducted at the Work Package and Planning Package levels in the WBS (Illustrated in Figure 5 Program Budgets).

Program Planning/Acquisition Funding or DOJ CIO DME Program Budget Base			
PMO Development (DME) = Performance Measurement Baseline (PMB)		**PMO Steady state**	**PMO Contingency Reserve**
PMO Distributed Budgets (Control Accounts)	**Undistributed Budget**		
PMO Work Packages	**PMO Planning Packages**		

PMO Support Contractors

PMO Government Employees

Government PMO

Prime DME Contractor Cost

Prime DME Contractor Fee

Contract Negotiated Target Cost	Contractor estimate of Authorized Un-priced Work
Contractor Performance Measurement Baseline (PMB)	Contractor Management Reserve
Distributed Budget (Control Accounts)	UB
Work Packages / Planning Packages	

Contractor

Figure 5: Program Budgets

4.2.2 Work Packages and Planning Packages

Work Packages are discrete elements of work which with planning packages define the time phased scope of a project. While they both have a specific budgeted cost, they differ primarily in the detail to which work is defined. A work package typically defines the end product of this unit of work, the tasks and resources (human or capital) necessary to complete the work package, and the time during which this work will be accomplished, and a defined earned value method for assessing the completed work. Refer to Appendix D, Common Earned Value Methods, for more information on earned value methods. In contrast, a planning package defines far term work in summary and reserves a time phased budget defined for its scope of work. Planning packages above the control account WBS element are called Summary Planning Packages (SPP). A planning package shall be converted into a work package before any of the encompassed work begins. Conversion of planning packages to work packages is normally considered to be re-planning of future work (no adjustments to prior planned budget values shall be included unless approved by the customer in advance of authorizing the re-planning). Scope, cost and schedule

parameters must be preserved at the Control Account level during the conversion of planning packages to work packages. All changes to time phased budgets are to be tracked and documented.

4.2.3 Contingency Reserve and Management Reserve

Contingency Reserve (CR) is a portion of a project's budget set aside by the Department or component CIO to cover the cost of unanticipated in-scope project activity. During the planning phase, senior management and the program/project manager shall establish a CR commensurate with the project's size, complexity, and risk exposure. CR should not be used simply to cover past cost variances caused by performance issues. CR is not part of the PMB. The use of CR shall be tightly controlled by the component CIO, the program/project manager, or his/her designee. Any use of CR must be documented in the Contingency Reserve Log as to reason for use, WBS element(s) assigned, and associated cost value. The work authorization or change authorizing documents shall note the source of budget from the CR log entry reference. The use of CR should not be used to fund out-of-scope activity added to the project.

Management Reserve (MR) is another term that is determined by the prime contractor within the negotiated contract Target Cost. For the purposes of this guide and EVM systems developed by the Department and its components, we will refer to MR as the portion of a contractor's budget set aside to cover the cost of unanticipated in-scope project activity. The Government PMO maintains and controls a CR for unplanned changes in scope to the program. The Government PMO CR is included in the total program budget values that are controlled by DOJ executive management approving investment planning for the Office of Management and Budget (OMB) funding submittals. The contractor maintains and controls a MR for scope changes to the contractor's control accounts/summary planning packages. Changes in MR require approval by the contractor's program manager. MR is generally for changes which are in-scope to the contract but out-of-scope to the work definition in control accounts or summary planning packages. MR use is determined by the contractor's EVM procedures (which are ANSI/EIA 748 compliant) and the program manager. The contractor MR plus the contract PMB must reconcile to the Contract Budget Base value (negotiated contract value plus contractor's estimate of authorized unpriced work).

4.2.4 Contractor Contract Budget Base

The contractor is responsible for maintaining a total project budget at completion (PMB plus MR) that reconciles to the negotiated contract Target Cost or Target Price plus the contractor's cost estimate for any Authorized Un-priced Work (AUW). All AUW effort requires an Authority to Proceed (ATP) document from the customer prior to the contractor's inclusion in the Contract Budget Base. All AUW effort expected to be started in the near-term (current month plus the next month) must be distributed and detail planned in work packages within the appropriate control accounts and planned in the Integrated Master Schedule (IMS). AUW effort that is beyond the near-term period may be retained in the Undistributed Budget log until negotiated with the customer.

4.2.5 Undistributed Budget

Undistributed Budget (UB) represents the budget for in-scope and planned work which can not presently be defined well enough to be placed in work packages or even planning packages. It differs from CR in that it shall be allocated to a specific purpose and since it is budgeted for defined work within the scope of the project, it is part of the performance measurement baseline. UB shall be allocated to planning packages or work packages as quickly as possible.   UB should also be time phased if possible and tightly controlled to ensure it is not being used to mask an overrun. An UB Log shall be used to track the distribution of UB to planning packages or work packages. In addition to stating the purpose for the allocated budget, the log shall also record the WBS elements where the budget was applied, the budgeted cost, and the period of performance. The work authorization or change authorizing documents shall note the source of budget from the UB log entry reference.

4.2.6 Performance Measurement Baseline

The PMB is the time phased project budget or spend plan against which project performance is measured. It is the sum total of all work planned and organized in the project work packages and planning packages and budget reserved such as Undistributed Budget. The process for establishing the baseline shall address:
  1. Graduated requirements for establishing a baseline based on size, scope, and development methodology of the investment.
  2. Governance relationships including specific organizations and roles within the agency for establishment, approval, management and change of baselines.
  3. A baseline shall cover a useful system component or capability, at a minimum. Agencies should encourage investment llifecycles of manageable duration so that baselines remain relevant.
  4. Baseline requests shall include, at a minimum:
      a. A description of the business need for the proposed baseline.
      b. A description of performance measures, including baseline performance and proposed target performance.
      c. A product-oriented work breakdown structure and cost estimate for proposed activities.

4.2.7 Integrated Baseline Reviews

As required by OMB Memorandum M-10-27, an Integrated Baseline Review (IBR) is to be conducted on all major DME IT projects. The IBR is a review of the PMB to gain common agreement and understanding of the plan for completing the project, to assess and evaluate project risk, and to set common expectations among key stakeholders. The IBR will be planned and conducted by the government Project Manager for both in-house and contracted efforts.   All key members of the performing government and contractor teams should participate in the IBR. If the project includes contracted effort, the contractor's project manager is required to review the technical scope, cost, schedule, risks, and performance goals for the contractor's portion of the projects work. The IBR may be conducted prior to contract award but otherwise should occur as soon as possible after contract award and should be repeated with significant changes in

the cost or schedule baseline or detail planning of major phases or segments. The NDIA's *Program Manager's Guide to the IBR* should be used as the primary reference document (see Section 8.1, NDIA Guides). Appendix E provides additional requirements concerning a baseline validation and approval process or Integrated Baseline Review (IBR). In addition to the requirements in FAR Subpart 34.202, the process includes:

- Pre-defined decision criteria to be used by the decision authority to determine if the plan is valid.
- A requirement for the proposed baseline to be well-documented, comprehensive, complete, and credible and consistent with industry and government best practices.
- Documentation of risks associated with cost, schedule, technical performance and management.

4.3 ACCOUNTING CONSIDERATIONS

While most current reference information is fairly clear regarding EVM accounting for contractors, there are unique considerations for Government EVM accounting that need to be addressed for the Department's programs. These topics are addressed in greater detail below. Information is also provided regarding the recognition of earned value for material costs. Regardless of the cost type, all actual costs are required to be collected and summarized in accordance with the WBS and actual costs must be recorded at least down to the control account level.

EVM Systems are performance management systems not accounting systems and while they may have some characteristics in common, EVM guidelines are not suggested changes to generally accepted accounting practice. Similarly the EVM System is not a replacement for an organizations accounting system. It will add convenience however when the accounting systems ledger of charge accounts for a given project can be constructed to match the project WBS at least to the control account level.

4.3.1 Considerations on Government Cost Budgeting and Recording Actual Costs

To be consistent with OMB capital planning and reporting guidelines, there are a few accounting considerations that must be recognized. Government Full Time Equivalent (FTE) costs should be budgeted using the mid-point step of the GS grade scale of the position required. The Government costs include the salaries plus a fringe benefit rate that is currently set at 32.8%. Project costs should include anyone spending more than 50% of their time supporting the project. Persons working on more than one project, whose contribution over all projects would exceed 50% of their overall time, should have their specific time allocated to each investment. Government costs should include these FTE costs even when the persons are funded out of a different source than project funding. Actual cost reporting should be consistent with the methods that were used to budget project costs.

4.3.2 Material Costs

Material Costs or costs related to purchased items for development efforts should be planned in

the time phased PMB at the time the project expects to *receive* the material items and not when they expect to be invoiced. Once the time phased plan has been baselined (normally at or after an IBR), the planned costs for the material or purchased goods should not be moved in time unless it is part of a re-plan of *future* work. It should not be moved to align with the receipt of an invoice for the material or because the material was purchased later than planned. The integrity of the original plan should always be maintained.

The EV and AC for the material should be recorded in the month that the equipment (material purchase) is delivered and ready for use by the project.

4.3.3 Reconciliation With Financial Systems

Frequently, an organizations accounting system is not capable of supporting the EVM requirements for two primary reasons. First, it may not accommodate the level of detail contained in most work breakdown structures. Second, the organizations accounting processes do not permit the timely accrual of actual costs. Project costs for labor, material, and other direct costs will be loaded in these tools from timesheets, bills of material and other sources. Periodically, these costs should be reconciled with the "official" cost record in the organizations accounting system to ensure the accuracy of the EVM data.

4.4 ANALYSIS AND MANAGEMENT REPORTS

EVM data must be collected, reported, and analyzed to identify performance issues to the baseline planning. Actions should be planned and executed to control exceptions to the project performance measurement baseline and provide updates to a current schedule plan and a monthly time phased cost for the required corrective actions. The current schedule and cost plans reflect a "most likely cost estimate" based on the contractor's estimated costs to complete the remaining work that is in significant variance to the baseline plan. In this way, the management team can prioritize and redirect future actions to effectively address the causes of adverse the performance baseline.

4.4.1 Monthly Status Reports

The project team should prepare Monthly Status Reports that include earned value data reporting and analysis. This is not only necessary to meet the requirements of ANSI/EIA-748, but provides a vehicle for disseminating project status to the team. The earned value metrics should play a key role in the management decisions that direct the execution of the project. The earned value data will illustrate the exceptions to the project baseline allowing the management team to focus critical resources on course corrections. A sample Monthly Status Report is provided in the Appendix A of this document.

4.4.2 DOJ OCIO Dashboard Reporting

The OCIO Dashboard was developed to inform the Department's executive stakeholders of project status and performance. The contents of the projects Monthly Status Report should be used to populate the data fields of this DOJ Intranet-based system. This data should be entered

monthly by the tenth business day of the month. Refer to the *OCIO Dashboard Users Guide* for more information regarding this tool.

The process the Department follows regarding the use of this tool is illustrated in Figure 6.
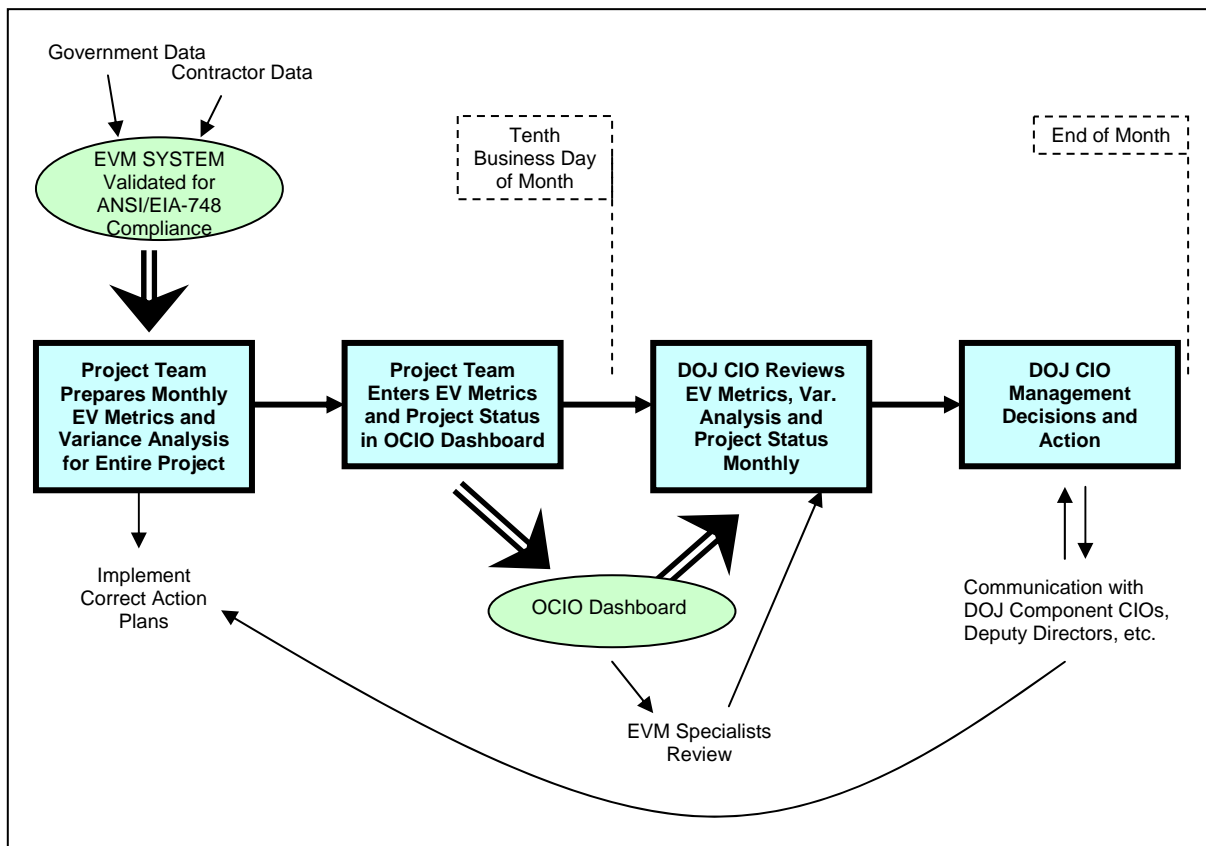
Figure 6: DOJ CIO Dashboard Review Process

4.4.3 Variance Reporting

The Department requires variance analysis reporting for cost or schedule variances of 5% or greater (positive or negative) at the project level of the WBS.   The variance analysis reports should include an explanation of the root cause of the variance, the variance's impact to the project, and the corrective action planned to remedy the variance.

Corrective or recovery action status should be provided monthly until the cause of the variance is neutralized and the variance has been corrected. The DOJ CIO will monitor the corrective action plans and status. DOJ CIO Action Items will be prepared during the DOJ CIO Monthly Project Status Review. These action items will be distributed to the project team.

If the variance persists in the 5 to 10% range for three months or if the variance grows to 10% or greater, the Office of the DOJ CIO will assist with corrective action planning through communications with the component CIOs or program manager as appropriate. This escalated response may be triggered earlier than stated at the discretion of the DOJ CIO depending on

factors such as importance to the Department's strategic objectives or high level of executive visibility. The purpose of this escalated response is to ensure that the DOJ portfolio of IT projects remains within 10% of the cost and schedule goals.

4.4.4 Estimate at Completion Updates and Reporting

Significant variances to plan require creation, review and monitoring of corrective action or recovery plans using the update to the Estimate at Completion. While the Planned Values establish a project goal for work remaining, the Estimate at Completion (EAC) provides the most likely cost outcome to the project which includes actual performance to date (Cumulative Actual Cost) plus the most likely cost to complete remaining work (Estimate to Complete - ETC). Initially, when the budget baseline is established, the EAC equals the BAC. After the initial budget plan is approved, the Department requires monthly updates to the EAC to include replacement of current month Estimate to Complete with the actual cost and an update to the ETC for significant cost or schedule variances or known technical problems needing added resources or costs to complete.

In addition to the monthly EAC updates, a comprehensive update to the ETC for all remaining project effort is required at least annually. The comprehensive update is a "bottom-up" or "grass roots" (work package/planning package) assessment including basis of estimate documentation with assumptions.   Just as the schedule updates of forecast and actual completion dates establish a current schedule plan, the Estimate to Complete is the current resource plan.

The EAC is generated by control account managers for program/project manager review and approval for reporting. The EAC is not a number generated by a formula but is a most likely time phased cost estimate from the control account manager to complete remaining work. It provides the project manager with an on-going early alert of potential cost risks/opportunities from key technical leads/managers without the formal management controls associated with budget goals and it avoids the surprise of major cost impacts normally associated with re-baselining. The updated EAC is normally tested using statistical EAC projections based on past cost and/or schedule performance. These tests can provide a most optimistic and most pessimistic range within which the EAC would be expected to occur and provide reference points from which to challenge the explanation of EAC values when the future trends are inconsistent with past performance.

As part of the monthly analysis of significant variances, the monthly values of ETC are loaded to the OCIO Dashboard and a comparison of EAC to BAC with explanations of significant difference are reviewed by the DOJ CIO.

4.4.5 Federal IT Dashboard Reporting

On June 30, 2009 OMB launched the Federal Information Technology (IT) Dashboard as part of the administration's initiative for Transparency in Government. The Federal IT Dashboard (**http://it.usaspending.gov**) provides a means for the public, Congress and other interested parties to obtain a high-level view of Federal program expenditures, overall program status, as well as details regarding program schedule and progress.

OMB requires each federal agency to have performance management systems that can create the data necessary to populate the Federal IT Dashboard cost and schedule tables on a monthly basis.

OMB requires that the data reported for the major IT investments in the Department's Exhibit 53 IT Portfolio Report and in the Exhibit 300 Capital Plans Report be made available on the Federal IT Dashboard. OMB provides the current Cost and Schedule status for each of the major IT investments. In addition, the DOJ CIO is required to rate each of the investments and to maintain the data current by providing monthly Dashboard updates as well.

To accomplish the monthly Dashboard updates, Components are required to provide updates to the DOJ OCIO Enterprise Solutions Staff (ESS) team by the 10th working day of the month. For each project major milestone or activity, the information requiring monthly updates include:

- Actual percent complete = (Earned Value/ Budget at Complete)*100
- Planned percent complete = (Cumulative inception to date Planned Value/Budget at Complete)*100
- Accrued actual costs incurred to date
- Actual Start Dates and Actual Completion Dates for scheduled and completed tasks
- Baseline updates

The DOJ OCIO ESS team will review the updates provided to ensure that the information posted on the Dashboard is accurate and consistent with budget and program status information available.

