



IPMR Implementation Guide


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Foreword

The Integrated Program Management Report (IPMR) Data Item Description (DID) DI-MGMT-81861A contains data for measuring contractors' cost and schedule performance on Department of Defense (DoD) acquisition contracts. It may also be tailored for use on intra-government work agreements. It is structured around seven formats that contain the content and relationships required for electronic submissions. This guide covers the application of the DID, how to tailor the DID in the Contract Data Requirements List (CDRL), and clarification on the intent of the DID.

This guide is applicable to all OSD contracts with a requirement for the Integrated Program Management Report (IPMR) Data Item Description (DID) DI-MGMT-81861A.

Proposed changes to this document may be submitted to PARCA, via the PARCA website (<http://www.acq.osd.mil/evm>), using the Issue Resolution link. This document may be changed with DoD PARCA approval at any time.

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1.0 Application of the IPMR DID.

1.1 Introduction.

The purpose of this guide is to provide insight into the Integrated Program Management Report (IPMR). The IPMR is the primary means of communicating program cost and schedule information between the prime contractor and the Government. The IPMR should always be carefully tailored to meet the needs of each individual program and should reflect how the contractor is implementing the seven formats as a program management tool to manage the contract’s performance.

The primary challenge for the Government is to tailor the format reporting so they provide actionable information for making program management decisions. Note: Careful attention is required during the solicitation/proposal and contract definitization stages to tailor the IPMR Data Item Description (DID) (DI-MGMT-81861A).

1.2 Factors to be Considered.

The complexity of the program should be considered when determining the degree of tailoring that is appropriate for the IPMR data item for a given contract. The risk inherent to the program should be the prime consideration for tailoring of the IPMR. Other factors to consider are the size of the contract, complexity of integration with other contract efforts, reliance on Government Furnished Equipment/Government Furnished Property (GFE/GFP), technology maturity, and type of contract. Government EVM Focal Points should be consulted when tailoring the IPMR data item to ensure program specific complexities and risks are accounted for.

1.3 Applying the IPMR DID Formats.

The application of the IPMR DID formats is based on size. The table at Figure 1-1 defines the formats applicable based on contract value.

APPLYING THE IPMR DID Based on Contract Value	
CONTRACT VALUE (1)(2)	REQUIREMENTS
≥\$50M	All IPMR formats required IPMR may not be tailored or reduced, except as defined in the DID or this document, without additional approvals
≥\$20 < \$50M	Formats 1, 5, 6, and 7 required Formats 2, 3, and 4 optional
<\$20M	At discretion of Project/Program Manager (PM) No requirement Optional Application Formats 1 and 5 recommended Format 6 may be recommended

Figure 1-1 Applying the IPMR DID Based on Contract Value

- (1) Considers all known options at contract award.
- (2) In then-year dollars.

Figure 1-2 below describes each format and shows the format applicability. Specific content tailoring and preparation guidance for the DD 1423-1 IPMR CDRL is contained in section 2.0.

FORMAT TITLE	FREQUENCY	DESCRIPTION	PURPOSE	APPLICATION
Format 1 Work Breakdown Structure	Monthly or As Required in the CDRL	Reports performance data (BCWS, BCWP and ACWP) by reporting WBS elements for the current reporting period as well as cumulative to date. Cost and schedule variances are calculated and reported from the data. Identifies any reprogramming adjustments, BAC, EAC, and VAC by element. Also shows management reserve (MR) and undistributed budget (UB). It can also show indirect costs if required	Isolate key cost and schedule variances, quantify the impact, analyze, and project future performance. Performance issues are isolated at the lowest level and analyzed for impact to overall cost and schedule variances	>=\$20M, Mandatory <\$20M Recommended for small contracts
Format 2 Organizational Breakdown Structure	Monthly or As Required in the CDRL	Reports the same data as Format 1, except containing organizational elements or IPT levels. Identifies major subcontractors and material separately.	Same as Format 1, but provides for analysis organizational elements and/or IPT level(s) as well as identifies major subcontractor and material performance.	>=\$50M, Mandatory >\$20<\$50M, Optional, but recommended for development contracts or those with significant outsourcing and/or deliverable major subcontractor effort.
Format 3 Baseline	Monthly or As Required in the CDRL	Budgeted time-phased baseline Performance Measurement Baseline (PMB) through program completion. This format shows significant baseline changes authorized during the reporting period. Data includes CBB, TAB, MR, UB, and completion dates.	Data can be plotted to determine if there has been a shift in the PMB. Analysis can focus on the distribution of cost for authorized changes to the PMB during the reporting period. The header is used to identify if OTB or OTS has been incorporated into the PMB.	>=\$50M, Mandatory >\$20<\$50M, Optional, but recommended for development contracts.

FORMAT TITLE	FREQUENCY	DESCRIPTION	PURPOSE	APPLICATION
Format 4 Staffing	Monthly or As Required in the CDRL	Staffing forecasts for organizational elements through program completion	Staffing data plotted over time correlated to major milestones and activities on the contract schedule shows accuracy of labor estimates. Projected staffing levels should be analyzed for consistency with scheduled activities.	>=\$50M, Mandatory >\$20<\$50M, Optional, but recommended for development contracts.
Format 5 Explanations and Problem Analysis	Monthly or As Required in the CDRL	Narrative explanation of key cost, schedule variances. Contractor describes underlying reasons, program impacts, and corrective action plans for significant drivers at the lowest specified level and at the total contract level. Includes analysis of MR, UB, and overall risk	A narrative that explains data from other formats to understand the reasons for the variances and corrective action(s). The complete analysis provides the PM with data to make informed decisions.	>=\$20M, Mandatory <\$20M, Recommended for small contracts
Format 6 Integrated Master Schedule (IMS)	Monthly or As Required in the CDRL	Defines the schedule for completing the contract. Is consistent with all other formats.	Used to schedule the project and determine the Critical Path. Contains both the baseline and forecast schedules and predicts the contract completion date and all interim milestones.	>=\$20M, Mandatory <\$20M, Optional Optional Application without DFARS 252.234.7002
Format 7 Electronic History and Forecast File	Annually or As Required in the CDRL	Defines the time-phased historical and forecast cost data	Provides supplemental historical and time-phased information in the DoD-approved electronic XML format, by WBS.	>=\$20M, Mandatory <\$20M, Optional but Recommended

Figure 1-2 IPMR Formats 1-7

2.0 Application of the DID by Contract Type.

2.1 IPMR Application on Cost or Incentive Contracts Valued at Greater Than or Equal to \$20M.

Overall, the IPMR DID is intended to be applied completely and not tailored unless as specified within the DID or Figures 1-1 and 1-2 for format applicability. Section 2.3.2 identified the DID tailoring options available. Generally for programs above \$20M, this is the only tailoring recommended. Additional tailoring, if any, should be coordinated with the Service/Agency EVM Focal Point.

2.2 IPMR Application on Cost or Incentive Contracts Valued at Less Than \$20M.

If an EVM reporting requirement is applied on cost or incentive contracts valued at less than \$20M tailoring may be more flexible than for contracts required to comply with ANSI/EIA-748. IPMR Formats 1, 5, and 6 are recommended and variance analysis can be scaled down to include the top 5 or 10 variances, instead of the top 15. Variance analysis for just the current period is also an option. The level of reporting is dependent on the contract risk regardless of value.

2.3 IPMR Application Guidance for Firm-Fixed-Price (FFP) Contracts.

Only the Milestone Decision Authority (MDA) can grant a waiver allowing application of EVM to a FFP contract (see DODI 5000.02 Enclosure 5). Once granted, only the minimal EVM requirements necessary to provide the Government team with the desired visibility into program performance should be applied. Since cost exposure is minimized in a FFP environment, the Government may elect to receive only Format 6 in order to manage schedule risk. In addition to the tailoring guidance described in the preceding paragraphs, the following guidance should aid in tailoring the IPMR for FFP contracts. Note: No waiver is required for Format 6 without the Defense Federal Acquisition Regulation Supplement (DFARS) 252.234-7002 requirement.

2.3.1 Formats 1 and 2. The contractor may wish to preserve the company's competitive edge for future contracts by not divulging the costs (and therefore profit margin) of an FFP contract. The Government may consider allowing the contractor to report Format 1 and 2 internal costs by labor hours (not dollars), and may further roll up reporting to a high level of WBS reporting. Note: Reporting of labor hours would preclude inclusion of material dollars on either format. Alternatively, the Government may consider performance reporting at the price level (fees included) for Formats 1 and 2. Under this option, the contractor develops a cost to price factor and applies it evenly across all data in all reporting periods. The CDRL should specify that independent checks of the correct application of this factor be conducted at various points throughout the contract. The CDRL should also specify that the cost to price factor be baselined, uniformly applied, and not modified during execution, in order to prevent front loading or restriction of actual costs to the capped price level.

2.3.2 Format 3. This format is optional for FFP contracts, but may be required when there is a high potential for significant changes in requirements or sequence of activities. It may be important for the Program Management Office (PMO) to understand the changes to time phased resources in the baseline.

2.3.3 Format 4. This format is optional on FFP contracts. In some instances, the contractor may feel that visibility into Format 4 hours and Format 2 dollars could infringe upon their competitive advantage. In cases where Formats 1 or 2 are requested in hours, it may be appropriate to request the staffing forecast in Format 4. Usually, technical risk is low on FFP contracts. Schedule risk is greater, often driven by staffing availability.

2.3.4 Format 5. In addition to the standard recommendations for selection of significant elements, the Government should consider the nature of the contract work and the rationale for applying EVM to the FFP contract. Completion of the business case analysis should help the Program Manager (PM) target the risky elements of the contract for variance reporting.

Format 5 may even be considered optional if the contractor and Government agree on alternate methods of understanding performance, e.g., weekly team status meetings, online access to contractor internal reports, statused assembly or line of balance schedules. Note: Format 5 section 3.6.7 is still required if the remainder of Format 5 is tailored. The Format 6 (IMS) narrative is contained in section 3.6.7 and is applicable for a fixed-price contract.

2.3.5 Format 6 (IMS). Generally, Format 6 is applicable to fixed-price contracts with deliverables. The Government typically must manage the schedule risks of the program. See IPMR DID 2.8.2.

2.3.5.1 IMS Application Guidance Where the IPMR is not Applicable. The IPMR CDRL Format 6 submission should focus on the requirements needed for schedule management. These schedules contain an integrated network of tasks, subtasks, activities, and milestones with sufficient logic and durations to perform the SOW. The IMS is developed by the contractor in conjunction with the contract WBS and if applicable, the Integrated Master Plan (IMP).

The IMS is intended to show “how” and “when” the IMP is accomplished. It should be an extension of the information contained within the IMP or high-level program plan; reflecting the events, significant accomplishments, and criteria identified in the IMP. The network should determine the flow of the IMS.

The complexity factors apply to tailoring of Format 6. The risk inherent to the program should be the prime consideration for tailoring of the IMS. Factors include:

- Is the scope schedule driven? Generally, effort dependent upon discrete milestones may indicate the need for Format 6 (IMS) requirement.
- What is the risk to the Government? Generally, a high risk to the Government of delivery indicates the need for Format 6.
- What is the type of work? Studies, prototypes, and best efforts without formal deliveries are types of effort that DO NOT indicate the need for an IMS.

Format 6 (IMS) is reported consistent with Formats 1-5.

2.3.5.2 Applying the IMS without the IPMR Requirement. IPMR paragraph 2.8.2 is a unique paragraph that is typically omitted unless it is applicable. DODI 5000.02 allows the IMS to be applied without the DFARS 231.252-7002 EVM requirement. The IPMR DID merged the IMS into a single DID with the legacy CPR. Accordingly, this paragraph defines the only paragraphs applicable if the DFARS does not apply. In this special situation the remainder of the DID is eliminated except the referenced paragraphs.

3.0 Tailoring the IPMR DID in the CDRL, DD 1423-1.

3.1 Mandatory Specifications.

3.1.1 IPMR DID 3.5.1 Format 4 Units.

This section calls for the CDRL to specify the units reportable in Format 4. The options are hours, equivalent people, or total headcount. Hours is defined as the total hours charged/forecasted to be charged to the contract. Equivalent people are the total hours divided by the hours available in the contractor's accounting month. Total headcount is defined as the total number of people charging the contract regardless of the magnitude of their support (e.g. part-time, full-time).

3.1.2 IPMR DID 3.5.1.5 Format 4 Significant Changes.

The CDRL must define thresholds for reporting Format 4 staffing changes. This may be linked with the IPMR DID, section 3.4.2.2, defining the Format 3 significant changes requiring reporting in Format 5. It is recommended that a 5% threshold be specified in the CDRL for significant changes in the staffing profile.

3.1.3 IPMR DID 3.6.10.2.1 Format 5 Variance Analysis Thresholds.

Variance analysis thresholds are required to be established. These are the current, cumulative, and at-complete thresholds that define the reportable WBS elements pool from which the up to 15 WBS elements are selected. The recommended thresholds are:

Current Month Cost and Schedule Variances	+/- \$50K and 10%
Cumulative Cost and Schedule Variances	+/- \$100K and 5%
At Complete Variances (BAC-EAC)	+/- \$250K and 5%

Alternately, the thresholds may be different for positive variances and negative variances. Also, thresholds should be reviewed at program events to determine if they are still appropriate for that phase of the program. For example, the sample thresholds may be too restrictive on an ACAT I at 60% complete. If the Government does not specify a threshold, the contractor shall apply internal threshold requirements and notify the Government in the first IPMR submission.