The process that the Department follows regarding the use of this tool is demonstrated in Figure 7.
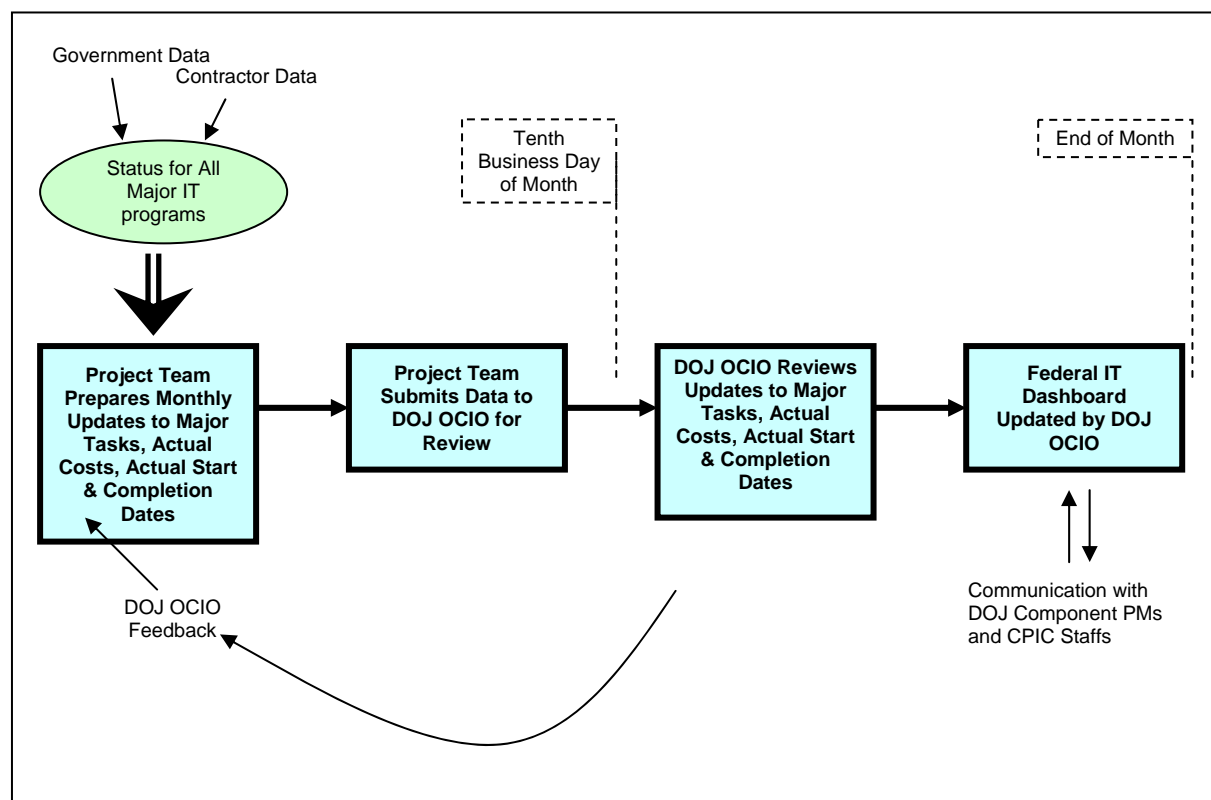
Figure 7: Federal IT Dashboard Update Process

1. The Federal IT Dashboard is not intended to be a replacement or substitution of DOJ or contract required EVM. Rather, the Federal IT Dashboard collects and creates visualizations of aggregate cost and schedule data for Major IT investments, among other performance data. Analysis of data represented on the Federal IT Dashboard should supplement existing investment control mechanisms within the Department.

    a. DOJ components are required to update cost and schedule data for major Investments on a monthly basis; performance measurement data when actual data has been measured (annually, at a minimum), and CIO Assessments and contract data when significant changes occur with the investment.
    b. The Department needs to report a transparent view of the investment baseline on the Federal IT Dashboard (Level 3 of the WBS have been communicated as a guideline). Levels 1 and 2 typically do not provide enough information to describe the work to be accomplished in short enough duration that early warnings of investment performance can be identified.

2. DOJ components are required to provide Earned Value reports on contracts requiring EVM to the Federal IT Dashboard on a monthly basis to include the following data elements at a minimum:

    a. Associated Unique Project Identifier
    b. Federal Procurement Data System (FPDS) Contract Identifier
    c. Planned Start and End Dates
    d. Authorized or PMO approved Budget At Completion
    e. Cumulative to Date: Budgeted Cost for Work Scheduled, Budgeted Cost for Work Performed, Actual Cost of Work Performed
    f. Cumulative to Date Cost Variance, Cost Performance Index
    g. Cumulative to Date Schedule Variance, Schedule Performance Index

This information is to be provided using the template below. Note that items f. and g. are calculated.

Data as of Aug 31, 2010	$ in Thousands	
Program Name:		
1st Contractor Name:		
Associated Unique Project Identifier:		
Federal Procurement Data System (FPDS) Identifier:		
Contract Planned Start Date:		
Contract Planned End Date:		
Authorized or PMO-Approved Budget At Completion (BAC):	$	5,000.000
Cumulative to Date Budgeted Cost For Work Scheduled (PV):	$	100.000
Cumulative to Date Budgeted Cost For Work Performed (EV):	$	120.000
Cumulative to Date Actual Cost of Work Performed (AC):	$	240.000
*Cumulative to Date Cost Variance (CV):	$	(120.000)
*Cumulative to Date Schedule Variance (SV):	$	20.000
*Cumulative to Date Schedule Performance Index (SPI):		1.200
*Cumulative to Date Cost Performance Index (CPI):		0.500
*Note: Calculated from Contractor data above.		

Data as of Aug 31, 2010	$ in Thousands	
2nd Contractor Name:		
Associated Unique Project Identifier:		
Federal Procurement Data System (FPDS) Identifier:		
Contract Planned Start Date:		
Contract Planned End Date:		
Authorized or PMO-Approved Budget At Completion (BAC):	$	10,000.000
Cumulative to Date Budgeted Cost For Work Scheduled (PV):	$	1,245.000
Cumulative to Date Budgeted Cost For Work Performed (EV):	$	1,200.000
Cumulative to Date Actual Cost of Work Performed (AC):	$	1,100.000
*Cumulative to Date Cost Variance (CV):	$	100.000
*Cumulative to Date Schedule Variance (SV):	$	(45.000)
*Cumulative to Date Schedule Performance Index (SPI):		0.964
*Cumulative to Date Cost Performance Index (CPI):		1.091
*Note: Calculated from Contractor data above.		

4.4.6 Integration with Portfolio Management

In accordance with OMB Memorandum M-04-24, project management, IT portfolio management, and Capital Planning and Investment Control decisions will use EVM data and analysis. The EVM data is reviewed by investment and collectively by the OCIO staff using the OCIO Dashboard as described previously. In addition, OMB Exhibit 300 submissions including EVM data are reviewed for consistency with the OCIO Dashboard EVM data.

4.5 REVISIONS AND DATA MAINTENANCE

The integrity of the EVM process is dependent on the control of revisions to the PMB and other recorded earned value data. Baseline changes will be permitted under limited circumstances and the level of authority required to allow the change depends on the type and reason for the change. All changes to the program budget base (total BAC including reserves) and changes to the total project monthly time phasing must be tracked and documented by the DOJ/Component PMO. These budget log documents must include an explanation citing the reason for change, WBS elements affected, and the appropriate work authorization reference for the revision. All projects loaded to the OCIO Dashboard require an explanation of the reason for changes to the time phased Planned Values included in the Project Status. Replanning of future work for the purpose of reducing or eliminating past cost variances is prohibited except as approved by the DOJ CIO.

4.5.1 In-Scope Change Versus Out-Of-Scope Change

As discussed earlier, in-scope activity might be inadvertently omitted from the planned work. The cost associated with completing this work should come from the project's contingency reserve. Occasionally it is necessary to alter the original scope of work to add or remove planned work. Changes to the scope of work require a contract modification and usually require a change in funding for the project. These situations require the project to be re-baselined. When the project is re-baselined for these circumstances, only the time phased cost baseline for the changed WBS elements should be re-baselined. The summary level WBS elements should be adjusted according.

4.5.2 Baseline Change Control Process

In addition to the reasons for re-baselining discussed in section 4.5.1, re-baselining may be necessary when, due to cost, schedule, or technical issues, the project's original PMB becomes unrealistic for either performance management or as a useful variance analysis tool. This re-planning may be necessary whether the target project costs remain unchanged (i.e., the remaining work is re-planned within the remaining budget) or if a project overrun has occurred or is projected to occur. The remaining work and budget should be thoroughly analyzed prior to suggesting this type of re-planning. Under no circumstances should the project be re-baselined merely to compensate for existing cumulative or current month cost or schedule variances. New baselines shall not be requested due to general cost and/or schedule slippages.

4.5.2.1 Reasons When a Re-baseline is Warranted

Re-baselining exists when a project is expecting to set the cumulative cost or schedule variances to zero when implementing a new plan for remaining work. Re-baselining requires approval of the program manager and the DOJ CIO prior to directing the development contractor to proceed with the planning process. The reasons for re-baselining should be documented in the request or presentation provided to the DOJ CIO for approval. Information regarding the re-baselining process may be found in Appendix F of this document.

Some reasons when a re-baselining is warranted on a project include the following criteria:

1. Earned Value information was unreliable due to:

    a. Cost and schedule variances were significantly high and not useful for variance analysis or incentivizing team goals

    b. Development contractor was unable to forecast performance because of flawed data

    c. Difficulty determining causes of performance problems due to lack of understanding of basis of estimate

2. Significant program scope changes (increases or decreases) from the current baseline.

    a. Significant change in investment goals (scope, requirements, objectives) resulting from internal or external management decisions, or changes in funding level or availability of funds (e.g. extended continuing resolution), or contracting (including contractual protests).

    b. In the case where an incremental or iterative system development and planning lifecycle has been chosen for the investment, progressive elaboration may be necessary when transitioning from one iteration or increment to the next, as scope and objective evolve. Such rapid evolution inherent to iterative development shall be approved by the DOJ CIO.

    c. Current baseline is no longer useful as a management tool for realistic performance measurement as variances are so high that they lose meaning.

3. Inability to effectively use the performance data.

4. No management reserve or rapid use of management reserve.

5. Lack of confidence in the Estimate at Completion (EAC) and/or current schedule.

6. Existence of zero budget work packages.

7. Delivery to user dates were changing and remaining schedule was no longer achievable.

8. Original software integration and test schedule durations were unrealistic.

9. Movement of future budgets in planning packages or Undistributed Budget to solve near-term problems without changing the scope for future planning packages or Undistributed Budget items.

10. Major disruption from development contractor/DOJ PMO planning assumptions greatly increased development contractor risk and changed significant assumptions relating to basis of estimate for the baseline.

    a. Inability to hire or loss of technical experience base or key manager/technical leads

    b. Added development contractor testing or DOJ PMO testing to existing contract requirements

    c. Inadequate customer funding

    d. New systems (engineering, quality, accounting)

    e. New or added senior management

    f. New or altered test facilities and procedures

4.5.2.2 Re-baselining Documentation

The DOJ/Component PMO is required to document their program budget change processes that manage, control and report all budget revisions in compliance with ANSI/EIA-748 and OMB direction. Re-baselining documentation shall include the following:

1. Description of changes to performance goals and measures.
2. Summary of the changes in the investment's scope and/or capabilities.
3. Identification of contributing problems, why the current plan is not feasible, and remediation plans to prevent problem recurrence, if applicable.
4. For major investments, updated Analysis of alternatives of the chosen alternative's cost data at a minimum (or new analysis if any of the original alternatives are no longer valid) and related recommendation.
5. Chronology of changes to an investment's work breakdown structure and cost estimate detailing variance from the most recently approved baseline.
6. Description of any contract implications or necessary actions assuring that the baseline accurately reflects contracting constraints and risks.

Most baseline changes can be completed with authorization from the program or project manager. However, if after a thorough analysis the project team believes it is necessary to significantly alter the project baseline, approval of the DOJ Component CIO and the DOJ CIO are required. Documentation explaining the reasons the project team recommends re-baselining the project baseline along with copies of the current and suggested baselines must be submitted to the Component CIO and DOJ CIO. The new baseline will only be established with the written approval of the Component and DOJ CIOs. The following sub-sections are intended to clarify what types of changes are appropriate and to define how changes are authorized.

Requests for baseline changes of major IT investments must be submitted in writing to the Departmental CIO by the DOJ/Component PMO. In requesting a re-baselining of a major IT investment, the project PMO must document the root causes driving the need to re-baseline and describe in detail the portions of the integrated baseline that are to be re-baselined by comparing the currently approved baseline to the requested baseline. The level of detail required is as follows:

- If budget or reserves are to be changed, provide a side-by-side comparison of the previously approved budget vs. the proposed re-baseline

- If the project completion date is to be extended, provide a side-by-side comparison of the previously approved master schedule vs. the proposed re-baselined master schedule

- If project success criteria or technical objectives are to be modified (e.g., descoped), provide a detailed side-by-side comparison of the previously approved scope baseline vs. the proposed re-baseline

- If acquisition strategy is to be modified, describe any changes in the proposed re-baselined acquisition plan

Information regarding the re-baselining process may be found in Appendix F of this document.

4.5.2.3 Baseline Revisions

Once the PMB has been established, any changes to it must be managed through a formal change control process. Only authorized changes will be made and these changes must be incorporated in a timely manner. The authorized changes must be reflected in both the budgets and schedules. All ANSI/EIA-748 compliant projects have a responsibility to ensure that changes to the PMB are documented. Furthermore, changes to the PMB must be recorded *prior* to the commencement of new work

4.5.2.4 Types of Baseline Revisions

PMB revisions are typically represented in the following categories:

- Internal Replanning

- Customer-Directed Change

- Application of Contingency Reserve

- Reprogramming

Internal Replanning is a normal management process that involves adjustments to remaining work scope (i.e., no retroactive changes). The adjustments are made within the projects original cost, schedule and scope constraints. Conversion of planning packages to work package detail planning is a common form of replanning. Clear distinctions shall exist between re-baselining and replanning. Adding or modifying detail within the overall cost and schedule goals shall not require a new baseline.

Customer-Directed Change, Application of CR, and Reprogramming require the project team to *re-baseline* the project since these revision types involve the adjustment of scope, cost, or schedule, or a combination of these project constraints. For Customer-Directed Change and Application of CR however, no retroactive changes should be made and therefore the cost and schedule variances will remain unchanged. Under Reprogramming, the BCWS (PV) and Budgeted Cost of Work Performed (BCWP) or Earned Value (EV) will be set equal to the Actual Cost of Work Performed (ACWP) or Actual Cost (AC) resulting in the elimination of all cost and schedule variance. However, this is an extreme measure only to be applied when, due to performance issues, all key stakeholders agree that the original plan was either seriously flawed or it is no longer practical to expect that the project team will ever regain parity with the original plan. *Any* baseline revisions, regardless of the type, should be documented according to a change control process compliant with the ANSI/EIA-748 guidelines.

4.5.2.5 Internal Replanning

Under replanning, adjustments may be applied to future work in the baseline as long as they have no effect on the total scope of work, baselined cost, or scheduled completion of the project. Replanning may include revisions such as:

- Adjusting future work between Work Packages within the cost and schedule constraints of a single Control Account,

- Adjusting future work between Control Accounts but remaining within the cost and schedule constraints of the project. This usually occurs when the original plan for the remaining work becomes unrealistic based on current cost, schedule, or technical factors.
- Distributing Undistributed Budget (UB)

Replanning is performed for technical reasons such as to implement a new approach for meeting the projects objectives in a less costly way. Replanning of future work for the purpose of reducing or eliminating past cost variances, using techniques such as front-loading, is prohibited. No retroactive changes (adjustments to BCWS) should result from replanning. Replanning is authorized by the program manager and should not result in any changes to the PMB or the adjustment of key milestones.

4.5.2.6 Customer-Directed Change

Customer-directed changes included contract changes and modifications that typically add or remove scope to the original PMB. For government program management organizations (PMOs), this may include scope changes directed by executive order, congressional mandates, and direction by the DOJ CIO, and Component CIOs. Typically, contract budget additions are placed in UB immediately after the change is received. UB is intended to be a temporary holding area and funds should be distributed to control accounts as soon as possible. No retroactive changes (adjustments to BCWS) should result from customer-directed changes. Customer-Directed changes are authorized by the customer and may result in an increased PMB and the adjustment of key milestones as necessary.

4.5.2.7 Application of Contingency/Management Reserves

As previously discussed, CR is a portion of the project budget managed and controlled by the Government PMO and MR is the portion of contractor budget set aside by the contractor to cover the cost of unanticipated in-scope project activity or rate adjustments. CR and MR should not be used simply to cover past cost variances caused by performance issues. CR and the PMB comprise the total project cost and MR and the contract PMB comprise the Total Allocated Budget which is reconciled to the Contract Budget Base (CBB). No retroactive changes (adjustments to BCWS) should result from the application of CR or MR without Government PMO concurrence. The use of CR is authorized by the customer program manager and the use of MR is authorized by the contractor program manager.

4.5.2.8 Reprogramming

Reprogramming is a complete replanning of the remaining project work. This typically takes place when project performance deviates significantly from the original plan and the key stakeholders agree that pursuing the original plan is no longer prudent. Usually the future work changes are such that the Control Accounts exceed the cost and schedule boundaries of the project. This requires the acceptance of an Over Target Baseline or additional project funding must be provided. For past work, the BCWS (PV) and BCWP (EV) will be set equal to the ACWP (AC) resulting in the elimination of all cost and schedule variance. However, reprogramming should always be accompanied by a thorough replanning of the remaining work

and should never be implemented solely to eliminate current variances. Reprogramming is authorized by the DOJ CIO and usually results in changes to the PMB and the adjustment of key milestones. Information regarding the re-baselining process may be found in Appendix F of this document.

4.5.2.9 Timely Re-baselining Update to Federal IT Dashboard

For major investments, once the Department has approved a new baseline or revision to an existing baseline, the DOJ CIO shall update the Federal IT Dashboard within 30 days with the current approved baseline. The following should be included in the update:
1. General baseline information
   a. Date of internal (DOJ) approval of the re-baselining event (per the governance process)
   b. Updated cost and schedule information for remaining tasks and newly planned tasks
   c. Selection of reason for change to baseline, and brief summary of the rationale used for the re-baselining event including changes to scope and/or capabilities.
2. Additions/modifications/deletions of performance measures, as appropriate.

The update to the IT Dashboard will be considered notification to OMB, and the Department will begin to report against the submitted baseline.

4.5.3 Corrective Action or Recovery Plans

If required by variance analysis as discussed in section 4.4.3, Corrective Action or Recovery Plans should be prepared by the project manager to explain the project team's plan to manage unacceptable cost and schedule variances. The corrective action plans should document:

- The strategies to be implemented to correct the variance,

- The resources required to implement the corrective action,

- The unplanned costs associated with the corrective action,

- The timeframe expected for the actions to have their desired effect, and

- The anticipated affect of these actions on the project

The Corrective Action Plans will be reviewed by the DOJ CIO and comments will be provided. Status on the corrective action plans will be provided monthly in the OCIO Dashboard.

4.5.4 Compliance Reviews

Compliance Reviews have been completed for all major DME IT programs meeting the DOJ cost thresholds that were performing developmental efforts in fiscal year 2006. Compliance Reviews for new programs will occur two months after either the initiation of developmental effort, or the award of the primary development contract. The review will be conducted by DOJ OCIO staff with the support of Department components and the project manager. Refer to Appendix B for a list of the documentation and their attributes required as evidence of the project's ANSI/EIA-748 compliance. Alternate documentation will be accepted as long as it

clearly meets the intent of ANSI/EIA-748. The DOJ CIO's performance management team will meet with the project team to collect the evidence and interview the project control team and/or cost account managers. The DOJ CIO's performance management team will document draft findings and review these with the project management team to ensure there were no misinterpretations of the requirements or evidence. The DOJ CIO's performance management team will then formally document the findings and provide an ANSI/EIA-748 Compliance Validation Report to the Component CIO. The findings will include resolution suspense dates. The requirement to complete a Compliance Review may be waived by the OCIO performance management team if a contractor can produce a letter of compliance authorized by the Cognizant Federal Agency.

4.5.5 Surveillance Reviews

The surveillance review is a recurring process that assesses the continuing compliance of the program or contractor's EVM System with ANSI/EIA-748 and the organization's written system documentation. In addition, the surveillance review ensures that the program or contractor's EVM practices:
- provides timely and reliable cost, schedule, and technical performance measurement information summarized directly from the program or contractor's internal management system,
- complies with the guidelines,
- provides timely indications of actual or potential problem,
- maintains baseline integrity,
- provides information that depicts actual conditions and trends,
- provides comprehensive variance analysis at the appropriate levels including proposes corrective action in regard to cost, schedule, scope, and other problem areas, and
- communicates actions taken to mitigate risk and manage cost and schedule performance.