3.1.4 IPMR DID 3.7.1.3.6.4.

The CDRL must specify the frequency of the Schedule Risk Assessment (SRA) reporting. As a minimum, it is required before an Integrated Baseline Review (IBR), an Over Target Baseline/Over Target Schedule (OTB/OTS), or Single Point Adjustments (SPA), if any. It is recommended the Government consider linking the SRA requirement to the baseline detail planning cycles, if any.

3.2 Optional Tailoring Guidance for the IPMR. This section is organized by DD Form 1423-1 block instructions for blocks 10, 12, and 13, and followed by format specific instructions for block 16.

3.2.1 Block 10 (Frequency): Enter the frequency of the report. The IPMR should be delivered no less frequently than monthly. (NOTE: If the contractor is using weekly EVM, weekly performance data may be provided as an adjunct to the submission of the full report. Weekly earned value data is for internal labor only and may be reported on Format 1. The contractor and Government should discuss data availability and delivery and tailor the CDRL, as appropriate.)

IPMR paragraph 2.5.2 The IPMR reporting frequency for Format 7 default is annually. Optionally, the CDRL may define more frequent reporting such as monthly or quarterly in Block 10.

3.2.2 Block 12 (Date of first submission): Enter “See Block 16” and describe further in Block 16. The first submission is due within 12 working days after the end of the second full accounting period following the contract authority to proceed (ATP).

3.2.3 Block 13 (Date of subsequent submissions): Enter “See Block 16” and describe further in Block 16. The IPMR DID specifies delivery of the IPMR no later than 12 working days after the end of the contractor’s accounting period. The default for negotiations should be 12 working days. This requirement may be tailored through contract negotiations to allow submission as late as 17 working days, provided that the contractor and Government agree that the program complexity and/or integration of subcontractor and vendor performance data warrants additional time and would yield more accurate performance data. Contractor justification should include reporting date integration as the primary reason for needing additional time. Contractors may also elect to attach subcontractor IPMRs and/or reference this analysis in the prime contractor’s Format 5 for reporting to the Government in order to gain time efficiencies and meet submission dates.

Note: Lagging subcontractor costs, if applicable, are not preferred. It is recommended that all subcontractor costs be reported within the same fiscal month, if practical.

Flash Report: A flash report is an optional quick-look of advanced assessment of schedule and cost information before the final delivery. It omits Format 5 and, if desired by the Government and agreed to by the contractor, the CDRL may specify that Format 1 (and optionally Formats 2, 3, 4 and 6) be delivered as flash data within 7 working days with the remaining formats delivered no later than 17 working days. Flash reports may be used to determine the reportable variances under the Government selection process. The term “Flash” indicates preliminary information that does not need to match the final submission values. The Extensible Markup Language (XML) submission will not include the flash data; the flash report is in contractor format and specified in the CDRL.

Final submission: Final submission should be specified within Block 16. Typically this is specified when the last significant milestone/deliverable as defined by the contract has been achieved and remaining risk areas have been mitigated with program office agreement/acknowledgement.

3.2.4 Block 16: This block is used to tailor the requirements of the DID. Tailoring can include: Format 1 reporting levels, required formats, reporting frequencies, designation of time periods for Formats 3 and 4, variance reporting thresholds, and delivery options. These are described below in more detail.

3.2.4.1 General Format Tailoring.

3.2.4.1.1 Security Requirements. IPMR DID paragraph 2.3. All IPMR requirements for delivery and marking are subject to security requirements unique to the contract. If required, the CDRL must specify security requirements that supersede DID requirements.

3.2.4.1.2 Scope contained in IPMR. The IPMR DID section 2.7 allows for limited technical scope to be reported. Examples include an IPMR specific to a Contract Line Item Number (CLIN) or applicable Task Orders on an ID/IQ type contract. The default with no specification is the complete contractual scope shall be included in the IPMR submission.

3.2.4.1.3 Dollars and Hours Reporting. IPMR paragraph 2.2.1. The default IPMR reporting (non- Format 4) is in dollars. Optionally, a separate Format 1-4, 5, and 7 may be required in hours. If a separate hours based Format 1 is required, the CDRL will specify the basis for variance analysis in Format 5 (hours or dollars).

3.2.4.1.4 Human Readable Format. IPMR DID section 2.2.3 allows for the Government to require human –readable IPMR submissions for Formats 1-4, in addition to the XML format.

3.2.4.1.5 Subcontractor IPMR Submissions. Optionally, IPMR DID sections 2.4, 3.7.1.1, and 3.8.2 allow for the Government to receive subcontractor IPMR reports either directly from the subcontractor or through the Prime contractor. This requirement may be specific to one format (e.g. IMS Format 6) or any combination of IPMR formats.

3.2.4.2 Format 1 Reporting Levels. IPMR DID paragraph 2.1.1.1. The default level of XML reporting is the reporting level usually defined by MIL-STD-881. Alternatively, the CDRL may specify that the XML reporting is below the WBS reporting level and may be as low as the contractor defined control account level. Normally lower level control account reporting option, if selected, should be supplemented by a WBS dictionary at the same level to understand the control account title and scope. Note that the control account level, when applicable, is obtained at no additional cost to the

Government. Lower level reporting, if applicable, is to support additional Government analysis and does not require variance analysis at this level of reporting.

3.2.4.3 Format 1 General and Administrative (G&A) and Cost of Money (COM) Levels.

IPMR DID paragraphs 3.2.4.2/3.2.4.3. The default requirement is the contractor may choose to report G&A and COM as add or non-add.; i.e. WBS costs may include G&A and/or COM. The Government may specify G&A and/or COM to be reported as add or non-add. Typically with a Cost and Software Date Reporting (CSDR) requirement, G&A and COM are reported as non-add and the WBS totals include G&A and COM.

3.2.4.4 Format 3 Tailoring – Definition of “Significant.”

IPMR DID paragraph 3.4.2.2. The Format 3 significant changes should be defined in the CDRL. For example, the Government may require that the “other” line be limited to 30% or less of the ending Performance Measurement Baseline (PMB) value for any period. If the Government does not specify in the CDRL, the contractor will define the meaning of “significant” for reporting Format 3 changes.

3.2.4.5 Designation of Time Periods for IPMR Formats 3 & 4.

The IPMR DID requires the contractor to complete IPMR Formats 3 & 4, columns 10 through 14, by specified periods or periodic increments, as negotiated with the procuring activity. Format 3 and 4 time periods are specified in the CDRL. Typically, the CDRL specifies that the next six months are separately identified, followed by either quarterly, six month or annual increments to complete. If desired, specify that the Formats 3 and 4 projections be broken out by month until the end of the contract in the electronic format.

Note: If the human readable submission is required, and then the last column should be defined as the remaining periods to reconcile with the total column. The following paragraph provides an example of how the report periods might be specified in the CDRL.