To verify a projects continued compliance with the ANSI/EIA-748 standard, Surveillance Reviews will be conducted annually by the DOJ OCIO staff following a similar process as outline for the compliance reviews. All programs required to be compliant with the ANSI/EIA-748 standard are required to participate in an annual surveillance review. Current versions of the documentation provided and accepted during the compliance review will be reviewed along with actual recorded EVM data that may not have been available at the time of the compliance review. The documentation and data will be reviewed by the OCIO performance management team and creation and use of the data will be discussed with the program control staff and control account managers. The DOJ CIO's performance management team will document draft findings and review these with the project management team to ensure there were no misinterpretations of the requirements or evidence. The DOJ CIO's performance management team will then formally document the findings and provide an ANSI/EIA-748 Surveillance Report to the Component CIO. All findings must be addressed within an agreed upon time period to successfully complete the surveillance review.

4.6 TRAINING AND REPORTING

The DOJ OCIO will conduct EVM training seminars on an annual basis for all personnel with

investment oversight and program management responsibilities. These include all executive personnel with oversight responsibilities that need to understand EVM concepts to make sound investment decisions and all program personnel who work with or would like to get more proficient in EVM.

In addition to the annual EVM training seminars, DOJ OCIO will provide ad hoc training on significant revisions to DOJ EVM policy and guidance. It is also expected that each of the programs will further develop the skills of their personnel by conducting their own on-the-job training.

DOJ OCIO will maintain logs of all EVM training classes conducted by the Department.

Suggested EVM training references are provided in Section 8 of this document.

4.7 TEMPLATES AND TOOLS

4.7.1 OCIO Dashboard

The OCIO Dashboard is the Department's tool for EV reporting corrective action tracking. The OCIO Dashboard is a DOJ database that provides the DOJ CIO, DOJ component CIOs, and project managers with current status information on major and other highly visible information technology systems in the DOJ IT portfolio. The Dashboard query tool provides users with the ability to reference a database of DOJ IT systems using a web browser interface. The Dashboard is designed to provide the DOJ CIO, DOJ component CIOs, and project managers with a "quick reference" on the current cost, schedule performance, and risks for major and other highly visible DOJ IT systems.

4.7.2 Integrated Master Schedule Checklist

The OCIO Integrated Master Schedule (IMS) Checklist in Appendix G is the Department's tool for use during the development of the project IMS. The IMS Checklist identifies the essential elements that the PMO must consider in developing the IMS, including:

- Early planning
- Detailed schedule items, duration, and network relationships
- Cross functional tasks
- Schedule construction
- Resources
- And a final end-to-end check

The Checklist helps the PMO make sure the IMS includes all the elements required to meet the objectives of the program.

4.7.3 EVM Problem Resolution Checklist

The OCIO EVM Problem Resolution Checklist in Appendix H is the Department's tool to assist the PMO in identifying and correcting recurring EVM related problems. The Checklist helps the programs avoid the most frequently encountered EVM problems across the Department, including:

- Lack of adequate scope definition and scope management
- Lack of adequate cost definition and cost management
- Lack of adequate schedule definition and schedule management
- Weak Integrated Master Schedule with limited or no inter and intra-dependencies
- Inadequate risk identification and risk management
- Incomplete resource identification including skills required, availability and performance monitoring
- Inadequate contractor/subcontractor management throughout the life-cycle of the program

The EVM Checklist problem resolution recommendations are based on the Department's past program experiences and on industry best practices. These recommendations are broad in scope since project specific actions would require an understanding of the specifics of the project problems encountered.

4.8 INTEGRATION OF EVM SYSTEM WITH THE ACQUISITION PROCESS

The Federal Acquisition Regulation (FAR) includes standard contract clauses for including EVM requirements in government contracts. These clauses are included in Appendix C of this guide for convenience. Department procurement officials are encouraged to use the FAR provisions for the Department's major DME IT project solicitations and contracts. The Statement of Work (SOW) will also address the requirement for the contractor to maintain ANSI/EIA-748 compliant EVM System, the contractor's support of compliance and surveillance reviews, their obligations regarding the IBR, and any unique requirements imposed due to specific contract consideration.

5 KEY STAKEHOLDERS ROLES AND RESPONSIBILITIES

This section will establish the roles and responsibilities for key stakeholders in the EVM System development and implementation processes.

5.1 DOJ OFFICE OF THE CIO

The DOJ CIO is responsible for establishing the DOJ strategic policy and guidance on the implementation of EVM reporting across the Department on major IT projects/systems. The responsibilities of the DOJ OCIO staff regarding EVM reporting are to:

- Provide overall assurance that the contractors' EVM System continues to meet the requirements of the Department's EVM guidelines
- Provide specialized support or problem/project analysis as necessary on the implementation of EVM
- Review EVM reporting information submitted to the Department via the OCIO Dashboard
- Make recommendations for corrective actions
- Ensure that the DOJ EVM Framework continues to provide for effective EVM monitoring and reporting
- Monitor changes to the PMBs using the changes in the time phased budgets in the OCIO Dashboard
- Participate in baseline development and Integrated Baseline Reviews (IBRs)/Baseline Update Reviews (BURs) on an as needed basis
- Approve re-baselining implementation plan and the new baseline associated with re-baselining

5.1.1 DOJ Guidelines

In accordance with DOJ Order 2880.1B, Information Resources Management Program, the DOJ CIO is responsible for developing and implementing all department-wide project management guidelines including compliance with ANSI/EIA-748 on EVM System in the planning and execution of major IT projects, management reporting, and earned value analysis; issuing guidance on the implementation of EVM to the Department components; evaluating major IT projects periodically to monitor their progress against their original plans and identifying and addressing project risks; and establishing a project management training and development program for project managers.

5.1.2 DOJ Compliance Reviews

The Department's OCIO will conduct Compliance Reviews of the Department component's EVM System to ensure it complies with the guidelines on ANSI/EIA-748.

5.1.3 DOJ Surveillance Reviews

The Department's OCIO will annually conduct Surveillance Reviews to demonstrate that the Department component projects remain in compliance with ANSI/EIA-748.

5.1.4 OCIO Dashboard

The Department OCIO will maintain and enhance the OCIO Dashboard as a reporting tool to implement executive oversight as described in Section 4.4.2.

5.1.5 Federal IT Dashboard

The Department OCIO will update the Federal IT Dashboard on a monthly basis as required by OMB with the inputs received from the programs as described in Section 4.4.3.

5.1.6 DOJ EVM Training and Reporting

The Department OCIO will make EVM training available to project managers as described in Section 4.6.

5.2 DEPARTMENT COMPONENT CIO

The component CIOs are responsible for the implementation of the DOJ strategic policy and guidance on the major IT projects/systems within their components. The responsibilities of the component program/project managers regarding EVM reporting to the Department are to:

- Ensure completeness, continuity, consistency, and quality of the EVM data

- Ensure contractor commitment to EVM as a business practice

- Ensure contractor's acceptance of the Department's guidelines and the ANSI 748 Standard with evidence that EVM is being used by the contractor to manage the program/project

- Ensure that the EVM discipline and integrity are maintained and that contractor generated changes to the EVM data are evaluated to ensure continued compliance with the ANSI 748 Standard

- Inform the contractor's program/project manager of any uncorrected deficiencies that affect the overall integrity of the project EVM data, and

- Perform periodic evaluations of planned versus actual of the project budget and schedule

- EVM data will be reported to the Department on a monthly basis in the OCIO Dashboard

5.2.1 Implementing DOJ EVM Direction

In accordance with DOJ Order 2880.1B, Information Resource Management Program, the Department component CIOs are responsible for demonstrating that Department resources are being well spent and managed, risks are being properly addressed, and IT investments are

producing a positive return on investment that supports the Department's mission; implementing procedures to improve IT project planning and execution and fully implement EVM System for major DME IT projects.

Department component CIOs are required to establish and validate performance measurement baselines with clear cost, schedule and performance goals through independent assessments or Integrated Baseline Reviews; manage and measure projects to within ten percent of baseline goals through the use of an EVM System compliant with the guidelines in ANSI/EIA-748 or, for steady state projects, perform operational analyses; assign to each IT project a qualified project manager; and avoid duplication by leveraging inter-agency and government-wide investments to support common missions or other common requirements.

Department component CIOs are required to implement OCIO guidance on EVM. Department components are required to use EVM to plan and manage development activities for major IT projects including development efforts under a mixed life-cycle. Earned Value data and analyses used to measure and report work progress on these major IT development efforts are required to be produced by EVM Systems that meet the guidelines set forth in ANSI/EIA-748. ANSI/EIA-748 compliance is required for major DME IT projects having annual DME costs of $10M or more; or five (5) year life-cycle DME costs of $25M or more. In addition, ANSI/EIA-748 compliance is required for those major and non-major DME IT projects requiring the special attention of the DOJ CIO. Department components shall conduct periodic system surveillance reviews to ensure the EVM System continues to meet the guidelines in ANSI/EIA-748.

5.2.2 Ensuring Contractor Compliance

Department component CIOs are responsible for establishing the provisions or contract clauses to be used in major acquisition contracts directing the use of an ANSI/EIA-748 compliant EVM System. The FAR language covering contractual EVM System requirements is included in Appendix C of this document.

5.2.3 Compliance Review Support

Department component CIOs will assist in the coordination of Department OCIO Compliance Reviews of the Department component EVM System and the systems of their contractors.

5.3 PROJECT MANAGERS AND/OR CONTRACT OFFICER TECHNICAL REPRESENTATIVES (COTR)

The Department component project managers and COTRs shall be responsible for the following.

5.3.1 Implement EVM

Project Managers and/or COTRs are required to include EVM reporting requirements in Statements of Work and in-house Project Charters for projects meeting the criteria out lined earlier in this document.

5.3.2 Conduct Integrated Baseline Reviews

Project Managers are responsible for planning and conducting Integrated Baseline Reviews on in-house projects and with contractors for major projects with DME IT work.

5.3.3 EVM Briefings

Project Managers are required to brief corrective action plans to the component CIOs for projects with variances greater than +/- 5% of the schedule and cost objectives.

5.3.4 Establish Contingency Reserves

Project Managers are required to establish contingency reserves commensurate with the projects scope, risks, and complexity.

5.4 PROCUREMENT OFFICIALS

5.4.1 Contract Language

Procurement officials are encouraged to work with the Department component CIOs to include provisions or contract clauses in major acquisitions requiring the use of an ANSI/EIA-748 compliant EVM System. The FAR language covering contractual EVM System requirements is included in Appendix C of this document.

5.4.2 Implement EVM

Procurement officials are required to ensure the provisions and clauses are included in all contracts requiring the use of an ANSI/EIA-748 compliant EVM System.

5.4.3 Contractor Compliance Verification

Procurement officials may be required to assist project managers in verifying contractor claims to possessing a previously validated EVM System whether validated by the same agency or another. This may also involve a decision whether to recognize another agencies validation.

5.5 CONTRACTOR ORGANIZATIONS

Develop an in-house EVM System compliant with ANSI/EIA-748 for consistency across programs contracted with federal agencies. Additional contractor responsibilities include the following.

5.5.1 Conduct Integrated Baseline Reviews

Contractor Project Managers are responsible for planning and conducting Integrated Baseline Reviews with Government Project Managers.

5.5.2 EVM Briefings

Contractor Project Managers are required to brief the Government Project Manager of their corrective action plans for projects with variances greater than +/- 5% of the schedule and cost objectives. Government Project Managers may alter the reporting criteria.

5.5.3 Establish Management Reserves

Contractor Project Managers are required to establish management reserves commensurate with the projects scope, risks, and complexity.

5.5.4 Ensure Sub-Contractor Compliance

Contractor Project Managers are required to flow down EVM System requirements to major sub-contractors.

5.6 DEPARTMENT IT INVESTMENT REVIEW BOARD (DIRB)

The DIRB reviews the project EV data as part of their oversight responsibility. The EV data is used to evaluate risks to the IT project development effort and in preparing recommendations for corrective action on the IT project.

6   GLOSSARY

Accrued Cost   The expected dollar value of costs incurred for goods and services received or consumed without regard to the timing of vendor payment. Generally for development work, the purchases are recorded upon receipt of the goods and services. Reporting accrued costs is absolutely necessary for accurate financial reporting and program management. Reporting cost data on an accrual accounting basis, rather than a cash basis, is critical for tracking and managing actual cost information in any management information system such as an earned value management system.

Activity   A time and often cost consuming element of work performed during the execution of a project. An activity is frequently displayed on a schedule network graphic by a solid line or bar between two events (the activity start event and the activity finish event).

Actual Cost   See Actual Cost of Work Performed (ACWP).

Actual Cost of Work Performed (ACWP)   The costs actually incurred or accrued in performance of the work completed within a given time period. It is typically expressed in terms of cumulative to date or monthly dollars and hours. In some cases where late vendor invoicing exists on completed work, the accrued actual costs are estimated using procurement documentation. With each monthly reporting period, ACWP is reconciled to the formal accounting books of the reporting entity. ACWP is the same as Actual Cost (AC).

Actual Direct Costs   Those costs identified specifically with effort required for a contract or project product or service delivery.

Applied Direct Costs.   The actual direct costs recognized in the accounting time period (associated with the consumption of labor, material and other direct resources) without regard to their date of commitment or the date of payment. These amounts are to be charged to the appropriate work-in-process when any of the following takes place:

(1)   Labor, material and other direct resources are actually consumed.

(2)   Material resources are withdrawn from inventory for use.

(3)   Material resources are received that are uniquely identified to the contract and scheduled for use within sixty (60) days.

(4)   Major hardware components or assemblies that are specifically and uniquely identified to single, serially numbered end-item that are received on an assembly line-flow basis.

Apportioned Effort   Effort that by itself is not readily divisible into short-span work tasks but which is related in direct proportion to measured effort.

Authorized Work   That effort which has been defined and priced by a negotiated contract, plus that effort for which definitized contract costs have not been agreed to but for which written authorization has been received (Authorized Unpriced Work).

Budget at Completion (BAC)   The sum of all budgets for planned work in the project. It usually refers to the distributed budgeted cost for the entire project (i.e., BCWS at the project's

completion) plus any undistributed budget tasks not time phased in the BCWS. The BAC plus Management Reserve is reconciled to the Contract Budget Base (CBB).

Budgeted Cost for Work Performed (BCWP)   The sum of all budgets for planned work actually completed within a given time period. It is typically expressed in terms of cumulative to date or monthly. The BCWP is the same as Earned Value (EV).

Budgeted Cost for Work Scheduled (BCWS)   The sum of all budgets for planned work scheduled for completion within a given time period. It is typically expressed in terms of cumulative to date or monthly increments. The BCWS is the same as Planned Value (PV).

Baseline Update Review (BUR)   A Baseline Update Review (BUR) is a modified Integrated Baseline Review joint customer/contractor activity walking through and assessing a new Performance Measurement Baseline as a result of re-baselining. The purpose of an BUR is to verify the technical content of the Performance Measurement Baseline (PMB), to assess the accuracy of the related resources (budgets) and schedules and to identify potential risks to achieving the new baseline.

Capital Planning and Investment Control (CPIC)   A process to structure budget formulation and execution and to ensure that investments consistently support the strategic goals of the Agency.

Commitment   The incurrence of a liability for goods or services. It is that portion of the goods or services that have been ordered but not received. The point where a contractor enters into a formal agreement with a supplier establishes a buyer commitment equal to the negotiated dollars on the agreement. Normally, purchasing commitment establishes the point in time that a buyer's project liability needs funding from the ultimate customer acquiring the end product use or service.

Contingency Reserve (CR)   An amount of the total allocated budget withheld for management control purposes rather than designated for the accomplishment of a specific task or set of tasks. It is not a part of the Performance Measurement Baseline (PMB), but it is included in the total Project Budget Base (PBB). Contingency Reserve and Management Reserve cannot be a negative value.

Contract Budget Base (CBB)   The negotiated contract cost plus the estimated cost of authorized unpriced work, where:

> (1) Negotiated Contract Cost is that cost on which contractual agreement has been reached. For an incentive contract, it is the definitized contract target cost plus/minus the value of changes which have been priced and incorporated into the contract through contract change order or supplemental agreement. For fixed-fee contracts, it is the negotiated estimated cost. Changes to the estimated cost will consist only of the formal contract modifications or change orders or change in the contract statement of work, not for cost growth, and

> (2) Estimated cost of authorized, unpriced work is the estimated cost (excluding fee or profit) for that work for which written authorization has been received, but for which definitized contract prices have not been incorporated into the contract through supplemental agreement.

Contract Target Cost (CTC)   The dollar value (excluding fee or profit) negotiated in the original contract plus the cumulative cost (excluding fee or profit) applicable to all definitized changes to the contract. It consists of the estimated cost negotiated for a cost plus fixed fee contract and the definitized target cost for an incentive contract. The contract target cost does not include the value of authorized/un-negotiated work, and is thus equal to the contract budget base only when all authorized work has been negotiated/definitized.

Contract Target Price (CTP)   The negotiated cost plus planned profit or fee.

Control Account   A management control point at which actual costs can be accumulated and compared to earned value/BCWP. A control account is a natural control point for cost/schedule planning and control since it represents the work assigned to one responsible organizational element on one work breakdown structure element.

Control Account Manager (CAM)   The individual designated as directly responsible for the management of a Control Account. The Control Account Manager is responsible for planning and managing the resources assigned for the accomplishment of the task.

Control Account Plan (CAP)   Low level detail plan prepared by the Control Account Manager showing time phased planning of tasks and their associated budget for a Control Account.

Cost Element   Synonymous with Element of Cost. Cost elements are types of costs: direct labor, direct material, and other direct costs.

Cost Performance Index (CPI)   The value earned for every unit of actual cost expended. CPI = BCWP / ACWP = EV / AC. A CPI of greater than or equal to 1.0 represents favorable cost performance. A CPI of less than 1.0 represents unfavorable cost performance.

Cost Performance Report (CPR)   A monthly cost report generated by the performing organization to reflect cost and schedule status information for management.

Cost Variance (CV)   The difference between budgeted cost for work performed (BCWP) and actual incurred cost (ACWP).

Critical Activity   Any activity on the critical path.

Critical Path   A contiguous path of activities in a network having the longest total duration and thus defining the minimum duration of the project. Any slippage of an activity or event on the path will slip all following activities.

Critical Subcontractor   A contractor performing a complex portion of a contract which requires a flow down of EVM System or reporting requirements with various degrees of system integration, reviews, acceptance and control of subcontractor system and reporting. Critical subcontractors are designated as a result of customer negotiation or by management direction.

Development, Modernization, or Enhancement (DME) Cost   The project cost for new investments, changes, or modifications to existing systems that improve capability or performance, changes mandated by the Congress or agency leadership, personnel costs for project (investment) management, and direct support. This amount equals the sum of amounts reported for planning and full acquisition of the system in the OMB Exhibit 300.

Direct Cost   Any costs which can be identified specifically with a particular final cost objective. This term is explained in FAR 31.202.

Discrete Effort   Effort, which through pre-planning, can be:

    (1) Specifically defined and assigned a budget for accomplishment.

    (2) Scheduled in relation to clearly definable start and completion dates and

    (3) Contains criteria against which performance can be measured.

Earned Value (EV)   See Budgeted Cost for Work Performed (BCWP).

Element of Cost (EOC)   See Cost Element.

Estimate at Completion (EAC)   The estimated total cost to complete all project work. The EAC is the sum of the actual costs incurred to date (ACWP) and the estimated cost to complete the remaining work (ETC).

EAC = ACWP + ETC, or

EAC = AC + ETC

Estimate to Complete (ETC)   The estimate of the costs to complete work from a defined point in time, usually the current status period, through the end of the effort. It usually refers to the cost to complete the entire project but may be used in reference to a specific subset (i.e., WBS element or control account) of the project.

Front-Loading   The practice of budgeting more resources than necessary in the near term resulting in a shortage of budgeted resources in the far term. This practice is strongly discouraged since it effectively produces an unrealistically "rosy" picture of performance early in the execution of work or, if done while replanning, masks past negative variances.

Functional Organization   An organization or group of organizations with a common operational orientation, such as Quality Control, Engineering, Purchasing, Accounting.

Independent Estimate at Completion (IEAC)   A mathematically computed forecast based on performance to date and the mathematical projection of this performance to derive the estimated contract cost at completion. One of these methods is obtained by dividing the total contract budget value (BAC) by the cost performance index (CPI): i.e., IEAC = BAC/(BCWP÷ACWP).

Indirect Budget   The budget value established for costs to be incurred by persons and/or departments for tasks which do not have a direct relationship to the design, testing and/or production of the end product or contractually specified task.

Indirect Cost   That portion of labor, material, or other direct cost (ODC) not directly related, or specifically identifiable, to a contractually authorized end product or service. Such costs will usually include, but are not limited to, supervisory and administrative labor, and expendable type materials, such as operating supplies, utilities, and fringe benefits. Resources expended and not directly identified with any specific WBS product or service, or conveniently chargeable directly to a specific job order and, therefore, distributed over the appropriate direct labor and/or material base.

Integrated Baseline Review (IBR)   An Integrated Baseline Review (IBR) is a joint customer/contractor activity walking through and assessing the Performance Measurement Baseline. Integrated Baseline Reviews are typically performed within a few months after a contract has been awarded although they can be performed at any time, even pre-award. The purpose of an IBR is to verify the technical content of the Performance Measurement Baseline

(PMB), to assess the accuracy of the related resources (budgets) and schedules and to identify potential risks to the baseline.

Integrated Master Plan (IMP)   The overall program plan including the work definition, technical approach, performance criteria, and completion criteria. The IMP ties the WBS and SOW together.

Integrated Master Schedule (IMS)   The IMS expands the IMP to the work planning level. It defines the tasks, their durations, milestones, milestone dates which relate to the IMP completion criteria, and interdependencies required to complete the program. The IMP and IMS are used to track and execute the program.

Integrated Product Team (IPT)   A grouping of project personnel along project objective lines rather than along organizational lines. Integrated Product Teams are work teams that represent a transition from a functional organization structure to a multi-functional project objective arrangement.

Internal Replanning (In-Scope)   Replanning actions performed for the remaining scope of work within the scope of the contract. Example would be conversion of planning package to detail work packages, or use of Contingency or Management Reserve, or correction to administrative error inputting planning data. The contractor is required to notify the customer of all internal replanning actions, but the customer has no approval/ disapproval authority over this action.

Level of Effort (LOE)   Effort of a general supportive nature which does not produce definite end products. It is activity which cannot be associated with a measured task or milestone and is controllable by time phased budgets established for that purpose. For LOE activity BCWP = BCWS.

Management Reserve (MR)   An amount of the contractor's total allocated budget withheld for management control purposes rather than designated for the accomplishment of a specific task or set of tasks. It is not a part of the contractor's Performance Measurement Baseline (PMB), but it is included in the total Contract Budget Base (CBB). Management Reserve cannot be a negative value.

Master Program Schedule (MPS)   The highest summary level schedule for a program depicting overall program phasing and interfaces, contractual milestones, and program elements segregated by functional responsibility in support of specific program objectives.

Milestone   An event which has a finite, scheduled occurrence in time, signaling the start or finish of an activity, such as "begin spacecraft integration," "release drawings," "pipe inspection complete." A milestone should be discretely measurable; the passage of time itself is not sufficient to be a milestone. However, a milestone should be associated with a schedule date so that it can be determined when the milestone is to occur.

Mixed Life-Cycle Cost   Represents an investment that has both DME and steady state costs. For example, a mixed life-cycle investment could include a prototype or module of a system that is operational with the remainder of the system in DME stages; or, a service contract for steady state on the current system with a DME requirement for system upgrade or replacement.

Monthly Performance Report (MPR)   The performance measurement reports updated and generated monthly from the EVM System, at any selected WBS levels, and distributed to the

various levels of management to provide visibility into the cost and schedule condition of the selected WBS elements, from the work package up to the total program. This performance information is provided for current month, inception-to-date, and at-completion data.

Negotiated Contract Cost   (See Contract Target Cost). The estimated cost negotiated in a cost-plus-fixed-fee contract or the negotiated contract target cost in ether a fixed-price-incentive contract or a cost-plus-incentive-fee contract.

Network Diagram   A diagram in a prescribed format consisting of the activities and events which must be accomplished to reach program objectives and showing their planned sequence and interrelationships.

Operational Analysis (OA)   Operational analysis is the comparison of the performance of an IT asset or system to an established baseline. At a minimum, performance measures should include 1) how well the asset supports its customers and stakeholders and 2) how well the asset is managed by the agency. The results of this analysis are recommendations to agency managers as to the asset's continued use, modification, or termination.

Organization Breakdown Structure (OBS)   The hierarchical arrangement for a company management organization, graphically depicting the reporting relationships. Normally, the OBS is limited to showing only managerial positions, but may depict lower organization levels. The structure may also show subcontract relationship, depending upon the purpose of the OBS.

Other Direct Costs (ODC)   A group of certain accounting elements which can be isolated to specific tasks, other than labor and material. Included in ODC are such items as travel, computer time, and services.

Overhead Costs   (See Indirect Costs.)

Over Target Baseline (OTB)   A new performance measurement baseline exceeding the original target costs and resulting from failure to meet the desired or contractual cost and schedule goals. An Over Target Baseline requires the prior approval of the customer.

Over Target Schedule (OTS)   A new master schedule baseline exceeding the original target completion date and resulting from failure to meet the desired or contractual schedule goals. An Over Target Schedule requires the prior approval of the customer.

Percent Complete   The amount of completed work on a project relative to the total work budgeted. Equal to Earned Value/ Budget at Complete = EV/BAC. The total project level the BAC should include Management Reserve.

Percent Spent   The amount of incurred actual costs spent on a project relative to the most likely Estimate at Completion (EAC). Equal to 100 times (Actual Cost / Estimate at Complete) = 100 x AC/EAC. The EAC should include estimated cost for Undistributed Budget.

Performance Measurement Baseline (PMB)   The time phased budget plan against which project performance is measured. It is formed by the budgets assigned to scheduled control accounts and the applicable indirect budgets. For future effort, not planned to the control account level, the performance measurement baseline also includes budgets assigned to higher level CWBS elements, and undistributed budgets. It equals the total allocated budget less contingency or management reserve.

Performing Organization   A defined unit within the contractor's organization structure, which applies the resources to perform the work. (See Responsible Organization for comparison.)

Planned Value   See Budgeted Cost for Work Schedule (BCWS).

Planning Package (PP)   A logical aggregation of far term work within a Control Account that can be identified and budgeted, but is not yet defined into work packages. Planning packages are identified during the initial baseline planning to establish the time phasing of the major activities within a Control Account and the quantity of the resources required for their performance.

Procuring Activity   The subordinate command to which the Procuring Contracting Office (PCO) is assigned. It may include the PMO, related functional support offices, and procurement offices.

Program Directive   A document giving specific contract operation instructions. A program directive may be issued to inform functional organizations of program requirements, selected control system options, responsibilities, direct corrective actions and to authorize or limit expenditure of allocated budget.

Program Director/Manager   A generic term used to refer to the person responsible for executing the overall planning, direction, control, coordination and evaluation of the assigned project/program and variously designated as Program Manager, Project Leader or Program Director.

Program Risk Analysis   The system that provides a continuous analysis of identified risks, with respect to their impact on program cost, schedule and technical performance.

Program Schedules   Schedules which relate to Program Delivery Schedules and are initiated at the request of the customer or program management to reflect program plans for production of deliverable items.

Project   A collection of activities united by a common objective to create a unique product or service within a finite period of time.

Re-baselining   Replanning of the effort remaining in the contract, resulting in a new budget allocation which exceeds the contract budget base. The process may eliminate cumulative schedule and cost variances and produce a new Performance Measurement Baseline. Re-baselining actions require customer approval prior to implementation. See also Over Target Baseline (OTB).

Replanning   See Internal Replanning.

Reporting Level   A level or levels of the WBS designated for formal performance reporting to a customer, project sponsor, or other similar stakeholders.

Responsibility Assignment Matrix (RAM)   Delineates the bid/task matrix which identifies the interfaces of functional organizations and CWBS Elements, i.e., Control accounts.

Responsible Organization   (See Performing Organization for comparison). A defined unit within the contractor's organization structure which is assigned responsibility for accomplishing specific tasks.

Rolling Wave Concept   The progressive refinement of detailed work definition by continuous subdivision of downstream activities into near-term tasks.

Schedule Performance Index (SPI)   A performance indicator reflecting the relationship of earned value to budget.   It is calculated as follows: SPI = BCWP / BCWS = EV / PV. A SPI of greater than or equal to 1.0 represents favorable schedule performance. A SPI of less than 1.0 represents unfavorable schedule performance.

Schedule Variance (SV)   The difference between Budgeted Cost for Work Performed (BCWP) and Budgeted Cost for Work Scheduled (BCWS).

Significant Variances.   Those differences between planned and actual performance which require further review, analysis, or action. Appropriate thresholds should be established as to the magnitude of variances which will require variance analysis.

Statement of Work (SOW)   A document accompanying a letter, contract, or purchase order outlining the customer requirements.

Steady State Costs   Maintenance and operations costs associated with supporting current capabilities and performance level including costs for personnel, maintenance of existing information systems, corrective software maintenance, voice and data communications maintenance, and replacement of broken IT equipment. This amount equals amounts reported for maintenance of the system in the OMB Exhibit 300.

Subcontract   Effort on a given contract which has been issued to another manufacturer or supplier in accordance with the issuing contractor's design specification or directions as designed specifically for the end item being reported. A subcontract may or may not have EVM System reporting as a flow down requirement, based on the dollar value or criticality of the effort, or based on the agreement between the issuing contractor and its customer.

Summary Planning Package (SPP)   When it is impractical to establish Control Accounts for future effort, the budget may be set aside in CWBS budgets until the effort can be identified and planned to a Control Account. These budgets have an associated scope of work, are the responsibility of an appropriate level of the organizational structure, and are planned in Control Accounts as soon as it is practicable. These may sometimes be referred to as CWBS Budgets, CWBS Budget Accounts, or CWBS Budget Packages.

Supporting Effort   Effort which cannot be directly related to a specific scheduled requirement or discrete task. Supporting Control Accounts are normally planned as LOE where BCWP equals BCWS. Examples include: Manufacturing Support, Engineering Maintenance, Production Planning, Maintenance, etc.

Target Cost   (See Contract Budget Base and Contract Target Cost).

To-Complete Performance Index (TCPI)   The cost efficiency that would have to be attained in order to achieve the EAC value being used in the formula. It is calculated as follows: TCPI = Remaining Budget/current Estimate To Complete or [(BAC – BCWP)/(EAC-ACWP)] or [(BAC-EV)/(EAC-AC)]. A TCPI of less than or equal to 1.0 represents favorable cost performance. A TCPI of greater than 1.0 represents unfavorable cost performance.

Total Allocated Budget (TAB)   The sum of all budgets allocated to the project or contract. Total allocated budget consists of the performance measurement baseline and all contingency or management reserves. The total allocated budget will reconcile directly to the contract budget base. Any difference will be documented as to quantity and cause.

Undistributed Budget (UB)   Budget applicable to contract effort which has not yet been identified to CWBS elements at or below the lowest level of reporting to the customer. Frequently new effort authorized prior to the planning could be loaded to the PMB or new customer-authorized effort before a price could be negotiated (beyond the near-term detail planning window).

Variance   The value by which any schedule or cost performance varies from a specific plan. Significant variances are those differences between planned and actual performance which require further review, analysis, or action. Appropriate thresholds are established for variance analysis. See Cost Variance, Schedule Variance, and Cost Variance at Completion.

Variance Analysis Report (VAR)   A report describing the nature, cause, impact, and corrective action for variances which exceed agreed-to thresholds.

Variance at Completion   The anticipated difference between total contract or project budget and the management's most likely forecast for cost-at-completion. VAC = BAC - EAC

Variance Threshold   Internal and external tolerances (or thresholds) established by management direction or variance conditions. Variance conditions outside the threshold limits require investigation, analysis, reporting and corrective action.

Work Breakdown Structure (WBS)   A product-oriented, family-tree composed of hardware, software, services, data and facilities which results from system engineering efforts during the acquisition of a defense materiel item, A work breakdown structure displays and defines the product(s) to be developed and/ or produced and relates the elements of work to be accomplished to each other and to the end product.

Work Package (WP)   Detailed short-span jobs, activities, tasks, or material items with an assigned budget and a defined method/technique for earning value. A work package is assigned to a single control account.

7 ACRONYM LIST

AC	Actual Cost
ACWP	Actual Cost of Work Performed
ANSI/EIA	American National Standards Institute/Electronic Industries Association
ANSI/EIA 748 Standard	American National Standards Institute/Electronic Industry Association 748 Standard
ATO	Authorization To Operate
ATP	Authority to Proceed
AUW	Authorized Unpriced Work
BAC	Budget at Completion
BCWP	Budgeted Cost for Work Performed
BCWR	Budgeted Cost for Work Remaining
BCWS	Budgeted Cost for Work Scheduled
BUR	Baseline Update Review
C&A	Certification and Accreditation
CA	Control Account
CAM	Control Account Manager
CAP	Control Account Plan
CBB	Contract Budget Base
CFA	Cognizant Federal Agency
CIO	Chief Information Officer
CLIN	Contract Line Item Number
COTR	Contract Officer Technical Representatives
CPI	Cost Performance Index
CPIC	Capital Planning and Investment Control
CPR	Contract Performance Report
CR	Contingency Reserve
CTC	Contract Target Cost
CTP	Contract Target Price
CV	Cost Variance
DAU	Defense Acquisition University
DCAA	Defense Contract Audit Agency
DCMA	Defense Contract Management Agency
DIRB	Department IT Investment Review Board
DME	Development/Modernization/Enhancement
DOJ	Department of Justice
EAC	Estimate at Completion
E-Gov	Expanded Electronic Government
EOC	Element of Cost
ETC	Estimate to Complete
EV	Earned Value
EVM	Earned Value Management
EVMS	Earned Value Management System

EVM System	Earned Value Management System
FAR	Federal Acquisition Regulation
FTE	Full Time Equivalent
IBR	Integrated Baseline Review
IEAC	Independent Estimate at Completion
IMP	Integrated Master Plan
IMS	Integrated Master Schedule
IPT	Integrated Product Team
IT	Information Technology
LOE	Level of Effort
MPR	Monthly Performance Report
MPS	Master Program Schedule
MR	Management Reserve
NDIA	National Defense Industrial Association
OA	Operational Analysis
OBS	Organizational Breakdown Structure
OCIO	Office of the Chief Information Officer
ODC	Other Direct Cost
OMB	Office of Management and Budget
OTB	Over Target Baseline
OTS	Over Target Schedule
PBB	Project Budget Base
PCO	Procuring Contracting Office
PM	Program Manager
PMA	President's Management Agenda
PMB	Performance Measurement Baseline
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
PMO	Program Management Office
PMP	Project Management Plan
PP	Planning Package
PV	Planned Value
RAM	Responsibility Assignment Matrix
SOW	Statement of Work
SPI	Schedule Performance Index
SPP	Summary Planning Package
SV	Schedule Variance
TAB	Total Allocated Budget
TCPI	To-Complete Performance Index
UB	Undistributed Budget
VAR	Variance Analysis Report
WBS	Work Breakdown Structure
WP	Work Package

8   SUGGESTED REFERENCES

8.1   NDIA GUIDES

National Defense Industrial Association, Program Management Systems Committee has produced three guides referenced throughout this guide and in several OMB memoranda. These guides are listed below and can be found at **http://www.ndia.org** by following the Divisions link to Procurement, Committees and Leadership, Program Management Systems Committee.
- ANSI/EIA-748 Standard for EVM System Intent Guide
- Surveillance Guide
- The Program Manager's Guide to the Integrated Baseline Review Process

8.2   DEFENSE ACQUISITION UNIVERSITY

Federal Acquisition Institute (co-located with the Defense Acquisition University (DAU)) maintains a community of practice at **http://acc.dau.mil/evm**. This site includes tutorials, descriptions and links to tools, additional references and guides, a discussion forum, and will soon add an on-line reference library.

8.3   PROJECT MANAGEMENT INSTITUTE

The Project Management Institute has published two reference documents with specific information pertinent to developing a thorough understanding of the EVM practice. These standards are listed below and can be found through most online bookstores including the PMI Bookstore.
- Program Management Body of Knowledge (PMBOK)
- Practice Standard for Earned Value Management

8.4   GAO COST ESTIMATING AND ASSESSMENT GUIDE

The General Accounting Office report GAO-09-3SP dated March 2009 provided source material for this DOJ EVM Implementation Guide in that it reports best practices for developing and managing capital program costs.

8.5   OCIO DASHBOARD USERS GUIDE

The Office of the Chief Information Officer (OCIO) Dashboard is a Department of Justice (DOJ) database that provides the DOJ CIO, DOJ component CIOs, and project managers with current status information on major and other highly visible information technology (IT) systems in the DOJ IT portfolio. This guide is a valuable tool for learning to report project status data through the OCIO Dashboard.

APPENDIX A   MONTHLY PROJECT STATUS REPORT TEMPLATE

DOJ Component:
Project Name:
Project Description:
Status Description:

FY2010 Earned Value Data (through <Status Date>)						
PV	AC	EV	SV	CV	CPI	SPI

Cumulative Earned Value Data (through <Status Date>)						
PV	AC	EV	SV	CV	CPI	SPI

Current FY BAC	Current FY EAC	Current FY VAC

Cumulative BAC	Cumulative EAC	Cumulative VAC

The monthly earned value data and graph are located immediately after this report.