EXAMPLE: Formats 3 and 4 shall contain projections by month for columns 4-9, then by three-month periods for columns 10-11, then by 12-month periods for the next two subsequent periods (columns 12 and 13), and the remainder of the contract for the last period (column 14).

3.2.4.6 Format 4 Tailoring.

3.2.4.6.1 Format 4 Reporting Units.

The Government may specify the reporting units to be in hours, equivalent people or total headcount. If not specified, equivalent people is the default unit specified in the DID.

3.2.4.6.2 Format 4 Structure.

The IPMR default is the Format 4 reporting structure shall equal Format 2. The Government may optionally define an alternate structure for Format 4.

3.2.4.7 Format 5 Tailoring.

All requirements for Format 5 section 3.6.1 elements contained in the IPMR DID (DI-MGMT-81861A) are retained.

3.2.4.7.1 Cost and Schedule Contents.

3.2.4.7.1.1 Contents. All required cost and schedule variance analysis should contain (identify and describe each):

- Type and Magnitude Of Variance
- Explanation of root cause of the variance
- Cost and Schedule Impact on Dependent WBS Elements
- Effect on Total Contract
- Corrective Actions Taken or Planned and status on corrective action closure

The Government should require variance analysis to be limited to 15 WBS elements, except for short term trends. The contractor submits Format 5 in the contractor's native electronic format. Formal or informal feedback to the contractor on a regular basis leads to continued improvement in the quality of the Format 5. The CDRL should be explicit as to how the Government is notified of the variance pool reportable, and optionally how the Government will notify the contractor of the reportable variance to the 15 WBS elements.

Block 16 should include a statement that cost and schedule variance analysis thresholds be reviewed periodically (normally semiannually) to determine if they continue to meet the Government's information needs. If they do not, the thresholds should be changed at no cost to the Government. The Government may specify thresholds that determine the reportable variance pool.

3.2.4.7.1.2 Percentage or Dollar Thresholds. Select variances to be analyzed based on percentage or dollar thresholds, or a combination of both. For example, all current month, cumulative or at-completion variances +/- 10% may be selected for analysis. If selecting variances based on dollar thresholds, specify the variances as plus or minus some dollar amount, e.g., +/- \$25K. The dollar amount selected should be appropriate for the value of the effort involved. A variation of this method is to select variances based on both percentage and dollar thresholds. For example, all current, cumulative or at-completion variances +/- 10% and +/- \$50K may be selected for analysis. The thresholds should be reviewed periodically to ensure they continue to provide a reasonable amount of useful information.

3.2.4.7.1.3 Reportable Variance Selection. The IPMR DID generally limits the number of formal variance analyses to 15 WBS Elements. In some cases, the thresholds established may identify more than 15 potential variances reportable. In these instances, there are two methods to determine which 15 variances will be addressed in Format 5.

The first option allows for the customer to choose which of the variances breaching the threshold will receive formal analysis. The second option allows for the contractor to determine which 15 of the variances breaching the threshold will be documented. The CDRL may also provide for a combination of these two methods.

3.2.4.7.1.3.1 Government Selection Method of Identification of Reportable Variances. The contractor notifies the Government of which reportable WBS elements exceeded the

threshold for the previous month. Once the Government has reviewed this performance data, it selects specific WBS elements for variance analysis by the contractor in the following month. This method may be the most efficient since the Government can pinpoint areas to be analyzed. It is also the most flexible because there may be some months when a review of the performance data yields few or insignificant variance analysis candidates. Note: The Government selection the previous month will be used instead of the contractor's thresholds for the following month. The contractor the following month reports the 15 WBS elements identified by the Government without regard to the threshold. The dates for the notification and then the Government select should be specified in the CDRL in days before the IPMR submission date or contractor accounting close.

3.2.4.7.1.3.2 Contractor Method for identification of Reportable Variances.

This method only applies if specific variances are not identified by the Government. The contractor is required to submit a total of 15 WBS Element variances.

3.2.4.7.1.3.3 The determination of the 15 is a multi-step process. The default method in the DID is described below and is generally recommended.

- 1) Select and rank the variances by current month schedule variances. Pick the top three in dollar value.
- 2) Select and rank the variances by current month cost variances. Pick the top three in dollar value.
- 3) Select and rank the variances by cumulative schedule variances. Pick the top three in dollar value.
- 4) Select and rank the variances by cumulative cost variances. Pick the top three in dollar value.
- 5) Select and rank the variances by at-complete variances. Pick the top three in dollar value.
- 6) Re-sort the 15 variances above by WBS. A WBS that exceeds multiple categories simultaneously, counts as one WBS variance toward the 15 total. :
- 7) Are 15 identified? If not, the contractor may define additional variances to total 15 reportable.

Note: The Government may define a different contractor variance identification process. Examples may be to require the top five current cost and schedule variances while letting the contractor address the remaining five variances for cumulative and at-complete based upon their own criteria.

3.2.4.7.2 Definition of "Temporary" regarding Additional Variance Analysis. The Government may define a time period restriction for the contractor to be required to report additional variance analysis. The intent is that additional variance analysis defined in section 3.6.10.2.4.4 of the IPMR DID is meant to cover emerging trends. The recommendation is that this be limited to six months or less.

3.2.4.7.3 IPMR paragraph 3.6.10.2.4.6 allows for the Government reduction of variances that are reportable. This paragraph is typically not invoked in the initial contract and the paragraph is used in the last 20% of the contract performance.

3.2.4.8 Format 6 Tailoring.

3.2.4.8.1 Current Driving Path. The IPMR DID section 3.7.1.3.5.8 allows the Government to define the driving path for analysis. The default value is the next program event which is recommended for most programs.

3.2.4.8.2 Schedule Risk Assessment (SRA) Tailoring.

3.2.4.8.2.1 SRA Timing. The IMS DID contains a requirement for the SRA. It is to be completed in accordance with the CDRL requirements (which can be used to tailor DID requirements) and in conjunction with the Integrated Baseline Review (IBR), if applicable. The SRA should be completed on a recurring basis at key points in a development contract, for example, semi-annually, and/or prior to selected critical milestones like Preliminary Design Review (PDR), Critical Design Review (CDR), etc. Low-Rate Initial Production (LRIP) contracts may only need to have an SRA performed at the start of the contract. The DID also requires an SRA to be accomplished whenever an SPA is requested to ensure an executable plan.

3.2.4.8.2.2 SRA Individual Estimates. Section 3.7.1.3.6 of the IPMR DID requires individual three-point estimates to be developed for tasks/activities identified as the primary, secondary, and tertiary driving paths. The Government may define additional paths that require individual estimates. This can be done in the CDRL; however this is usually agreed to via email at the time an SRA is required.

3.2.4.8.3 Government Required IMS Fields. The Government may define in the CDRL any unique fields the contractor must populate. Examples are Level of Effort and Planning Packages.