Cost Variance Analysis Report
Cause of the Cost Variance:
Impact to the Project:
Corrective Action:

Schedule Variance Analysis Report
Cause of the Schedule Variance:
Impact to the Project:
Corrective Action:

Top Project Risks

Risk Rank: 1	**Status Indicator**:
Risk Description:	
Risk Impact:	
Mitigation Strategy:	
Mitigation Accomplishments:	

Risk Rank: 2	**Status Indicator**:
Risk Description:	
Risk Impact:	
Mitigation Strategy:	
Mitigation Accomplishments:	

<Project Name> Project Review Report
Status through <Status Date>

Risk Rank: 3	Status Indicator:
Risk Description:	

Risk Impact:

Mitigation Strategy:

Mitigation Accomplishments:

Risk Rank: 4	Status Indicator:
Risk Description:	

Risk Impact:

Mitigation Strategy:

Mitigation Accomplishments:

Risk Rank: 5	Status Indicator:
Risk Description:	

Risk Impact:

Mitigation Strategy:

Mitigation Accomplishments:

Upcoming Milestones

Milestone Number: 1

Milestone Description:

	Baseline	Revised	Actual
Start Date:			
End Date:			

Milestone Number: 2			
Milestone Description:			
	Baseline	Revised	Actual
Start Date:			
End Date:			

Milestone Number: 3			
Milestone Description:			
	Baseline	Revised	Actual
Start Date:			
End Date:			

Milestone Number: 4			
Milestone Description:			
	Baseline	Revised	Actual
Start Date:			
End Date:			

Milestone Number: 5			
Milestone Description:			
	Baseline	Revised	Actual
Start Date:			
End Date:			

APPENDIX B   DOJ OBJECTIVE EVIDENCE LIST

EVIDENTIARY DOCUMENT	DOCUMENT DESCRIPTION AND ATTRIBUTES	ALTERNATE EVIDENTIARY DOCUMENT	748 GUIDELINE ADDRESSED
WBS	The WBS decomposes all in-scope project activity into distinct elements of manageable work. The WBS is a hierarchical structure with summary only levels collecting the lowest level work elements.		2.1a
WBS Dictionary	The WBS dictionary provides a clear definition of all work elements in the WBS.		2.1a
OBS or Organization Chart	The OBS identifies each organizational entity with responsibility for a subset of the WBS's work elements. In its simplest form, the OBS is an organization chart..		2.1b
	Including major contractors		2.1b
	Identifying responsible authority for managing indirect costs.		2.1d
Integrated Project Schedule	The integrated project schedule is a living plan that establishes the performance measurement baseline and assigns organizational responsibility for the performance of project work. As the project moves from planning to execution, the schedule will record actual costs assigned to the project, as well as activity status, in a manner consistent with the WBS. It is the source of performance metrics reported in the monthly project status reports. It is revised to document work planning adjustments implemented to keep the project under control and aimed directly at meeting the project objectives.		
	Project activity structured by the WBS		2.1c, 2.2a, 2.2c
	Containing schedule and time phased cost data for all WBS elements.	Schedule and time phased costs in a ledger.	2.1c, 2.2c

EVIDENTIARY DOCUMENT	DOCUMENT DESCRIPTION AND ATTRIBUTES	ALTERNATE EVIDENTIARY DOCUMENT	748 GUIDELINE ADDRESSED
	Allows for the accumulation of costs and time in summary WBS elements so their budgets equal the sum of their subordinate WBS level budgets.	Ledger that provides for the roll up of cost data at summary WBS levels so their budgets equal the sum of their subordinate work and planning package budgets.	2.1c, 2.2c, 2.2f
	Containing resource assignments as part of the work plan.	Work Packages with resource assignments.	2.1c
	Assigns organizational responsibility to the WBS elements.		2.1e
	Capable of summarizing measured performance by WBS or OBS as needed.		2.1e
	Defined interdependences between project schedule activities (i.e., predecessors and successors) resulting in sequenced work.		2.2a
	Containing work package level WBS elements that are sufficiently finite to allow timely measurement of progress and possess objective completion criteria to enable performance measurement.	Work packages that are sufficiently finite to allow timely measurement of progress and possess objective completion criteria to enable performance measurement.	2.2b
	Baselines set for schedule and cost data that reconcile to the internal or external customer target goals and cost.		2.2c, 2.2d
	Containing work package level WBS elements for defined work and higher level WBS elements with estimates for currently undefined work.	Work packages for defined work and planning packages with estimates for currently undefined work.	2.2c, 2.2d
	With budgets distinctly identifying the elements of cost (i.e., labor, material, travel, ODC).		2.2d

EVIDENTIARY DOCUMENT	DOCUMENT DESCRIPTION AND ATTRIBUTES	ALTERNATE EVIDENTIARY DOCUMENT	748 GUIDELINE ADDRESSED
	Containing work package level WBS elements with cost budgets set in hours, dollars, or both	Work packages with schedule and cost budgets set in hours, dollars, or both; and for undefined work, planning packages with schedule and cost estimates.	2.2e
	Containing level-of-effort WBS elements with schedule and cost budgets to account for all non-performance related project activity	Work packages containing level-of-effort WBS elements with schedule and cost budgets to account for all non-performance related project activity	2.2g
	WBS element for management reserve and undistributed budget with notes tracking changes to these budgets	Ledger account tracking end of month value for contingency or management reserve and undistributed budget and a log tracking changes to these budgets	2.2i
	The project level WBS element budget is equal to the project target cost goal.	Ledger reconciling the sum of all internal project budgets, management reserve, and undistributed budget with the project's target cost goal.	2.2j
	Record actual direct costs in accordance with the WBS structure and reconcile the actual costs with organizations accounting system.		2.3a, 2.3b
	Ensure that actual direct costs are only allocated to one summary WBS element per WBS level.		2.3b
	Record actual direct costs in accordance with the OBS structure and ensure that actual direct costs are only allocated to one summary OBS element per OBS level.		2.3c

EVIDENTIARY DOCUMENT	DOCUMENT DESCRIPTION AND ATTRIBUTES	ALTERNATE EVIDENTIARY DOCUMENT	748 GUIDELINE ADDRESSED
	Record all indirect actual costs allocated to the project.		2.3d
	Incorporating monthly updates with actual schedule and cost data and adjusted work package activity plans.		2.4b
	Incorporating monthly updates with actual indirect schedule and cost data and adjusted work package activity plans.		2.4c
	With revised schedule and cost forecasts.		2.4d
	If a project includes activity to manufacture items (N/A to most DOJ projects), as opposed to simply purchasing items, it may be more appropriate to aggregate these costs into unit or lot costs rather than itemizing the item's elements of cost. If this approach is used, the accounting system used should be capable of allocating these costs on a project by project basis.		2.3e
	Material elements of cost typically comprise a small portion of the overall budget for most DOJ projects. If material forms a significant portion of the project budget, the following should be evaluated. i) Demonstrate that project actual direct material costs are recorded in accordance with the WBS structure, down to at least the control account level. ii) Demonstrate that performance credit is recorded for material in a manner consistent with its use. iii) Demonstrate that all material purchased for the project is accounted for in the system.		2.3f
	Records both current and previous schedule and cost baselines as well as notes explaining the baseline changes.	Archive of previous schedule and cost baselines along with baseline change control logs.	2.5e
Indirect Cost Management Procedure	Documented procedure or verbal description of approach to managing indirect costs and allocating indirect costs to projects. (Must be documented prior to follow-up surveillance review.)		2.2h, 2.2i

EVIDENTIARY DOCUMENT	DOCUMENT DESCRIPTION AND ATTRIBUTES	ALTERNATE EVIDENTIARY DOCUMENT	748 GUIDELINE ADDRESSED
Monthly Project Status Report	Through the presentation of earned value data and analysis, this report will provide the stakeholders with indications the project's status as it relates to the performance measurement baseline and it will provide projections of future project performance. This report will identify schedule, cost, and completion variances which exceed a pre-defined threshold. It should identify the root cause of the variances, their impacts, and suggested corrective actions. Progress should be reported on current corrective action plan activities. Earned value based Estimates At Complete (EAC) should be presented and reconciled to the current schedule, budgets, and funding limits.		
	Identifying project variances (SV, CV, and VAC). For any variance greater than 10%, identify the root cause, impacts, and corrective actions.		2.4a
	With variance reporting and analysis (plan vs actual for schedule and cost)		2.4b
	With variance reporting and analysis for indirect costs		2.4c
	With variance reporting and analysis to level required by OCIO dashboard or other project requirement.		2.4d
	With progress reporting on corrective action plan activities		2.4e
	describing the basis of estimate for plan revisions		2.4e
	Describing revisions to be incorporated in the project risk database.		2.4e
	Identifying the current EAC figures as revised by the earned value analysis.		2.4f
	Reconciling the current earned value based EAC projection to the revised schedule and time phased budget.		2.4f
	Reconciling the current earned value based EAC projection to the project funding limits.		2.4f

EVIDENTIARY DOCUMENT	DOCUMENT DESCRIPTION AND ATTRIBUTES	ALTERNATE EVIDENTIARY DOCUMENT	748 GUIDELINE ADDRESSED
	Communicating significantly revised EAC changes to the stakeholders.		2.4f
Change Management Procedure	The change management procedure defines how the project management team will control the project scope, period of performance and budget to prevent unauthorized changes. Procedures are provided for tracking and implementing authorized changes to the schedule and cost baselines. These procedures should also identify how actual cost and earned value data are controlled as well as the circumstances under which retroactive changes will be allowed, such as for error correction or routine accounting adjustments.		
	Demonstrate that approved changes to the project's scope (SOW, Requirements Documents) period of performance or funding are tracked and are also reflected in the project schedule and cost baselines.		2.5a
	Demonstrate that cost baselines are controlled and are not changed unless authorized.		2.5b
	Demonstrate that changes to previously reported actual cost or earned value data are controlled, documented and only occur for error correction, routine accounting adjustments, or as part of a management directed change.		2.5c
	Demonstrate that budget changes outside of the approved processes are prevented.		2.5d

APPENDIX C FAR REFERENCES ON EVM

PART 2 – DEFINITIONS OF WORDS AND TERMS

2.101   Definitions.

(b) If a word or term that is defined in this section is defined differently in another part, subpart, or section of this regulation (48 CFR Chapter 1), the definition in—

    (1) This section includes a cross-reference to the other definitions; and

    (2) That part, subpart, or section applies to the word or term when used in that part, subpart, or section.

"Earned value management system" means a project management tool that effectively integrates the project scope of work with cost, schedule and performance elements for optimum project planning and control. The qualities and operating characteristics of an earned value management system are described in American National Standards Institute /Electronics Industries Alliance (ANSI/EIA) Standard-748, Earned Value Management Systems. (See OMB Circular A-11, Part 7.)

PART 7 – ACQUISITION PLANS

7.105   Contents of written acquisition plans.

(b) Plan of action—

(10) *Management information requirements*. Discuss, as appropriate, what management system will be used by the Government to monitor the contractor's effort. If an Earned Value Management System is to be used, discuss the methodology the Government will employ to analyze and use the earned value data to assess and monitor contract performance. In addition, discuss how the offeror's/contractor's EVMS will be verified for compliance with the American National Standards Institute/Electronics Industries Alliance (ANSI/EIA) Standard-748, Earned Value Management Systems, and the timing and conduct of integrated baseline reviews (whether prior to or post award). (See 34.202.)

PART 34 – MAJOR SYSTEM ACQUISITION

34.000 Scope of part.

This part describes acquisition policies and procedures for use in acquiring major systems consistent with OMB Circular No. A-109; and the use of an Earned Value Management System in acquisitions designated as major acquisitions consistent with OMB Circular A-11, Part 7.

34.005-2 Mission-oriented solicitation.

 (b) The contracting officer shall send the final solicitation to all prospective offerors. It shall—

    (6) Require the use of an Earned Value Management System that complies with the guidelines of ANSI/EIA Standard-748 (current version at time of solicitation). See 34.201 for earned value management systems and reporting requirements.

Subpart 34.2—Earned Value Management System

34.201 Policy.

(a) An Earned Value Management System (EVMS) is required for major acquisitions for development, in accordance with OMB Circular A-11. The Government may also require an EVMS for other acquisitions, in accordance with agency procedures.

(b) If the offeror proposes to use a system that has not been determined to be in compliance with the American National Standards Institute /Electronics Industries Alliance (ANSI/EIA) Standard-748, Earned Value Management Systems, the offeror shall submit a comprehensive plan for compliance with these EVMS standards. Offerors shall not be eliminated from consideration for contract award because they do not have an EVMS that complies with these standards.

(c) As a minimum, contracting officers shall require contractors to submit EVMS monthly reports for those contracts for which an EVMS applies.

(d) EVMS requirements will be applied to subcontractors using the same rules as applied to the prime contractor.

(e) When an offeror is required to provide an EVMS plan as part of its proposal, the contracting officer will determine the adequacy of the proposed EVMS plan prior to contract award.

34.202 Integrated Baseline Reviews.

(a) When an EVMS is required, the Government will conduct an Integrated Baseline Review (IBR).

(b) The purpose of the IBR is to verify the technical content and the realism of the related performance budgets, resources, and schedules. It should provide a mutual understanding of the inherent risks in offerors'/ contractors' performance plans and the underlying management control systems, and it should formulate a plan to handle these risks.

(c) The IBR is a joint assessment by the offeror or contractor, and the Government, of the—

(1) Ability of the project's technical plan to achieve the objectives of the scope of work;

(2) Adequacy of the time allocated for performing the defined tasks to successfully achieve the project schedule objectives;

(3) Ability of the Performance Measurement Baseline (PMB) to successfully execute the project and attain cost objectives, recognizing the relationship between budget resources, funding, schedule, and scope of work;

(4) Availability of personnel, facilities, and equipment when required, to perform the defined tasks needed to execute the program successfully; and

(5) The degree to which the management process provides effective and integrated technical/schedule/cost planning and baseline control.

(d) The timing and conduct of the IBR shall be in accordance with agency procedures. If a pre-award IBR will be conducted, the solicitation must include the procedures for conducting the IBR and address whether offerors will be reimbursed for the associated costs. If permitted, reimbursement of offerors' pre-award IBR costs is governed by the provisions of FAR Part 31.

34.203 Solicitation provisions and contract clause.

(a) The contracting officer shall insert a provision that is substantially the same as the provision at FAR 52.234-2, Notice of Earned Value Management System-Pre-Award IBR, in solicitations for contracts that require the contractor to use an Earned Value Management System (EVMS) and for which the Government requires an Integrated Baseline Review (IBR) prior to award.

(b) The contracting officer shall insert a provision that is substantially the same as the provision at 52.234-3, Notice of Earned Value Management System-Post Award IBR, in solicitations for contracts that require the contractor to use an Earned Value Management System (EVMS) and for which the Government requires an Integrated Baseline Review (IBR) after contract award.

(c) The contracting officer shall insert a clause that is substantially the same as the clause at FAR 52.234-4, Earned Value Management System, in solicitations and contracts that require a contractor to use an EVMS.

PART 52 – SOLICITATION PROVISIONS AND CONTRACT CLAUSES

52.234-2 Notice of Earned Value Management System - Pre-Award IBR.

As prescribed in 34.203(a) use the following provision:

(a) The offeror shall provide documentation that the Cognizant Federal Agency has determined that the proposed earned value management system (EVMS) complies with the EVMS guidelines in ANSI/EIA Standard - 748 (current version at time of solicitation).

(b) If the offeror proposes to use a system that has not been determined to be in compliance with the requirements of paragraph (a) of this provision, the offeror shall submit a comprehensive plan for compliance with the EVMS guidelines.

　　(1) The plan shall—

　　　　(i) Describe the EVMS the offeror intends to use in performance of the contracts;

　　　　(ii) Distinguish between the offeror's existing management system and modifications proposed to meet the guidelines;

　　　　(iii) Describe the management system and its application in terms of the EVMS guidelines;

　　　　(iv) Describe the proposed procedure for administration of the guidelines, as applied to subcontractors; and

　　　　(v) Provide documentation describing the process and results of any third-party or self-evaluation of the system's compliance with the EVMS guidelines.

　　(2) The offeror shall provide information and assistance as required by the Contracting Officer to support review of the plan.

　　(3) The Government will review and approve the offeror's plan for an EVMS before contract award.

　　(4) The offeror's EVMS plan must provide milestones that indicate when the offeror anticipates that the EVM system will be compliant with the ANSI/EIA Standard - 748 guidelines.

(c) Offerors shall identify the major subcontractors, or major subcontracted effort if major subcontractors have not been selected subject to the guidelines. The prime Contractor and the Government shall agree to subcontractors selected for application of the EVMS guidelines.

(d) The Government will conduct an Integrated Baseline Review (IBR), as designated by the agency, prior to contract award. The objective of the IBR is for the Government and the Contractor to jointly assess technical areas, such as the Contractor's planning, to ensure complete coverage of the contract requirements, logical scheduling of the work activities, adequate resources, methodologies for earned value (budgeted cost for work performed (BCWP)), and identification of inherent risks.

(End of provision)

52.234-3 Notice of Earned Value Management System - Post Award IBR.

　　As prescribed in 34.203(b) use the following provision:

(a) The offeror shall provide documentation that the Cognizant Federal Agency has determined that the proposed earned value management system (EVMS) complies with the EVMS guidelines in ANSI/EIA Standard - 748 (current version at time of solicitation).

(b) If the offeror proposes to use a system that has not been determined to be in compliance with the requirements of paragraph (a) of this provision, the offeror shall submit a comprehensive plan for compliance with the EVMS guidelines.

　　(1) The plan shall—

　　　　(i) Describe the EVMS the offeror intends to use in performance of the contracts;

　　　　(ii) Distinguish between the offeror's existing management system and modifications proposed to meet the guidelines;

　　　　(iii) Describe the management system and its application in terms of the EVMS guidelines;

　　　　(iv) Describe the proposed procedure for administration of the guidelines, as applied to subcontractors; and

(v) Provide documentation describing the process and results of any third-party or self-evaluation of the system's compliance with the EVMS guidelines.

(2) The offeror shall provide information and assistance as required by the Contracting Officer to support review of the plan.

(3) The Government will review and approve the offeror's plan for an EVMS before contract award.

(4) The offeror's EVMS plan must provide milestones that indicate when the offeror anticipates that the EVM system will be compliant with the ANSI/EIA Standard -748 guidelines.

(c) Offerors shall identify the major subcontractors, or major subcontracted effort if major subcontractors have not been selected, planned for application of the guidelines. The prime Contractor and the Government shall agree to subcontractors selected for application of the EVMS guidelines.

(End of provision)

52.234-4 Earned Value Management System.

As prescribed in 34.203(c), insert the following clause:

EARNED VALUE MANAGEMENT SYSTEM (JULY 2006)

(a) The Contractor shall use an earned value management system (EVMS) that has been determined by the Cognizant Federal Agency (CFA) to be compliant with the guidelines in ANSI/EIA Standard - 748 (current version at the time of award) to manage this contract. If the Contractor's current EVMS has not been determined compliant at the time of award, see paragraph (b) of this clause. The Contractor shall submit reports in accordance with the requirements of this contract.

(b) If, at the time of award, the Contractor's EVM System has not been determined by the CFA as complying with EVMS guidelines or the Contractor does not have an existing cost/schedule control system that is compliant with the guidelines in ANSI/EIA Standard - 748 (current version at time of award), the Contractor shall—

(1) Apply the current system to the contract; and

(2) Take necessary actions to meet the milestones in the Contractor's EVMS plan approved by the Contracting Officer.

(c) The Government will conduct an Integrated Baseline Review (IBR). If a pre-award IBR has not been conducted, a post award IBR shall be conducted as early as practicable after contract award.

(d) The Contracting Officer may require an IBR at—

(1) Exercise of significant options; or

(2) Incorporation of major modifications.

(e) Unless a waiver is granted by the CFA, Contractor proposed EVMS changes require approval of the CFA prior to implementation. The CFA will advise the Contractor of the acceptability of such changes within 30 calendar days after receipt of the notice of proposed changes from the Contractor. If the advance approval requirements are waived by the CFA, the Contractor shall disclose EVMS changes to the CFA at least 14 calendar days prior to the effective date of implementation.

(f) The Contractor shall provide access to all pertinent records and data requested by the Contracting Officer or a duly authorized representative as necessary to permit Government surveillance to ensure that the EVMS conforms, and continues to conform, with the performance criteria referenced in paragraph (a) of this clause.

(g) The Contractor shall require the subcontractors specified below to comply with the requirements of this clause: [*Insert list of applicable subcontractors.*]

_____

_____

(End of clause)

APPENDIX D   COMMON EARNED VALUE METHODS

Selection of an earned value method for a work package should minimize the use of methods that tend to be subjective and maximize the use of methods that tend to match the time phased resource planning of a work package.

Method 1: <u>Unit or Equivalent Units</u>. Units involve a count of physical output which can be number of units or equivalent units completed, received, assembled, shipped, etc. Each unit has a planned unit value or an equivalent unit value and the earned value is claimed when the unit or equivalent unit is completed or received or assembled or shipped. The total unit or equivalent unit count times the unit or equivalent unit value should match the time phased resource plan.

Method 2: <u>Weighted or Interim Milestones</u>. The work package has a start and completion event with a series of interim milestones. Each milestone should represent a physically auditable accomplishment, clear in completion criteria, and each milestone weighted with the resource value (in hours and/or dollars) near the scheduled milestone occurrence. As each milestone actually occurs, the weighted value is claimed as earned value. The use of the weighted milestone method is reasonably accurate if at least one milestone per month can be planned in the schedule.

Method 3: <u>Weighted Milestone with % Complete</u>. Useful in engineering environment for work packages extending more than three months without one milestone per month. Same as Method 3 (Weighted Milestone) except that the control account manager can subjectively assess percent complete a specific milestone up to 80-90% of the milestone planned value and 100% on milestone completion. Subjective assessments should have some logical basis of rationale.

Method 4: <u>Fixed Formula (0/100; 25/75; 50/50; 75/25; etc.)</u>. Start and End dates of a work package have a fixed percentage value which sum to 100%. The time phased planned value must be consistent with the assigned fixed formula start and end percentages to be earned. Upon actual start or actual end of the work package, the assigned percentage is multiplied by the total resource planned value to claim the appropriate earned value. This method should not be used on work packages extending beyond 2 accounting periods.

Method 5: <u>Estimated Percent Complete.</u> Percent complete of resourced work that is based upon the expert judgment of the control account manager or work package manager. The percent complete should have a logical basis supporting the manager's judgment.

Method 6: <u>Apportioned.</u> Some work packages contain resources and tasks which directly relate to other work packages using Methods 1-5. These work packages a planned as a factor of the related work packages and earn value equal to the related work package earned value by the same factor. Example could be quality inspection as factor of the assembly unit completion.

Method 7: <u>Level of Effort.</u> If the work package effort has no meaningful outputs for measurement or logical means for assessing earned value, then Level of Effort is appropriate. Level of Effort requires that current period and cumulative earned value is equal to the current period planned value and the cumulative planned value (always a zero

schedule variance). Examples of this type of effort are program management, production engineering sustaining support, program control, support functions existing only when called upon, etc. The amount of Level of Effort work packages mixed in the same cost account as other measured work packages should be kept to a practical minimum by separating the Level of Effort work packages into another cost account. As a general guide, Level of Effort should be less than 30% of the total control account budget that contains work packages with other measurable methods.

APPENDIX E   BASELINE VALIDATION

1.0 INTRODUCTION

The program baseline validation is accomplished by the DOJ Program Management Office leading an Integrated Baseline Review (IBR) for establishing the initial baseline or Baseline Update Review (BUR) for any subsequent re-baselining at the principle contractor(s) facility. The IBR and BUR is an evaluation of the Performance Measurement Baseline (PMB) to determine whether all program requirements have been addressed, risks have been identified, mitigation plans are in place, and available and planned resources are sufficient to complete the work. The IBR or BUR goal is to verify that the technical baseline's budget and schedule are achievable, fundamental assumptions and resource constraints are understood, and adequate for performing the work. Key benefits to be gained are that it:

- Lays a solid foundation for successfully executing the program
- Gives the program manager and contractor mutual understanding of program risks
- Provides the program manager with what to expect at the outset of the program
- Identifies planning errors or omissions which can be corrected early in the program
- Enables identification of resources for specific challenges and risks

Conducting an IBR or BUR ensures that the PMB provides reliable cost and schedule data for managing the program and that it projects accurate estimated costs at completion. The Office of Management and Budget (OMB) has endorsed the IBR as a critical process for risk management on major investments and requires agencies to conduct IBRs for all contracts that require EVM. The IBR and BUR are the crucial links between cost estimating and EVM because it verifies that the cost estimate has been converted into an executable program plan. While the cost estimate provides an expectation of what could be, based on a technical description and assumptions, the baseline converts those assumptions into a specific plan for achieving the desired outcome. Once the baseline is established, the IBR will assess whether its estimates are reasonable and risks have been clearly identified. OMB directs agencies to conduct IBRs in accordance with the National Defense Industrial Association's (NDIA) *The Program Manager's Guide to the Integrated Baseline Review Process*. This NDIA guide outlines four activities to be jointly executed by the program manager and contractor staff:

1. PMB development,
2. IBR preparation,
3. IBR execution, and
4. Management processes.

2.0 PMB DEVELOPMENT

As the principal element of EVM, the PMB represents the time phased budget plan against which program performance is measured for major authorized portions of the program. This plan comes from the total roll-up of work that has been planned in detail through control accounts, summary planning packages, and work packages with their schedules and budgets. PMB development examines whether the control accounts encompass all contract requirements and are reasonable, given the risks. To accomplish this, the government and contractor management teams meet to understand whether the program plan reflects reality:

- Have all tasks in the statement of work been accounted for in the baseline?
- Are adequate staff and materials available to complete the work?
- Have all tasks been integrated, using a well-defined schedule?

Since it is not always feasible for the IBR team to review every control account, the team often samples control accounts to review. To ensure a comprehensive and value-added review, teams can consider:

- Medium to high technical risk control accounts

- Moderate to high dollar value control accounts
- Critical path activities
- Elements identified in the program risk management plan
- Significant material subcontracts and non-firm-fixed-price subcontracts

The IBR team should ask the contractor for a list of all performance measurement budgets and any management reserve budgets in the contract. The contractor can typically provide a matrix of all distributed budgets to control accounts, their managers, and approved budget amounts. Often called a dollarized Responsibility Assignment Matrix (RAM), it is a valuable tool in selecting control accounts that represent the most risk. At the end of the IBR or BUR, the team's findings inform the program manager of risks to achieve the cost and schedule goals of the PMB and should assess the contractor's ability to provide useful information program performance reports at least monthly.

3.0 IBR/BUR PREPARATION

An IBR or BUR is most effective if the focus is on areas of greatest risk to the program. Government and contractor program managers should try for mutual understanding of risks and formulate a plan to mitigate and track them through the EVM management process. In addition, developing cooperation promotes communication and increases the chance for effectively managing and containing program risks. Depending on the program, the time and effort in preparing for the IBR or BUR varies. Specific activities include:

- Identifying program scope to review, including appropriate control accounts, and associated documentation needs;
- Identifying the size, responsibilities, and experience of the IBR team;
- Program management planning, such as providing training, obtaining required technical expertise, and scheduling review dates;
- Classifying risks by severity and developing risk evaluation criteria; and
- Developing an approach for conveying and summarizing findings.

Government and contractor program managers should develop a plan for conducting the review by first defining the areas of the program scope the team will review. To do this, they should be familiar with the contract statement of work and request the appropriate documents, including the life cycle cost estimates and program risk assessment, to decide which areas have the most risk. They should also have a clear understanding of the management processes that will be used to support the program, including how subcontractors will be managed.

Each IBR/BUR requires participation from specific program, technical, and schedule experts. Staff from a variety of disciplines—program management, systems engineering, software engineering, manufacturing, integration and testing, installation— should assist in the review. In addition, experts in functional areas like cost estimating, schedule analysis, EVM, and contracting should also be members of the team. In particular, Government and contractor EVM specialists and contract management personnel should be active participants. The IBR/BUR team may at times also include subcontractor personnel. The team's size should be driven by the program's complexity and the risk associated with achieving its objectives. Program-level IBR/BUR teams should include participants from other stakeholder organizations, such as the program's business unit, the agency's EVM staff, and others as appropriate. Team members must have appropriate training before the IBR/BUR is conducted to ensure that they can correctly identify and assess program risks. Team members should be trained so they understand the cost, schedule, and technical aspects of the PMB and the processes that will be used to manage them. As stated before, identifying potential program risk is the main goal of an IBR/BUR. Risks are generally categorized as

cost, management process, resource, schedule, and technical (see Table 1: IBR/BUR Risk Categories and Definition).

Table 1: IBR/BUR Risk Categories and Definition

- <u>Cost Risk</u> - Evaluates whether the program can succeed within budget, resource, and schedule constraints as depicted in the PMB. Cost risk is driven by the quality and reasonableness of the cost and schedule estimates, the accuracy of the assumptions, use of historical data, and whether the baseline covers all of the remaining efforts in the statement of work.

- <u>Management Process Risk</u> - Evaluates how well management processes provide effective and integrated technical, schedule, cost planning and baseline change control (all in compliance with EVM Industry standards in ANSI/EIA-748). Management process is driven by the need for early view into risks, which can be hampered by inability to establish and maintain valid, accurate, and timely performance data, including data from subcontractors.

- <u>Resource Risk</u> - Represents risk associated with the availability of personnel, facilities, and equipment necessary to perform program-specific tasks. Includes staff lacking because of other company priorities, unexpected downtime that precludes or limits the use of specific equipment or facilities when needed, etc.

- <u>Schedule Risk</u> - Addresses whether the time allocated to lower-level tasks is sufficient to meet the program schedule. Schedule risk is driven by the interdependency of scheduled activities and the ability to identify and maintain the critical path.

- <u>Technical Risk</u> - Represents the reasonableness of the technical plan for achieving the program's objectives. Deals with issues such as the availability of technology, capability of the software development team, technology, and design maturity.

Program managers should also outline the criteria for evaluating risks in Table 1 and should develop a method for tracking them within the risk management process. In addition, they should monitor the progress of all risks identified in the IBR/BUR and develop action plans for resolving them.

4.0 IBR EXECUTION

Because an IBR/BUR provides a mutual understanding of the PMB and its associated risk, identifying potential problems early allows for developing a plan for resolving and mitigating them. Thus, the IBR should be initiated as early as possible—before award, when appropriate, and no later than 6 months after. To be most effective for IBR or BUR, maturity indicators should be assessed to ensure that a value-added assessment of the PMB can be accomplished:

1. Work definition
   - Work Breakdown Structure (WBS) should be developed;
   - specifications should flow down to subcontractors; and
   - internal statement of work for work package definitions should be defined.

2. Integrated schedule
   - lowest level and master level should be vertically integrated;
   - tasks should be horizontally integrated;
   - product handoffs should be identified; and
   - subcontractor schedules should be integrated with the prime master schedule.

3. Resources
   - labor and material resources should be fully planned and scheduled;
   - constrained resources should be identified or rescheduled;

- staffing resources should be leveled off;
- subcontractor baselines should be integrated with the prime baseline;
- schedule and budget baselines should be integrated;
- work package earned value measures should be defined;
- the baseline should be validated at the lowest levels and approved by management.

The absence of maturity indicators may be an indication of risk. An IBR/BUR should not be postponed indefinitely; it should begin, with a small team, as soon as possible in order to help clarify plans for program execution. After it has been determined that the program is defined at an appropriate level, interviewing control account managers is the next key IBR/BUR objective. Interviews should focus on areas of significant risk and management processes that may affect the ability to monitor risks. Discussions should take place among a small group of people and should address how the baseline was developed and the supporting documentation. If the contractor has done a reasonable job of developing an integrated baseline, preparing for the IBR/BUR should require minimal time.

In executing the IBR or BUR, the team assesses the adequacy, realism, and risks of the baseline by examining the following criteria to successfully validate a project baseline:

- The technical scope of authorized work is fully included, e.g., rework and retest allowances
- Key schedule milestones are identified
- Supporting schedules reflect a logical flow to accomplish tasks
- The duration of each task is realistic and the network schedule logic is accurate
- The program's critical path is identified
- Resources—budgets, facilities, personnel, skills—are available and sufficient for accomplishing tasks
- Tasks are planned so as to be objectively measured for technical progress
- The rationale supporting PMB lower-level control accounts is reasonable
- Managers have appropriately implemented required management processes

Figure 8 is a guide for use when interviewing control account managers. The purpose of the template is to help interviewers cover all aspects of the IBR or BUR objectives consistently.

Baseline discussion starter					
Step 1	Introductions				5 minutes
Step 2	General overview of control accounts and work content				5 minutes
Step 3	Briefly describe control account or work packages & performance to date				5 minutes
No.	Title	BAC	% Complete	EV Method	Discuss
Step 4	Evaluate baseline for each work package				90 minutes

Work Scope	Schedule	Budget	EV Method
All work included? Clear work description? Risk mitigation? Technical risk?	Realistic? Complete? Subcontractors? Task durations? Network logic? Handoffs? Vertical and horizontal integration? Critical Path? Concurrence? Developing schedule variance? Completion variance from schedule?	Basis of Estimate? Management challenges? Realistic budget? (focus on hours) Developing cost variance? Variance at complete? Budget risk?	Objective measures of work? Level of effort minimized? Subcontractor performance? Milestones defined? Method for calculating percentage complete?
Documents to Review Statement of work, contractor WBS dictionary, work package descriptions, risk plans	**Documents to Review** Integrated Master Schedule, work package schedules, staffing plans	**Documents to Review** Control account plan, basis of estimate, variance reports, purchase request or order for material	**Documents to Review** Control account plan, back-up worksheets for EV, subcontractor reports

Figure 8: Appendix E - IBR/BUR Control Account Manager Discussion Template

After completing the IBR or BUR, the program managers assess whether they have achieved its purpose—that is, they report on their understanding of the PMB and their plan of action for handling risks. They should develop a closure plan that assigns staff responsibility for each risk identified in the IBR/BUR. Significant risks should then be included in the program's risk management plan, while lower-level risks are monitored by responsible individuals. An overall program risk summary should be developed that lists each risk by category and severity in order to determine a final risk rating for the program. This risk assessment should be presented to senior management—government and contractors—to promote awareness. The IBR/BUR team should document how earned value will be assessed and whether the measurements are objective and reasonable. It should discuss whether management reserve is adequate to cover new risks identified in the IBR/BUR. Finally, if the team found deficiencies in the EVM system, it should record them in a corrective action request and ask the EVM specialist to monitor their status.

Although a formal IBR/BUR report is not usually required, a memorandum for the record describing the findings with all backup documentation should be retained in the official program management files. And, while the IBR/BUR is not marked with an official pass or fail, a determination should be made about whether the PMB is reliable and accurate for measuring true performance.

5.0 MANAGEMENT PROCESSES

When the IBR or BUR is complete, the focus should be on the ongoing ability of management processes to reveal actual program performance and detect program risks. The IBR/BUR risk matrix and risk management plan should give management a better understanding of risks facing the program, allowing them to manage and control cost and schedule impacts. The following management process should continue after the IBR/BUR is finished:

- The baseline maintenance process should continue to ensure that the PMB reflects a current depiction of the plan to complete remaining work and follows a disciplined process for incorporating changes.

- The risk management process should continue to document and classify risks according to the probability they will occur, their consequences, and their handling.

- Other typical business processes should continue to support the management of the program, e.g., scheduling, developing estimates to complete, and EVM analysis so that risks may be monitored and detected throughout the life of the program.

APPENDIX F   RE-BASELINING PROCESS

1. PURPOSE OF RE-BASELINING

The primary purpose of a re-baselining is to improve or re-assert managerial control over the execution of the remaining work on a major development/modernization/ enhancement (DME) project using earned value reporting. A project manager may conclude that the current baseline is no longer adequate as a performance management or cost and schedule variance analysis tool. A re-baselining should therefore be considered where improved variance analysis and control of the project is needed. Re-baselining is not to be undertaken lightly since it requires extensive effort to execute properly and frequently all cost and schedule trending information will be lost.

Performance management and cost and schedule baselines are always a collaborative process between DOJ CIO and the DOJ Program Manager (PM) and/or the PM and the development contractor. When a development contractor or PM deems it necessary to implement re-baselining, it should notify its customer early in the process. The success of the re-baselining process is predicated on early customer notification.

In addition, there are two fundamental issues that should be considered independently prior to re-baselining: (1) The development contractor's performance-to-date that led to the need for a re-baselining, and (2) The contractor or PM system discipline to maintain baseline integrity in compliance with the intent of the ANSI/EIA-748 standard.

The DOJ CIO approval to re-baseline is focused on improving project cost/schedule visibility and management control over the execution of the remaining project work. The focus during a re-baseline is ensuring that the estimated cost of work to complete is valid, remaining risks are identified and tracked, management reserve is identified, and the new baseline is adequate and meaningful for future performance measurement. A re-baselining should be rare — only once in a project's development phase. If a program is experiencing frequent re-baselining, it may be that the scope is not well understood or simply that program management is unable to develop realistic estimates. Moreover, a project that frequently changes its baseline can appear to be trying to "get well" by managing the EVM data to avoid reporting negative aspects of the project's performance.

2. THE RE-BASELINING PROCESS

2.1 Introduction

The re-baselining process involves multiple steps and processes that should generally be followed in a certain order. The re-baseline process defined in this section involves a six step process where each step is completed essentially in a serial fashion. However, some of these steps can overlap each other or be performed simultaneously. Each step in the implementation process assumes early involvement and frequent interaction with the customer.

2.2 Develop Re-baselining Approach

There are certain factors that should be kept in mind when developing the approach for a re-baselining:

- What circumstances led to this need for a re-baselining (e.g., cost/schedule variances, scope changes, etc.)? Are they clearly understood such that the re-baselining process will adequately address them?

- Is the existing schedule still realistic or is a contract change for deliveries or Over

Target Schedule (OTS) likely? If an OTS is likely, what is the process?

- Is the existing estimate to complete sufficiently realistic or does it need to be updated? When was the last comprehensive, "bottoms-up" or "grass-roots" ETC performed?

- Will the cost and schedule variances be retained or is some form of adjustment required? If adjustments are needed, how should they be done?

- How will an adequate management reserve be established?

- Can/should major subcontractor efforts need to be repriced and/or rescheduled?

- Have any system discipline issues that may have contributed to the situation been resolved?

2.3 Participant Re-Baseline Responsibilities

2.3.1 Participants Involved

Teamwork between the DOJ PMO and development contractor project offices during this transition is best for long-term project results. The development contractor needs to keep the DOJ PMO informed of progress during the re-baselining process. Both DOJ PMO and development contractor need to be prepared for additional visibility and scrutiny once the new baseline is implemented. Realism and open communication are imperative. The development contractor and/or DOJ PMO must notify its customer early in the process of the need to implement a re-baselining. The DOJ CIO shall be responsible for approving the request to re-baseline as well as the final re-baseline approval.

2.3.2 Development Contractor

The primary responsibility for ensuring that a meaningful performance measurement baseline is in place belongs to the development contractor. Every control account manager, with help from the business office and project manager is charged with developing executable work plans. These plans become the basis for the new baseline. Thus, the project manager and supporting business office staff must have open lines of communication and a clear review process to ensure the baseline is reasonably accurate and reflects known project risks, cost reduction opportunities, and challenges.

2.3.3 DOJ PMO

The DOJ PMO is encouraged to develop a team approach and seek support from DOJ OCIO earned value specialists, business and financial managers, technical managers, and the contract administration office. The DOJ PMO project team should give priority status to its support for and, if invited, participation in the re-baselining process so as not to impede progress.

The DOJ PMO project manager and business office will ultimately be held accountable for the significant changes a re-baselining can effect. Along with being an active participant in the process, the DOJ PMO team must ensure that the ramifications of implementing a re-baselining on the project are considered and managed. In all cases, because past cost or schedule variances will be altered during implementation of the new baseline plan, project reporting of trends and past problems/actions can significantly and suddenly change thereby affecting DOJ senior

management and Office of Management and Budget (OMB) view of the project.

2.3.4 DOJ CIO

Project briefings to DOJ OCIO management and DOJ CIO provide notification and request for approval prior to authorizing the contractor to re-baseline. In some cases re-baselining may require contract modification and programming additional funding to meet new fiscal year requirements.