3.2.4.8.4 Subcontractor Statusing. Sections 3.7.1.1 and 3.7.1.2 address IMS statusing and integration of the subcontractor tasks. The Government may define if the prime is required to report an IMS status date consistent with the subcontractor's. This is especially important if the Government requires reporting of the subcontractor IMS directly to the Government. It is recommended that the prime and subcontractor status consistently for a realistic critical path.

3.2.4.8.5 Level of Effort (LOE) in Format 6.

Level of effort (LOE) activities may be included or excluded in the network, as appropriate. This determination should be made based on contractor standard procedures. LOE activities may never drive the critical path, and this can be avoided by including LOE activities on the IMS without network logic. If LOE activities are included within the IMS, they are clearly identified as such and defined in the Data Dictionary.

3.2.4.9 Format 7 Tailoring. Format 7 is required at the same level as Format 1 reporting. Optionally, the Government may define reporting at a lower level, e.g the Control Account level unique to Format 7.

4.0 IPMR DID Intent Clarification

4.1 Introduction. In general, the DID is a high level document. The objective of this section is to expand on the intent of the DID with more discussion and examples. This guide is not intended to change the IPMR DID and may be referred to by the contractor or Government only to help understand the DID requirements. Specific clarifications, referenced by IPMR DID paragraph number, are detailed below.

4.2 Clarification Regarding XML Level of Reporting.

4.2.1 IPMR DID Reference.

“2.1.1.1. Formats 1-4 shall be submitted using the DoD-approved Cost XML guideline and schema. Formats 1-4 shall be submitted in whole units (no decimals) in the XML. Format 1 data in XML shall be provided at the reporting level per the guidance in section 2.2.2, unless specified at a lower level, such as to the control account level, in the CDRL.”

4.2.2 Intent Regarding Level of Reporting. The intent is that reporting level is linked to the lowest level WBS as reported in Format 1. Optionally, reporting is permitted to be defined at the control account level or above. Specifically “such as” was not intended to apply below the control account level.

4.2.3 Intent Regarding Whole Units. Format 4 is one potential exception to the whole units requirement within the XML. Specifically the option for reporting in equivalent months may be reported to the first decimal.

4.3 Clarification Regarding Application of MIL-STD-881 and the Reporting Level.

4.3.1 IPMR DID Reference.

“3.2 The submission of Format 1 data shall utilize a product-oriented WBS at the level established by tailoring the appropriate MIL-STD-881 (current version in use at time of contract award) appendix by the Program Office and approved by an office(s) designated by OSD policy. WBS levels below MIL-STD-881 are defined by the contractor and reported in accordance with the DoD Cost XML Guideline.”

4.3.2 Intent Regarding Application of MIL-STD-881. The MIL-STD-881 provides flexibility for the Government to define a reportable WBS that is meaningful to the program. The typical contract level WBS is limited to level 3 or 4. The applicable MIL-STD-881 appendix depends on the program specifics. The following example from MIL-STD-881 illustrates three different contracts that use the same program appendix. The Prime Mission Aircraft program has the four levels defined in Appendix A as its contract WBS. Another contract could be the Fire Control at level 4 of Appendix A. The first number in the right box is the contract WBS level and the number in parentheses is the implied Prime Mission WBS level. This creates a 1-4 level Fire Control Subsystem WBS. The box on the left illustrates the same process for the Aircrew Training Device contract. All three contracts have WBSs to level 3 or 4 and are consistent with MIL-STD-881. Accordingly, the levels below the illustration are defined by the contractor.

Appendix B is used for the additional WBS structure for subsystems.