2.4 Re-baselining Process

The re-baselining process normally results in an updated Project Management Plan (PMP). Re-baselining changes can affect the PMP by modifying several key aspects:

- Project scope (Work Breakdown Structure, WBS Dictionary, and contract Statement of Work)

- Assignment of responsibilities (Organizational Breakdown Structure)

- Project schedules (contract deliveries/milestones, Integrated Master Plan (IMP), and Integrated Master Schedule (IMS)

- Project cost estimates [Estimate To Complete (ETC), staffing plans (resource allocations), Estimate at Complete (EAC), Budget at Complete (BAC), Management Reserve (MR), Undistributed Budget (UB), Contract Budget Base (CBB), Performance Measurement Baseline (PMB), Total Allocated Budget (TAB), and OMB 300 submission]

The DOJ re-baseline process includes the following six key steps:
Request for Re-baseline Initiated
- Step 1. DOJ PMO/Contractor analysis of the need to re-baseline the remaining effort
- Step 2. DOJ PMO notification and request for DOJ CIO Approval to re-baseline

Approval to Proceed Authorized by Re-baseline Implementation Plan and DOJ CIO
- Step 3 Contractor develop schedules for re-baseline
- Step 4 Contractor develop cost estimates to re-baseline schedule
- Step 5 Contractor update baseline plans, logs & reports
- Step 6 DOJ PMO validation of the new baseline resulting from the re-baselining action and DOJ CIO presentation and approval

Re-baseline Approved by DOJ CIO

Figure 9 highlights these key process steps (circled number) in the re-baselining process chart with paragraphs following the chart describing each of these steps in greater detail.
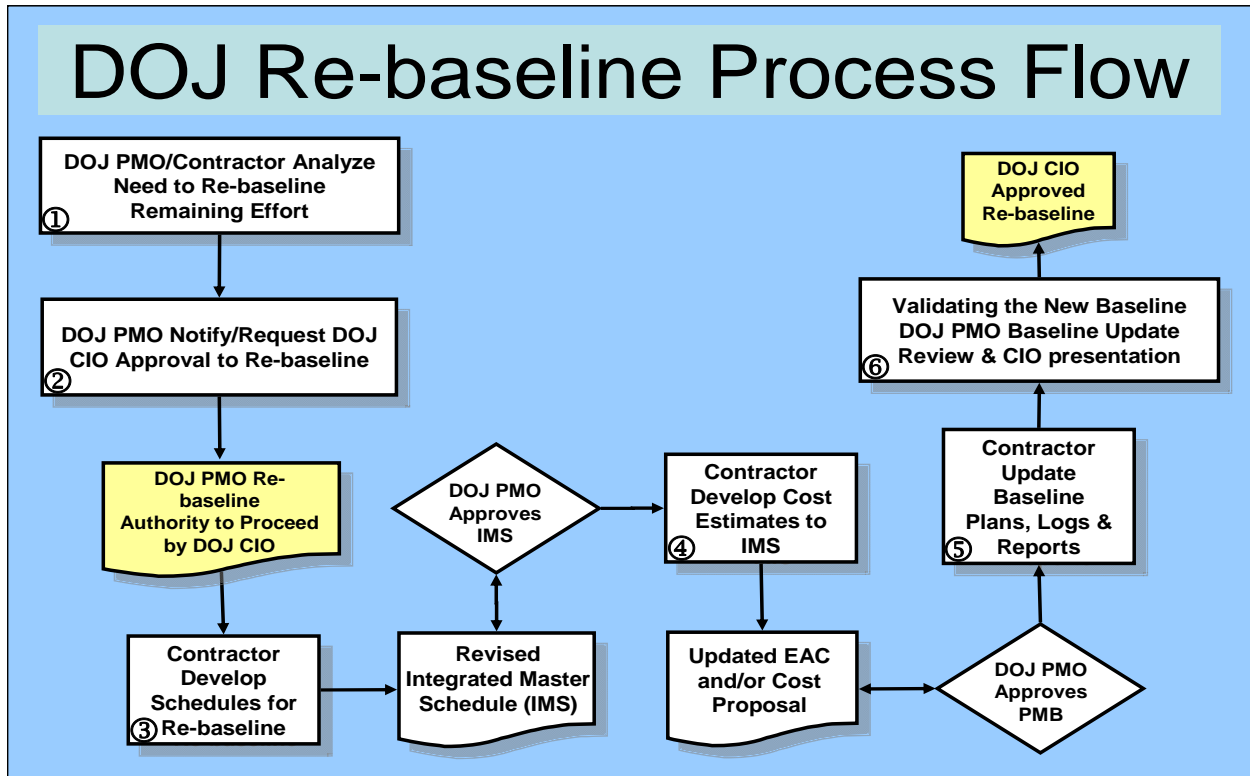
Figure 9: Appendix F - Re-baseline Process Steps (circled number on figure)

2.4.1 Step One – DOJ/Contractor Analyze Need to Re-baseline Remaining Effort

When the monthly variance analysis process does not provide effective communication to management on project progress and/or Control Account Manager incentives are not effective in managing cost, then the contractor and DOJ PMO should consider the initial step for re-baselining. The initial step is to decide if re-baselining is required. Simply put, evaluation of remaining budgets and schedule versus the remaining work scope will drive this decision. The primary reason for implementing a re-baselining is to improve the development contractor's ability to manage and control ongoing work.

The DOJ PMO decides whether a re-baselining is warranted. A re-baseline should be planned with the same rigor as planning for the original program estimate and PMB. While re-baselining can restore program confidence and control by establishing an achievable baseline, with meaningful performance metrics, the time and expense required to implement a new baseline should be considered.

The DOJ PMO should ensure that the benefits will outweigh the cost in both time and resources to implement the re-baseline. If better management information is cost effective and the program team is committed to managing within the new baseline, then the re-baselining should be implemented. A re-baselining originates with the development contractor pursuing DOJ PMO notification/request for DOJ CIO approval.

2.4.2 Step Two – DOJ PMO Notify/Requests DOJ CIO approval to re-baseline or reprogram

Any plans by the development contractor that impacts contract delivery dates or costs in excess of the contract priced items should provide a formal notification in the form of a letter to the DOJ program manager/COTR.

Prior to implementing any re-baselining, the DOJ PMO notification is required from the contractor. It is essential that plans for implementing a re-baselining be fully coordinated with the DOJ PMO and that the DOJ PMO concurs with the need for the re-baselining.

Implementation of an Over Target Baseline (OTB) or Over Target Schedule (OTS) should also begin only after consultation with the DOJ PMO project manager. This approach is called reprogramming and results in a budget baseline that exceeds contract Target Cost or Price (OTB condition). An OTS signals that the development contractor will not be able to achieve contractual milestones or deliveries. The DOJ PMO should coordinate the change in schedule (OTS) or re-baselining of a schedule with the operational end user of the system. The re-baselining or reprogramming may require the DOJ PMO to pursue possible changes to contract cost sharing or fee consideration from the development contractor.

The DOJ PMO notifies/requests approval for re-baselining from the DOJ CIO using the information developed in a re-baselining implementation plan document.

2.4.2.1 Document Proposed Implementation Plan for Re-baselining

During this initial phase, the development contractor updates or creates a project plan that reflects the new plan and schedule for implementation of the re-baselining or OTB/OTS. The documented re-baselining implementation plan should include the following items to determine if the re-baseline plan is acceptable:

- Ground rules and assumptions,

- Contract scope to be included/excluded,

- Expected technical, schedule and cost objectives compared to current baseline,

- Plans to adjust existing cost or schedule variances,

- Potential reporting changes,

- Documentation requirements for re-baselining,

- Planned dates for implementation of detailed scope changes, schedule changes, cost changes and management/customer reviews,

- Reasons for re-baselining and why the current plan is no longer feasible identify the problems that led to the need for a new baseline and discuss measures in place to prevent recurrence

The development contractor's EVM System description and/or program procedures should be followed when planning the re-baselining or reprogramming. Concurrently, the DOJ PMO should document their expectations including any specific reporting or coordination requirements for subsequent management reviews.

The DOJ PMO is the authority deciding whether the re-baselining is warranted and the plan to

implement the new baseline is acceptable. Once the DOJ PMO obtains DOJ CIO concurrence to re-baseline, then the initial effort begins to develop the detail definition and estimates of scope, schedule and cost. A consensus on the remaining scope should be reached between the development contractor and the DOJ PMO.

2.4.2.2   Consensus on Remaining Scope

2.4.2.2.1 Work Within Scope of Contract

As part of the ground rules and assumptions for the comprehensive Estimate To Complete (ETC), the development contractor and the DOJ PMO should reach consensus on the scope of the remaining effort. The remaining work may need to be clarified or replanned, but only as a means to reach mutual consensus for the remaining baseline. This validation should not result in a scope change to the contract nor require a contract modification.

2.4.2.2.2 Work Outside the Scope of Contract:

Frequently, contract changes may also be ongoing at the same time, resulting in changes to work scope, schedule, and to the Contract Budget Base. If these out of contract scope efforts are preceded by DOJ PMO Authority To Proceed (ATP), then the new baseline planning can include authorized unpriced work in the Contract Budget Base value and detail planning of the near-term control account manager efforts. Also, as part of the re-baselining or reprogramming process, additional scope requirements may be identified that will require contractual authorization. It is usually best to isolate and separately implement the changes associated with re-baselining.

2.4.3   Step Three – Contractor Develop Schedules for Re-baseline

2.4.3.1   Develop New Schedule

Some level of schedule development or analysis should always be performed during the re-baselining, even if it is apparent that only budget values or time phasing of budgets will be required. The development contractor should base all revised planning on a valid and realistic schedule.

The revised schedule should be developed in accordance with the re-baselining plan, and incorporate realistic constraints and schedule reserve as appropriate. Facility and resource availability for the new schedule dates should be confirmed during the development of the schedule. The logic, durations, and completeness of the new schedule should be validated as well as any impact to the DOJ PMO furnished equipment schedule or availability of DOJ PMO test ranges. Ideally, the DOJ PMO will participate in this schedule development effort, or, as a minimum, the project should keep the DOJ PMO informed of progress.

The revised schedule should be complete, integrated, and realistic in duration, and should reflect a coordinated schedule among key vendors and subcontractors. This top down master schedule sets the planning guidelines for the more detailed scheduling and budgeting time phased costs.

2.4.3.2   Comparison to Contract

Comparison of the new schedule to the Integrated Master Schedule or contract provisions will determine if contractual obligations will be affected by the new plan. If these new dates do extend beyond contractually mandated dates or the final completion date of the contract, then the re-baselining or reprogramming exercise may also require an OTS.

2.4.3.3   Schedule Review and Concurrence

The DOJ PMO should assess the logical sequencing of work in the schedule and validate the activities, durations and logic based on historical performance and current ground rules. The DOJ PMO should also verify schedule integration and traceability. Attention should be paid to evaluating the adequacy of reserve and the overall probability of achieving the new schedule.

The new schedule should be reviewed in partnership between the development contractor and DOJ PMO. Establishing both scope content and the revised schedule should serve as an exit criterion before the development contractor begins the detailed planning associated with time phased budgets into work packages. The DOJ PMO scheduling review and assessment can satisfy a portion of the Baseline Review prior to detail cost estimating or budgeting of work packages.

2.4.4   Step Four – Contractor Develop Cost Estimates to IMS

2.4.4.1   Prepare Estimates to Complete

The DOJ PMO should ensure that the development contractor is using the new IMS schedule and previously established program assumptions. The development contractor's Control Account Managers (CAM's) should next prepare detailed estimates of the resource allocations required to complete the remaining scope of work on the contract. This comprehensive Estimate To Complete (ETC) should be based on a bottoms-up estimate for staffing, material, travel, etc. The CAM's should also evaluate all remaining risk items, potential cost and/or schedule impact, and the probability of their occurrence. Based on guidelines established by the project manager, risk dollars may be included as either part of the ETC in the WBS elements or as management reserve budget at the total contract level.

As part of this process, the development contractor may identify and generate estimates of additional work not currently on contract that may need to be completed as part of the contract. It is important that the estimates for these efforts be kept separate from the ETC, as formal approval is required for new work and the need for DOJ PMO authorization to proceed.

The DOJ PMO should ensure that once the ETC is prepared at the control account level, the development contractor will "scrub" the estimates to remove redundant effort, correlate estimates between managers and organizations, and ensure that proper rates and factors have been applied to generate the final ETC value. The CAM's may also review the ETC and schedules with functional, project, and business managers. During this process, the CAM's may be "challenged" to reduce their estimates to accommodate staffing issues, skill mix changes, resource reductions, or schedule adjustments.

The DOJ PMO should assess the new ETC and any changes to the IMS.

2.4.4.2   Management Reserve (MR)

One of the decisions to be made during the re-baselining or OTB estimating is the amount of MR that will be included as part of the final OTB value. There are a number of factors that must be considered in arriving at a reasonable and prudent amount of MR budget:

- Consideration of phase of project (% complete),

- Robustness of risk management processes and ability to identify risk,

-     Technical evaluation of future risks (probability and consequence), and

- Amount of MR consumed to date as a percentage of cumulative EV may be important as historical factor

The development contractor has the responsibility to identify and budget for a realistic MR. However, the DOJ PMO also has a significant stake in understanding project risks and ensuring adequate MR for the remaining effort. Recognition of the relative aggressiveness and risk content of the ETC is critical in determining adequacy of MR.

2.4.5   Step Five – Contractor Update Baseline Plans, Logs & Reports

2.4.5.1   Guidance to Control Account Managers:

The DOJ PMO should ensure that the contractor provide its Integrated Product Team, Control Account Managers and estimators with replanning guidance. This is often included in the development contractor's approved EVM System, normally as preparation for the initiating a comprehensive Estimate-To-Complete. This document should define the following for the CAM's: remaining scope of work to be estimated, revised schedules, variances to be adjusted, and an overall schedule for completing the comprehensive ETC. The project should provide the contents of this document with the DOJ PMO project office to ensure that it will support higher-level DOJ PMO requirements for submission of the proposed final cost.

2.4.5.2   Adjusting Variances

A key consideration is implementing an OTB is to determine what to do with the variances against the pre-OTB baseline. There are essentially five basic options. This is a far more detailed effort than these simple descriptions imply, as these adjustments have to be made at the detail level (control account, work package or, for unexercised contract options, summary planning package level).

2.4.5.2.1 Elimination of All Variances

This eliminates cost and schedule variances for all WBS elements by setting Planned Value (PV) and Earned Value (EV) equal to the value of Actual Cost (AC). This will normally generate an increase to EV and, in most cases, some adjustment to PV. This is the most common form of variance adjustment in an OTB situation.

2.4.5.2.2 Eliminate the Schedule Variance Only

After evaluating the cumulative information in the Cost Performance Report (CPR), the DOJ PMO and development contractor project managers may agree that the cost variance represents meaningful performance measurement information that the control account managers should continue to focus on and that only the SV should be eliminated. By preserving the CV information, a new performance measurement baseline can be established without losing visibility into ongoing cost performance.

This is accomplished by setting PV equal to EV. PV will show a current period adjustment. This will allow unperformed work and its associated budget that was scheduled in prior months to be replanned in the future.

2.4.5.2.3 Eliminate the Cost Variance Only

While rare, there are situations where the cost variance element of performance measurement drives the need for an OTB, but the schedule information is valid. If, after evaluating the cumulative performance measurement information, the DOJ PMO and development contractor

project managers agree that the schedule variance contains valid performance measurement information, the OTB can be implemented by eliminating only the CV. By preserving the SV information, a new performance measurement baseline can be established without losing visibility into ongoing schedule performance.

The process to eliminate cost variance is to set EV equal to AC. Since EV changes, cumulative PV should be changed by the same amount in order to preserve the SV. There will therefore be current period positive adjustments to both EV and PV. (It should be noted that the final value of PV would not be equal to either EV or AC.)

2.4.5.2.4 Eliminate Selected Variances

A situation may arise where only a portion of a contract may require an OTB. If, for example, performance on one or more WBS elements, a single Contract Line Item Number (CLIN), or possibly a single subcontractor is out-of-line with the baseline for that element, the two program manager's may choose to implement an OTB for only that portion of the contract. In this case, all other variances and performance measurement elements would remain intact. The OTB reporting provisions would only apply to the items selected for OTB.

2.4.5.2.5 Retain All Variances

It is possible that a development contractor may have been performing fairly well to the baseline plan and not incurring significant variances; however, the development contractor needs additional budget to complete remaining effort. Alternatively, the development contractor may have large variances, but the development contractor and DOJ PMO have agreed to retain all variances. In these situations, no adjustments are made to zero out variances, but additional budget is added during the OTB process for future work.

2.4.5.2.6 Actual Cost of Work Performed

It should be understood from the proceeding discussion that in no case is Actual Cost of Work Performed (ACWP) or Actual Cost (AC) adjusted during these processes except for correction of errors. ACWP/AC should always be reconcilable with the contractor's actual costs in his financial accounting book of records.

2.4.5.3   Input Estimate to Complete (ETC) into EVM System and establish new budget baseline

The DOJ PMO should review the cost estimates and provide the development contractor with Authority To Proceed (ATP) with the loading of the new budget baseline or OTB as the new performance measurement baseline. While there are multiple approaches to doing this, the actual process is a function of the individual contractor's EVM System. Factors such as size of contract, complexity, depth of WBS/Control Accounts, flexibility of the development contractors automated system and resources available to process the documents will determine the overall time to accomplish this activity. It is not unusual for the development contractor to require two complete accounting periods to complete the input: one to input the information and another period to perform error correction on the output from the system. The new ETC will be input as both the new ETC and the new budget baseline.

2.4.5.4   Contractor Control Account Manager (CAM) Reviews and ETC "Scrubbing"

The development contractor's project office will then normally review the new baseline, ETC,

and detailed schedules with each of the CAM's. The DOJ PMO will participate in this review. Discussion of such topics as staffing, issues, and workarounds as necessary, if done at the appropriate level, may reduce the effort for a baseline review at a later date. This independent assessment by the DOJ PMO technical team may often surface overlooked items or issues.

2.4.6   Step Six – Validating the Revised Baseline

Based on Step 5 above, the development contractor should then incorporate any final changes to the new baseline and schedule. A final project level review should then be conducted with the DOJ PMO to complete the validation of the new baseline.

2.4.6.1 Validating the New Baseline, Management Review and Approval

The Integrated Baseline Review (IBR) is used to validate the original or initial contractor baseline. Once the initial contractor baseline is successfully validated using the IBR, then the validation of a new baseline from re-baselining normally does not require the complete IBR. This is because of the previous close monitoring of performance to the baseline keeps the PMO knowledgeable of updates to the current schedule forecasts and cost estimates. Frequently the PMO is aware of the strengths and weakness during the contractor's re-baselining effort and the validation of the new baseline requires less of a formal and complete IBR. A tailored IBR or Baseline Update Review (BUR) is more appropriate for validating the new baseline resulting from re-baselining. If this knowledgeable condition does not exist, then a full IBR is recommended to validate the new baseline. The BUR uses a team of key PMO, DOJ and contractor specialists to ensure appropriate documentation of baseline revisions exist and summaries documenting the changes accurately reflect and communicate the changes from the old baseline to the new baseline and the associated risks.

In executing the BUR, the team assesses the adequacy, realism, and risks of the baseline by examining the following criteria to successfully validate a project baseline:

- The technical scope of authorized work is fully included,
- Key schedule milestones are identified,
- Supporting schedules reflect a logical flow to accomplish tasks,
- The duration of each task is realistic and the network schedule logic is accurate,
- The program's critical path is identified,
- Resources—budgets, facilities, personnel, skills—are available and sufficient for accomplishing tasks,
- Tasks are planned so as to be objectively measured for technical progress,
- The rationale supporting PMB lower-level control accounts is reasonable, and
- Managers have appropriately implemented required management processes

The DOJ PMO validates the new baseline and documents the Baseline Update Review with a summary of its findings/actions. This document should include:

- Re-baselining decisions, including the reasons for re-baselining,
- Explanation of why the current plan is no longer feasible,
- Identify the problems that led to the need for a new plan of the remaining work,
- Discuss measures in place to prevent recurrence of re-baselining,
- Changes to the approved baseline cost, schedule, and scope,
- Management review of the re-baseline request, and

- Approval of new baseline

The Baseline Update Review document is the basis for presenting a summary of the final results in re-baselining the project to the DOJ CIO for approval. A more detailed understanding of the IBR activity is contained in Appendix E of this EVM implementation guide.

2.4.6.2 Contractual Actions

The development contractor's execution of any re-baselining must be affordable within the DOJ's approved funding for the project. The DOJ PMO plays a key role throughout the re-baseline implementation process to determine whether the contract is executable within the constraints of the project baseline or whether modifications or work around plans are necessary.

The overriding goal should be to allow the development contractor to implement in a timely manner a baseline that allows proper management control of the ongoing effort. Because OTB budgets and schedules do not supersede contract values and schedules and are implemented solely for planning, controlling, and measuring performance on already authorized work, a contract modification is not needed.

If the new schedule results in an OTS situation, both parties must recognize that the existing contract milestone schedule still remains in effect for purposes of contract administration and execution. The new dates in the OTS are for performance measurement purposes only and do not represent an agreement to modify the contract terms and conditions. The DOJ PMO may wish to negotiate consideration via a contract change; however, no other contract modification is necessary.

2.5 Reporting during Re-baselining Implementation

It is not uncommon for the development contractor to request suspension of reporting during the time period required to implement the re-baselining. Depending on the length of time to implement the new re-baselining, the development contractor and the DOJ PMO must determine if, and to what extent, reporting requirements will be suspended or reduced. Reporting needs for senior DOJ PMO levels must be considered when addressing this question. It may be difficult to ascertain the length of time it will take to implement a new baseline based on the scope of the effort.

The DOJ PMO should be cognizant of the Prime Contractor's coordination complexities and issues with its subcontractors. The time to implementation may be extended due to accounting calendar month overlaps, compressed reiterations of Development contractor ETC updates, internal reviews, Subcontractor MR strategy negotiations, senior management approvals, etc. all while statusing the normal existing performance within a reporting cycle.

APPENDIX G   INTEGRATED MASTER SCHEDULE CHECKLIST

INTRODUCTION

What Is It

A checklist to use during the initial planning and scheduling phase of your IT project. It contains items to ensure your schedule includes all project work, such as contractor and government deliveries, cross-functional activities, testing, and more.

Why Is It Useful

A project consists of more than the main technical or development or design work. Many activities from supporting groups must also be included, for the product or service to be truly ready for customers at the end of the project – and for your team to be committing to an accurate schedule based on everything that REALLY has to be done before the project is over!

This checklist will help you make sure your project schedule includes everything it should. Prior to detail scheduling, it can remind you of items that should be included in the project scope and investigated during the planning phase.

How to Use It

- Take a first look at the checklist early in the project, before you've even started detailed planning, to get reminders of items to consider for defining the scope of the project.
- Read this checklist as you're starting your planning work, to be aware of the entire range of activities you should consider for your schedule.
- Provide copies to your cross-functional team members as you ask them to contribute their own task lists and estimates to the full project schedule.
- Reference the checklist during the planning as necessary to make sure you're getting all the needed details to have a fully complete schedule, and then be sure to check your schedules against it again as you're nearing the end of planning.
- Make sure all items are covered (**including all development contractor, subcontractors and Government requirements affecting project deliverables or objectives**) so that your team commits to a complete and accurate schedule!

Reminder

Did you read the minutes from past project Lessons Learned meetings to make sure past problems aren't repeated and past good ideas are used?

Did you or your team generate a project listing of all customer requirements and deliveries including both government and contractor key activities/deliveries needed to complete the customer deliveries?

The Checklist Starts on the Following Page

	Early planning before creating the detail schedules:
[ ]	Is the program or project broken into major phases and segments/increments which identify products or functions that can be tested and verified by the government?
[ ]	Have you set a target date with product deliveries for each phase, segment/increment?
[ ]	Do you have a task list/action item list (Integrated Master Plan) to move the team through each phase, segment/ increment?
[ ]	Does the task list/action item list clearly map to the Work Breakdown Structure (WBS) or WBS Dictionary that describes the entire project scope of effort?
[ ]	Have any early training requirements been identified to reduce the risk of impacting the schedule later (training on tools, third party software, the development process, etc.)?

	Detailed schedule items, durations and network relationships:
[ ]	Were the architecture and high-level hardware or software designs done to module level, sufficiently to __ accurately identify all the pieces of technical work to be done? __ and get an accurate estimate for each? (Did the team agree up front on what level of detail in the architecture/design would be necessary to accomplish the above?)
[ ]	For more uncertain tasks, was the difficulty or uncertainty assessed and were increases to duration factored into the task estimates?
[ ]	Were interfaces defined well enough during this segment/increment to find all pieces of technical work?
[ ]	Has the team defined the desired content of any detailed specifications, to understand the scope of work and reviews, and ensure an efficient design process?
[ ]	Are there back-up plans for risky areas, and trigger points for deciding to go to a back-up plan?
[ ]	Are important design reviews shown as key milestones?
[ ]	Is time included for design reviews and code reviews?
[ ]	Are "ancillary" tasks such as team member training scheduled?
[ ]	Is time scheduled to train contractors on the development process and how it's being used on this project?
[ ]	Is time included for unit testing? (note: want to ensure no untried code goes to an independent QA group)
[ ]	Is time included for creation of test tools or testing environments including automated tools and scripts? (unit, integration, system functional, drivers, harnesses, instrumentation code)
[ ]	Is time included for writing and testing of Software Quality Assurance (SQA) scripts by SQA members, and for participation and/or review by developers if needed?
[ ]	Do test periods include time for deployment in field before user operational testing starts?
[ ]	Were testing schedules constructed and estimated from the bottom up, not just a high-level guess and/or one monolithic testing task? (e.g., using such assumptions as rough number of test cases for execution, number of testers, amount of retest once bugs are fixed, regression test time, etc.)

[ ]	Were schedule network relationships identified between non-LOE tasks/activities?
[ ]	Were delivery date constraints identified to support project requirements?
[ ]	Were all government and contractor activities which could impact deliveries identified?

Cross-functional tasks included:	
[ ]	Have other group's activities been thought through and put in the schedule. __ User manuals and other publications __ Development, Deployment and Operations (Test engineering, Independent Verification and Validation, Purchasing, etc.) __ Field support and Logistics __ End User requirements, communication and outreach __ Program Manager and Executive reporting
[ ]	Does the planning include government program office participation in early design reviews and planning (Integrated Baseline Review)?

Schedule construction:	
[ ]	Except for "support as-required" or Level of Effort (LOE) support activities, attempt to keep tasks/activities between 4 and 160 hours of duration? Attempting to maintain too much detail in the IMS can make scheduling analysis difficult with little management benefit. If "support as-required" or LOE activities are included in IMS, then normally, they should not be part of the critical path to product delivery.
[ ]	Are there milestones every 2-4 weeks for tracking?
[ ]	Is the contractor's development process being used appropriately for the project?
[ ]	Has risk assessment been done and iterations included for risky areas? (e.g., assume more than one round of design and test on a hardware or software module, algorithm, etc.)
[ ]	Are iterations included for multiple design/document drafts and reviews as appropriate? (e.g., schedule might assume two rounds of functional spec draft and review.)
[ ]	Does the integration testing schedule show: __ The progression of modules into integration testing? __ Reasonable testing times for all with safety margins built in? (Ensure that the integration time didn't get artificially shortened to reduce a project schedule).
[ ]	Do the test periods include more than one iteration, where test results are reviewed, corrections determined, new builds made, and retest done?
[ ]	Are all dependencies to deliveries understood (including dependencies with other projects) and shown?
[ ]	Are all scheduling constraints understood and shown?
[ ]	Are all resource constraints understood and shown?
[ ]	If the project plan may change based on information learned during later activities, are corresponding key decision points called out as important milestones to be tracked?
[ ]	Are contractual commitment dates clearly delineated and understood?

Resources:	
[ ]	Is it clear who should participate in various reviews? (delineated in a schedule, in a responsibility matrix, or in project meeting guidelines)
[ ]	Does every task have a specific resource labor category or skill, and where appropriate, name assigned?
[ ]	Are there committed, appropriate resources assigned to builds, installs, other support tasks? No support tasks should appear on the critical path.
[ ]	Does the schedule identify time needed from developers to support non-development activities (such as trips to the field for requirements gathering; deployment; training...)?
[ ]	Are resources identified who might be needed to deal with issues part time during deployment?
[ ]	If a person is not really available full-time for this project (due to sustaining work, other projects, etc.), has their true availability been factored in and task completion dates set accordingly?
[ ]	Has manpower planning been done across projects, to make sure that the Development people assigned to tasks on this project are actually available as much as this schedule assumes they are?
[ ]	Has manpower planning been done across projects, to make sure that the cross-functional people such as Operations and field support assigned to tasks on this project are actually available as much as this schedule assumes they are?
[ ]	Does each person's availability percentage for actual technical work reflect the time they'll spend as technical team leads? (Make sure those technical leads aren't spread too thin.)
[ ]	Does each person's availability percentage reflect the time they'll spend attending each other's design reviews?
[ ]	Does each person's availability percentage reflect time taken up by interviewing job candidates?
[ ]	Does each person's availability percentage reflect time taken up by attending training?
[ ]	Is time in meetings taken into account?
[ ]	Is learning curve time included for __ new team members __ anyone entering project mid-stream (to get up-to-date on requirements and design) __ new hires needing to learn the system __ new tools __ development environment __ someone's time to train the new developers, contractor, etc.
[ ]	Is the critical path and near-critical path activities clearly shown?
[ ]	Does the schedule and milestone list clearly show deliverables from outside contractors or third-party development firms?
[ ]	Has a schedule baseline been established against which the current schedule plan can be compared?
[ ]	Is the schedule contingency or reserve clearly identifiable and under program manager control?

Final Check:	
[ ]	Has the contractor signed off on the schedule and milestone list?
[ ]	Were they involved in estimating their own work and reviewing dependencies?
[ ]	Where risk assessment warrants: Is there a back-up plan in case a vendor varies from plan?
[ ]	Did individuals on the team give the estimates for their own work?
[ ]	Was every group involved and committed in this phase or segment/increment?
[ ]	Have the contractor and government Program Managers provided a sanity check on everyone's estimates?
[ ]	Has someone outside the project provided a sanity-check to the schedule?
[ ]	Did you take into account "actual duration and cost" from past projects?
[ ]	Were both optimistic and pessimistic task and overall schedule estimates made to help assess potential impact of schedule risks?
[ ]	Has the team reviewed the schedule and do they support it?
[ ]	Do the functional or resource managers support the schedule?

APPENDIX H   EVM PROBLEM RESOLUTION CHECKLIST

INTRODUCTION

What Is It

DOJ Office of the CIO (OCIO) created an Earned Value Management (EVM) Program Management Problem Resolution Checklist of some of the most common EVM related program problems to assist the Program Manager (PM)/Program Management Office (PMO) in identifying and correcting these problems. The EVM data in conjunction with the program established EVM performance metrics helps to evaluate the program's overall conformance to plan. EVM is one of the principal tools available to the PM to help identify current program issues, forecast trends and use the information to initiate corrective actions.

The recommendations provided in the checklist are based on DOJ past program experiences and on industry best practices and are broad in scope since project specific actions would require a full analysis and understanding of the specifics of the project problems encountered.

The checklist focuses primarily on these potentially critical areas:

- Lack of adequate scope definition and scope management

- Lack of adequate cost definition and cost management

- Lack of adequate schedule definition and schedule management

- Weak Integrated Master Schedule with limited or no inter and intra-dependencies

- Inadequate risk identification and risk management

- Incomplete resource identification including skills required, availability and performance monitoring

- Inadequate contractor/subcontractor management throughout the life-cycle of the program

Why Is It Useful

The DOJ OCIO reviewed multiple projects and identified recurring problem root causes and their corrective actions. The DOJ OCIO experiences support the use of EVM as a major tool in identifying and addressing recurring problems.

How to Use It

The EVM problem resolution Checklist below is broken down by problem Situations and is followed by a set of Recommendations. The user is encouraged to review the complete Checklist and identify potential EVM situations that they might be relevant to their program, evaluate the proposed recommendations and adapt these to their program as appropriate.

If you have any questions regarding this Checklist, please contact Joe Rinaldi, DOJ OCIO, Enterprise Solutions Staff. Joe can be reached at (202) 514-9772 or via email at **joseph.w.rinaldi@usdoj.gov**.

	EVM Problem Situations and Resolution Recommendations
[ ]	**SITUATION:** Unclear scope and broad requirements definition impact ability to identify specific deliverables. This situation usually results in a high number of requirements related Change Requests that when evaluated over time indicates a lack of stakeholder agreement on the fundamental program scope and purpose. **RECOMMENDATIONS:** • Go back to the program charter to validate the initial project scope as identified by the key stakeholders. • Progressively elaborate requirements and verify with stakeholders that these elaborations are consistent with the program charter scope definition. • As required re-evaluate all affected project work packages and the associated inter and intra dependencies.
[ ]	**SITUATION:** Consistently divergent cost and schedule variance trends put in question the validity of project plan. In these situations inconsistent cost and schedule variance analysis reporting tend to create increasingly divergent variances. **RECOMMENDATIONS:** • Establish cost and schedule thresholds per the DOJ EVM Implementation Guide Version 2.0 section 4.4.3 *Variance Analysis*. • Work with the Control Account Managers to initiate EVM root cause analysis, identify corrective action(s) and impact(s) to the project. • Corrective action plan shall specify detailed action items, expected results, completion milestones and project impact. • Track corrective actions to completion. • If re-baselining is required, ensure compliance with the DOJ EVM Implementation Guide Version 2.0 section 4.5 *Revisions and Data Maintenance*. • Initiate Risk assessment as appropriate
[ ]	**SITUATION:** Cost and schedule baselines are unable to produce meaningful project variance reporting. **RECOMMENDATIONS:** • Revise cost and schedule baselines and adjust cost variance thresholds to maintain meaningful and cost effective variance reporting going forward. • Initiate EVM root cause analysis, identifying corrective action(s) and impact(s) to the program. • Distribute findings to Control Accounts Managers for their action as appropriate. • Initiate Risk assessment as appropriate

	EVM Problem Situations and Resolution Recommendations
[ ]	**SITUATION:** Cost and schedule trends analysis indicate program inability to perform according to plan. **RECOMMENDATIONS:** • Analyze variances and trends monthly for a minimum of three months after establishing cost and schedule baselines in order to evaluate the project progress. • Validate that no significant contract changes or budget revisions affected the data under review. • Assess whether the risk of completing the phase or segment can be managed. • Actively monitor and control Change Request trends.
[ ]	**SITUATION:** PMO time phased budgets inconsistent with the time phased funding may cause reporting problems. Typically in these situations the PMO cannot track budget revisions to the time phased budget baseline, distributed budget, undistributed budget, management reserve and Contract Budget Base. **RECOMMENDATIONS:** • Analyze Contractor budget tracking logs for revisions to the distributed budget, undistributed budget, management reserve and Contract Budget Base (this is the best sources for tracking baseline revisions). • Use Contract Performance Report Format 3 to provide insight to the time phased changes from the prior month's baseline to the current month's baseline. • Implement Contract Funds Status Report to reconcile Estimate to Complete (ETC) with funding. • Ensure the contractors EVM tool generates a time phased budget and time phased ETC.
[ ]	**SITUATION:** Lack of compliance with the DOJ OCIO established EVM threshold triggers. EVM thresholds are established in the DOJ EVM Implementation Guide Version 2.0 section 4.3.3 Variance Reporting in accordance with OMB guidance. **RECOMMENDATIONS:** • Ensure that thresholds specify current month, cumulative and at completion variances to be analyzed and reported. • Use PMO Contracting Officer letter to establish thresholds at higher Work Breakdown Structure reporting elements that would include variance reporting at level WBS/CWBS elements (down to the Control Account level) if the threshold is exceeded. • Adopt thresholds for reporting variances that use both a percentage and a dollar value.

	EVM Problem Situations and Resolution Recommendations
[ ]	**SITUATION:** Backdating revisions to Planned Values, Earned Values and Actual Costs may cause inconsistent reporting and raise program credibility issues with external audits and create problems with the timely incorporation of changes to the scope, schedule and cost baselines. **RECOMMENDATIONS:** • Adjustments to fix prior Planned Values, Earned Values and Actual Costs are made and reported in the current month with explanations of corrections in CPR Format 5 and in the DOJ OCIO Dashboard. • PMO issues an authorizing documentation that provides the contractor with authority to proceed with all planning activities required to fully definitize this revision (i.e., finalize all cost and schedule adjustments in the Performance Measurement Baseline/Time phased Budget) • Ensure that baseline change process is in place and controls retroactive changes.
[ ]	**SITUATION:** Planning Packages details impact current baseline and that leads to re-baselining which may result in continuous problems with the progressive elaboration of schedules by the contractor. **RECOMMENDATIONS:** • Break the IT project into manageable phases, segments or increments to group the project into meaningful major design goals or deliveries. • As appropriate, incorporate the use of "rolling wave" detail planning for development efforts. • Use detailed schedule of major design completions or delivery points and not fiscal year spending for milestone start or end dates. Note that Level of Effort (LOE) tasks are typically spending plans with no schedule significance.
[ ]	**SITUATION:** Problem identifying the root causes of significant cost and schedule variances in project reports. **RECOMMENDATIONS:** • Evaluate the prior three month period for one or more of the following: variances in excess of threshold, negative trending data, frequent revisions to baseline data including time phased planned values, changes in undistributed budget or changes in management reserve. • Compare resources, scope, and schedule in control account plan to basis of estimate in the contract/original cost proposal.

EVM Problem Situations and Resolution Recommendations	
[ ]	**SITUATION:** Root causes of significant cost and schedule variances were identified but no action has been taken by the contractor to resolve problem causes. **RECOMMENDATIONS:** • Identify solutions and develop a specific corrective action plan that documents the activities necessary to evaluate the effectiveness of the corrective actions, including post corrective monitoring as required (Work with Component CIO and DOJ OCIO as appropriate). • Recommend best alternative and select plan of action which may include re-baselining, new personnel, and project scope changes. • Initiate Risk assessment as appropriate. • Conduct frequent status reviews with contractor.
[ ]	**SITUATION:** Once the contractor takes action based on the root cause analysis of significant cost and schedule variances identified, the contractor must establish whether the anticipated results are being achieved. In the case that the selected action plan does not provide the anticipated results, then additional actions are required. **RECOMMENDATIONS:** • Start by gathering the data for cost, schedule and risk impacts, resources, quality, and stakeholder feedback on the selected corrective actions. • Develop and update the current cost and schedule plan in the Integrated Master Schedule and the Estimate to Completion (ETC). • Initiate Risk assessment review. • Recommend the revised action plan to the PM and Component CIO. If appropriate, review revised plans with the DOJ OCIO. • Re-evaluate results achieved and compare to current Program Management Plans for the program. Update all elements of the Program Management Plan as appropriate.
[ ]	**SITUATION:** EVM forecasts of Estimate To Complete (ETC) and Estimate at Completion (EAC) data may not totally convey the cost efficiencies required to complete the project as planned. **RECOMMENDATIONS:** • Use "To Complete Cost Index" (TCPI) to show the efficiencies required going forward in order to achieve the project completion reflected in the current plan or ETC. • Review TCPI trend data and take appropriate action. • Identify potential program problems early on to Component CIO and DOJ OCIO. • Mandate a TCPI threshold that is required to trigger the risk process for EAC.

EVM Problem Situations and Resolution Recommendations	
[ ]	**SITUATION:** Unanticipated Risk elements impact project performance and may be significant enough to consider re-baselining or other significant project impact. **RECOMMENDATIONS:** • Ensure current Project Management Plan and Risk Register is used and that includes risk identification, qualitative and quantitative impact assessments. • For all major risk elements, develop detailed mitigation plan and identify a risk owner. • Regularly review risk plan and risk register with stakeholders. • Assign a Risk Manager for all major programs.
[ ]	**SITUATION:** Long term project progress is hampered by frequent contract changes. **RECOMMENDATIONS:** • If re-baselining is required, ensure compliance with the DOJ EVM Implementation Guide Version 2.0 section 4.5 *Revisions and Data Maintenance*. • Frequent contract changes or baseline revisions over a six-month period may indicate that the budget baseline will not produce meaningful/useful variance analysis. • Attempting to use the earned value variance and trend data for project progress assessments and/or decisions during this period could be misleading and non-productive. • Go back to the root cause analysis and evaluate if the real root causes were identified or if further root cause analysis is required. • Authorized Unplanned Work (AUW) should be planned in sufficient detail to its logical conclusion or next major milestone.
[ ]	**SITUATION:** Continued poor contractor performance over an extended period of time indicates possible fundamental problems in adequately defining requirements, development of an achievable schedule, deliverable quality or technical and resource issues in progressing with design or build. **RECOMMENDATIONS:** • Create a group independent of the PMO to assesses the root causes of continued poor contractor performance and propose recommendations for solutions to the Component CIO or DOJ OCIO. • Review previous IBR for lessons learned opportunity.