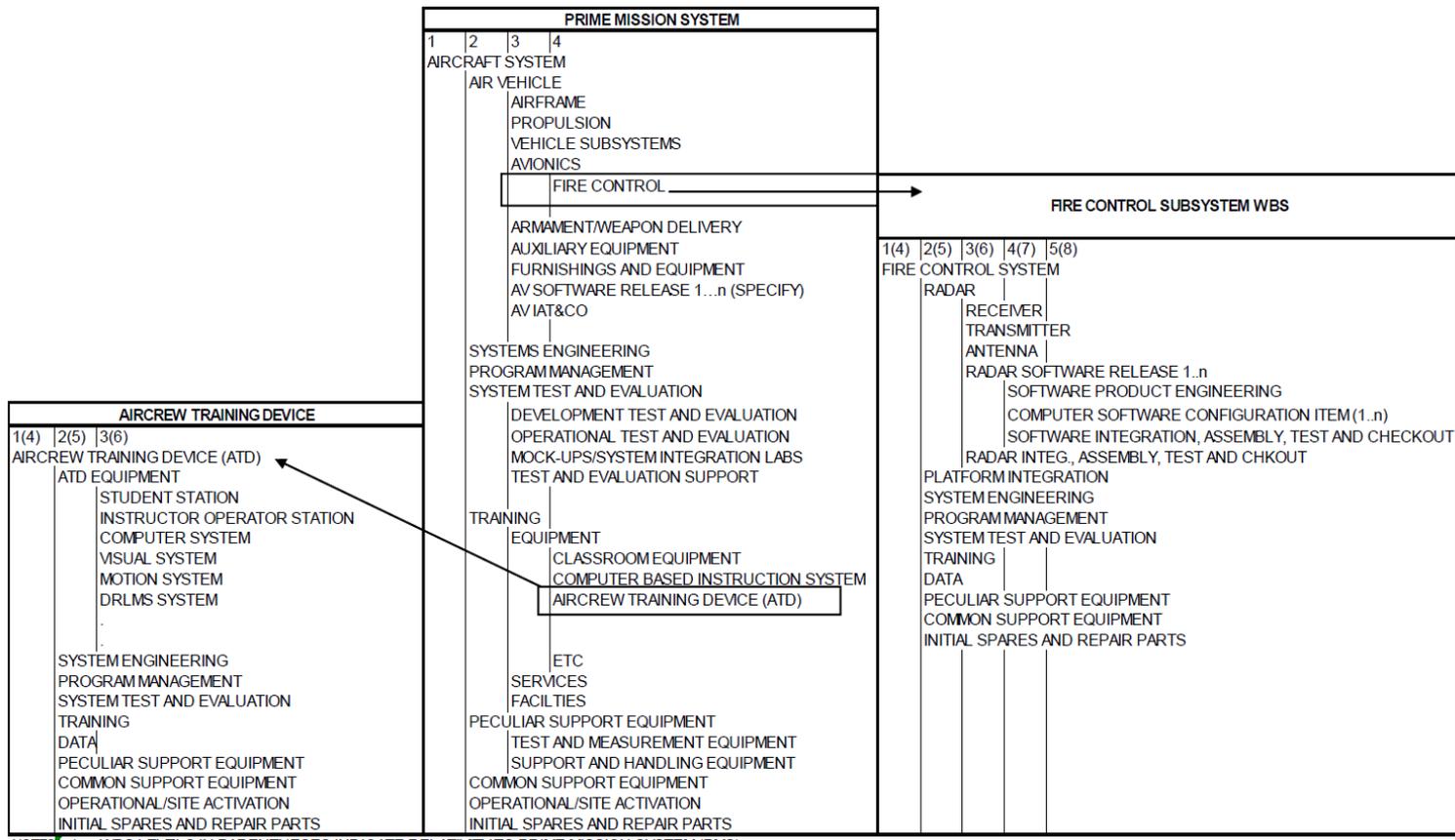


Figure 3-1 Applying MIL-STD-881 and Reporting Level

MIL-STD-881C
APPENDIX B

B.3 WORK BREAKDOWN STRUCTURE LEVELS

WBS #	Level 1	Level 2	Level 3	Level 4
1.0	Electronic System			
1.1		Prime Mission Product (PMP) 1...n (Specify)		
1.1.1			PMP Subsystem 1...n (Specify)	
1.1.1.1				PMP Subsystem Hardware 1...n
1.1.1.2				PMP Subsystem Software Release 1...n
1.1.1.3				Subsystem Integration, Assembly, Test and Checkout
1.1.2			PMP Software Release 1...n (Specify)	
1.1.2.1				Software Product Engineering
1.1.2.2				Computer Software Configuration Item (CSCI) 1...n
1.1.2.3				Subsystem Integration, Assembly, Test and Checkout
1.1.3				PMP Integration, Assembly, Test and Checkout
1.2		Platform Integration, Assembly, Test and Checkout		
1.3		System Engineering		
1.4		Program Management		
1.5		System Test and Evaluation		
1.5.1			Development Test and Evaluation	

Figure 3-2 MIL-STD-881 Appendix B

MIL-STD-881C
APPENDIX L

L.3 DEFINITIONS OF COMMON ELEMENTS

L.3.1 Integration, Assembly, Test and Checkout. In those instances in which an integration, assembly, test, and checkout element is used (Appendices A through K), this element includes all effort of technical and functional activities associated with the design, development, and production of mating surfaces, structures, equipment, parts, materials, and software required to assemble the Level 3 equipment (hardware/software) elements into a Level 2 mission equipment (hardware/ software) as a whole and not directly part of any other individual Level 3 element. (Reference Section L.4.1 for space systems application)

Figure 3-3 MIL-STD-881 Appendix L Screenshot

4.3.3 Steps to Develop a Contract WBS within an Overall Program Structure:

- 1) Determine the program appendix that is applicable (e.g. Aircraft, Sea, etc.).
- 2) Find the WBS level that describes the contract top level (e.g. Aircraft System or Fire Control).
- 3) Determine if there are three to four levels in the appendix below this level.
- 4) If not, use Appendix B and Appendix L to define additional levels.
- 5) Stop developing the contract level WBS when three to four WBS levels have been defined. Allow the contractor to define additional levels.
- 6) The WBS is defined pre-draft Request for Proposal and included in the RFP by the Government.

Note: For ACAT I programs with a CSDR requirement, the WBS is approved via the CSDR Program Plan.

4.4 Clarification Regarding Contractual Changes and the use of AUW and UB.

4.4.1 IPMR DID References.

“3.2.1.3. Estimated Cost of Authorized, Unpriced Work (AUW). Authorized, Unpriced Work is approved work scope that has not been definitized. The total dollar value (excluding fee or profit) of AUW shall be entered in Block 5.c.

3.2.1.3.1. AUW value shall represent the Procuring Contracting Officer’s (PCO) best estimate of the authorized scope for inclusion in the baseline.

3.2.1.3.2. AUW can never be a negative value. For effort de-scoped and not yet reflected in the Contract Budget Base (CBB), report the estimated value in Format 5 (see 3.6.11.3).”

“3.2.4.4. Undistributed Budget (UB). Enter the amount of budget applicable to contract effort that has not yet been distributed to WBS elements at or below the reporting level. Budgets that have been distributed to WBS elements at or below the specified reporting level shall be included in the total budgets shown for the WBS elements in Block 8.a and shall not be shown as UB. UB characteristics:

- UB is used to accommodate temporary situations where time constraints prevent adequate budget planning or where contract effort can only be defined in very general terms.*
- UB shall not be used as a substitute for adequate contract planning. Budgets shall be allocated within the PMB to responsible organizations at the earliest possible time, preferably within the next reporting period.*
- UB can never be negative. If a contractual de-scope change occurs and the effort has not been removed from time-phased PMB, the amount shall be discussed in Format 5. Discuss when the de-scope will be removed from the PMB and placed into UB.*

Enter in Column (15) of Block 8.d the EAC for the scope of work represented by the UB in Column (14) of Block 8.d. Enter in Column (16) of Block 8.d any variance. The content of UB and changes in the period shall be described in Format 5.”

4.4.2 Intent Regarding Contractual Changes and AUW/UB.

The contract budget base (CBB) and the Performance Measurement Baseline (PMB) must represent the entire scope of work and the EVM budgets must be sufficient to represent a realistic plan to capture all the work scope on contract. The EVM budgets are applied and planned without the constraint of funding or related not-to-exceed (NTE) limitations. Just as incrementally funded contracts should establish an EVM baseline for the entire scope of work, scope for Authorized Unpriced Work (AUW) should be fully planned and a baseline established for all authorized efforts. The value of AUW is the value of the scope that was coordinated between the contractor and the Program Office, and authorized by the Procuring Contracting Officer (PCO).

If a letter contract or other unpriced action contains an NTE, it will usually be for all the work. However, some unpriced actions may not have an NTE. Any unpriced action can generally be funded only to the lesser of the funding available and necessary to cover the contractor's requirements for funds prior to definitization or 50% of the estimated cost of the definitive contract. Additionally, a contractor's proposed budget for all the work can exceed the NTE (i.e., the contractor projects taking a loss on the contract), since the NTE is a limit on contract price, not on the contractor's costs.

The EVM baseline should reflect all authorized work scope, whether or not the contractor thinks that the funding will cover all of those costs. Engineering Change Proposals (ECPs) (and change orders generally) often do not include NTE prices, but the CBB should be timely revised to include the full scope of the change, regardless of whether there is an NTE or definitized price.

4.4.2.1 Determining the AUW Value Authorized by the Government.

Examples illustrating the relationship between the scope with the amount planned in AUW.

Example #1:

Authorization for engineering change proposal (ECP) 1234 based on a cost estimate of \$100M and subject to an NTE of \$22M at cost. There was no scope tied to the \$22M NTE; the authorization referenced the ECP 1234 scope as a whole. Therefore, the contractor adds \$100M to AUW consistent with the ECP total scope and updates the PMB.

In the first example above, \$22M is the amount of funding made available for the contractor to expend. The scope of work is the entire ECP. Therefore, the baselined budgets align with the entire ECP scope, valued at \$100M. Funding limitations still exist, so the contractor cannot spend more than \$22M on the ECP.

Example #2:

Authorization for ECP 1234 long-lead parts WBS XYZ only, subject to an NTE of \$2M, where the long-lead was proposed at \$2M. AUW is increased \$2M, consistent with the long-lead authorization.

The AUW change (scope, schedule, and budget) is added to UB until the effort is allocated to MR or the time-phased PMB. At all times the scope and budget are moved together.

4.4.2.2 Determining the AUW/UB Value When Work is Removed from the Contract.

Contractual scope that is removed is typically called a de-scope. De-scoped work often begins with a contractual action called a stop-work order. It may be for the total contract or more typically a subcomponent. The difficulty of this scenario is that stop-work order rarely has budget associated with it. The contractor must then stop work immediately on that portion of effort.

At this point, the CBB and total allocated budget (TAB) should be reduced. Theoretically, all of the scope and budget are removed in the same month that the de-scope is processed. In this case, there would be no disconnect between the contract value and the EVM baseline.

However, in practice, when a de-scope occurs the contractor may need one or two accounting cycles to remove the budget for the work from the baseline. In this case, the CBB temporarily will be greater than the Negotiated Contract Cost. AUW and UB cannot be negative at any time. The proper procedure is to report the stop-work in Format 5 discussions until the work has been removed from the PMB.

When de-scoping, the amount of budget returned should be based on several factors. BCWP to date is the key factor. The reason is that the scope of work is being removed and BCWP represents the scope of work completed. Percent complete is defined as $BCWP/BAC$. Work remaining is defined as $BAC - \text{cumulative } BCWP$. The work remaining represents the deleted scope.

The primary de-scope value is the technical work. However, MR is created from negotiated cost; therefore, the proposed de-scope value may additionally need to include MR. The percentage of MR included in the de-scope should be based on the percentage that was removed to establish the baseline for the deleted work.

Likewise, ETC is based on the contractor's assessment of remaining work. The de-scoped value generally is not affected by ETC. The negotiated value of the original scope and work performed to date are the primary drivers.

4.5 Clarification Regarding Allocation and Use of Management Reserve.

4.5.1 IPMR DID References.

"IPMR DID 3.2.4.6. Management Reserve (MR). MR is an amount of the overall contract budget held for management control purposes and for unplanned events. MR characteristics:

- MR shall not be used to offset cost variances.
- MR shall never be a negative value (Column (14) of Block 8.f).
- If MR includes the contractor and subcontractor amounts together, the breakout shall be discussed in Format 5.

Enter in Column (14) of Block 8.f, the total amount of budget identified as MR as of the end of the current reporting period. The value shown as MR in Formats 1, 2, and 3 shall agree. Amounts from MR

applied to WBS elements during the reporting period shall be listed in Block 6.b of Format 3 and explained in Format 5.”

4.5.2 Intent Regarding Allocation and Use of Management Reserve.

All MR transactions must be based on scope. MR is created at the time of baseline establishment through aggressive targets at the time-phased PMB level. Ultimately, it is reallocated to unplanned scope in the time-phased PMB. MR cannot be used for cost overruns.

4.6 Clarification Regarding Format 3 Significant Changes.

4.6.1 IPMR DID References.

“3.4.2.2. Block 6.b - Baseline Changes Authorized During Report Period. In Block 6.b, list all significant baseline changes that have occurred during the reporting period in their respective timeframes in columns (2)-(16).

- This list shall include the contract changes and AUW authorized during the reporting period, transactions involving MR and UB, and any significant re-phasing of budgets.
- All significant authorized baseline changes shall be listed individually, whether priced or unpriced; all other changes shall be summarized and titled “Other.”
- Block 6.b, when added to Block 6.a, equals Block 6.c.
- The term “significant” will be defined in the CDRL or determined by the contractor if undefined.
- The reasons for the significant changes shall be discussed in Format 5.”

4.6.2 Intent Regarding Format 3 Significant Changes.

It is recommended the Government define the term “significant” in the CDRL. The following guidance should be considered:

The term “Significant” is defined as: Individual authorized changes must be sufficiently defined to ensure that the “Other” line is less than or equal to 30% of the ending PMB for any period, Format 5 Variance Analysis.

4.7 Clarification Regarding Format 5 Variance Analysis.

4.7.1 IPMR DID References.

“3.6.10. Cost and Schedule Analysis.

3.6.10.1. General. Explain variances that exceed specified thresholds which are reportable. Explanations of variances shall clearly identify the nature of the problem, significant reasons for cost or schedule variances (i.e., root cause), effects on immediate tasks, impacts on the total contract, and the corrective actions taken or planned.

3.6.10.1.1. Corrective Actions. Include explanations of the progress status of the corrective actions if not completed during the reporting period and/or cannot be accomplished as planned.

3.6.10.1.2. Cost Variances. Identify separately amounts attributable to the following:

- Base labor rate changes from amounts applicable to hours worked,
- Material price changes from amounts applicable to material usage,
- Overhead rate changes from amounts applicable to overhead base changes or overhead allocation changes.

3.6.10.1.3. Schedule Variances. Include the change in total float of the critical task(s) for the associated WBS elements and the impact to the contract driving and/or critical path(s), if any.

3.6.10.2. Variance Analysis Selection and Reporting Overview.

The purpose of this section is to implement a process of selecting candidates for variance reporting. This is accomplished first by the contractor establishing a pool of potential variances and then using a defined approach to limit the actual number of reportable variances to 15. The Government or the contractor shall select the 15 reportable variances based on the criteria specified below.

3.6.10.2.1. Setting Variance Analysis Thresholds. The Government may specify the reporting variance thresholds; they will be defined in the CDRL. Without Government specified thresholds, the contractor shall apply thresholds consistent with the company-documented ANSI/EIA-748 compliant process, as applicable. Thresholds shall be based on both cost and schedule, including at completion. Variance analysis thresholds shall be reviewed periodically and adjusted as necessary to ensure they continue to provide appropriate insight and visibility to the Government. Thresholds shall not be changed without Government approval.

3.6.10.2.2. Variance Analysis Reporting Level. The Reporting level for variance analyses is determined according to the MIL-STD-881 appendix applicable to the type of acquisition. Each month the variances for the reporting level (see 2.2.2) are compared to the thresholds and WBS elements at the reporting level that exceed the threshold are selected as candidates for the pool of reportable variances that are reportable. The pool consists of those elements that have exceeded the threshold for cost, schedule, or at completion variances, if any.

3.6.10.2.3. Determining the Pool of Reportable Variances. WBS elements are candidates for selection for variance analysis reporting if they are at the reporting level and they exceed the variance analysis threshold. If this pool of reportable variances yields fewer than 15 variances, only these variance analyses shall be required. If this pool yields more than 15 variances, the process described in section 3.6.10.3 applies.

3.6.10.2.4. Reportable Variance Analysis. The reporting variance categories are:

- Current and cumulative for cost;
- Current and cumulative for schedule;
- At completion variances.

The categories are used to determine the pool of WBS elements in IPMR DID section 3.6.10.2.3 above. The Government may decide on an alternate method of the selection of 15 variance report categories or reported WBS elements.

3.6.10.2.4.1. Reporting Variances with Government Selection. The Government may select the reportable variances based on information such as contract risk. This Government notification may be informally provided to the contractor and does not require a CDRL modification. Notification will be provided no later than 10 working days prior to the CDRL delivery date. The total WBS variances reported will be limited to a maximum of 15, except where noted in 3.6.10.2.4.3 and 3.6.10.2.4.4.

3.6.10.2.4.2. Reporting Variances without Government Selection. If the Government does not select the 15 reportable WBS variances, then the contractor's pool of reportable variances, per 3.6.10.3, will be used for reportable variance selection. If fewer than 15 WBS elements exceed the threshold, then the number that actually exceeds is reportable. If more than 15 have been identified, see sections 3.6.10.3.2.1 and 3.6.10.3.2.2 for filtering to the 15 that are reportable.

3.6.10.2.4.2.1. Top Three Variances by Category. Where 15 or more reportable variances exist from the variance pool, the contractor shall select the top three variances in each category, based on dollar value of reportable WBSs, that exceeds the established threshold for current schedule (3) and cost (3); cumulative schedule (3) and cost (3); and at completion (3), as applicable.

3.6.10.2.4.2.2. Multiple Categories. If a reportable WBS has variances that exceed two or more categories simultaneously, then the WBS variances count against each individual category. A total of 15 WBSs are required, where applicable, according to the threshold (see 3.6.10.2.2). The WBS that exceeds multiple categories only counts as one WBS variance. The purpose of the categories is to make sure the different elements are addressed. Once the top three variances in each category are met, then the contractor shall determine the additional variances to reach the 15 WBS variances required, where applicable.

3.6.10.2.4.3. Contractor Additional Analysis. The contractor is not prohibited from providing more analysis than required to cover an emerging trend. This additional variance information is intended to be temporary per the emerging trend aspect.

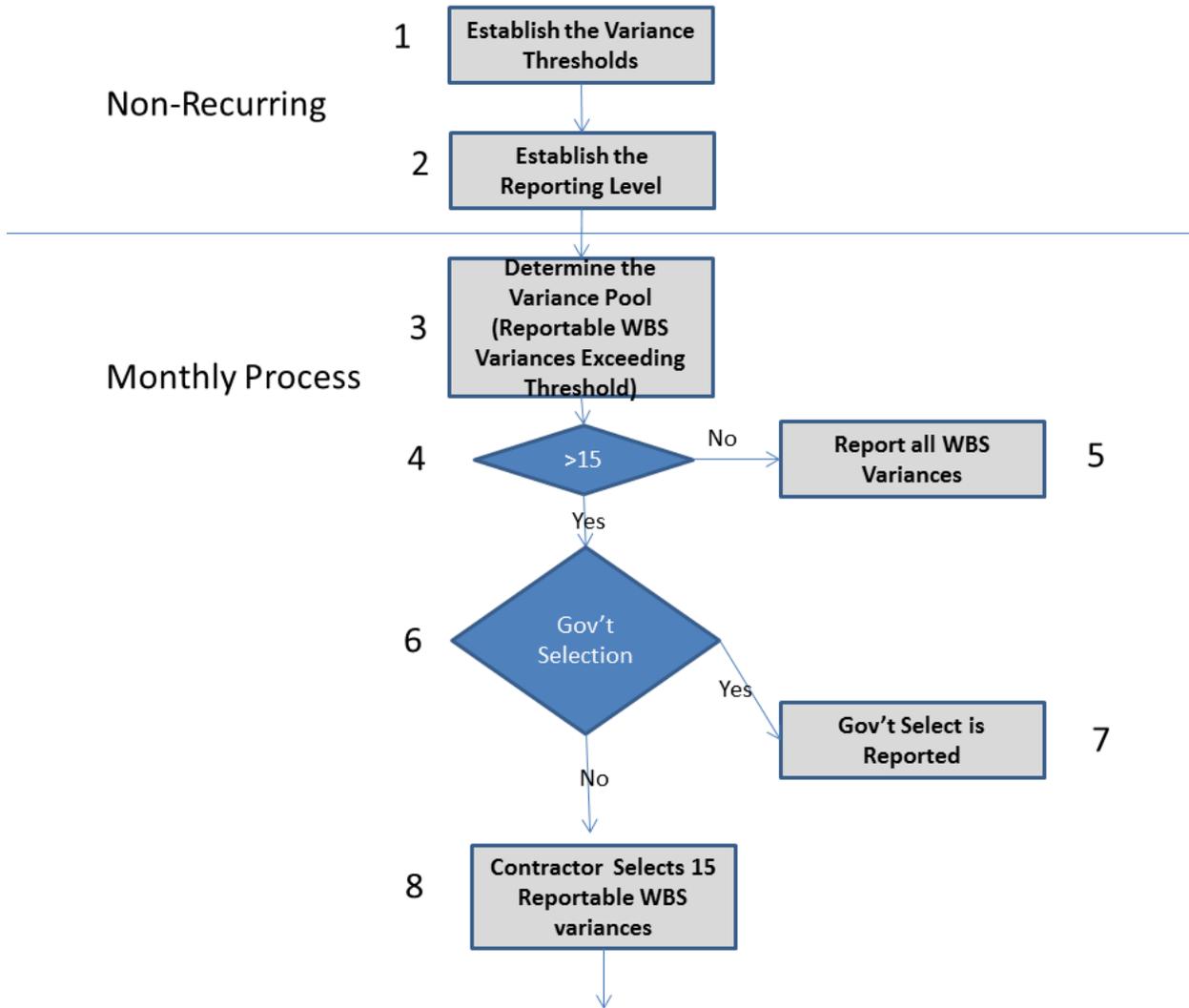
3.6.10.2.4.4. Government Additional Analysis. The Government is not prohibited from requesting more analysis than required by the 15 WBS elements, per 3.6.10.2.3, to cover an emerging or significant trend. This additional variance information is intended to be temporary.

3.6.10.2.4.5. CDRL Modification for Additional Analysis. Since the additional analysis covered in sections 3.6.10.3.3 and 3.6.10.3.4 is intended to be temporary, a formal modification to the reporting requirement defined in the CDRL is not required. Notification is recommended via e-mail.

3.6.10.2.4.6. Reduction of Variances. The Government may reduce the amount of variance reporting, at any time, if it is deemed no longer meaningful. This shall be done via a change to the CDRL."

4.7.2 Intent Regarding Format 5 Variance Analysis.

The objective of the revised variance analysis process is best described in the flowchart below:



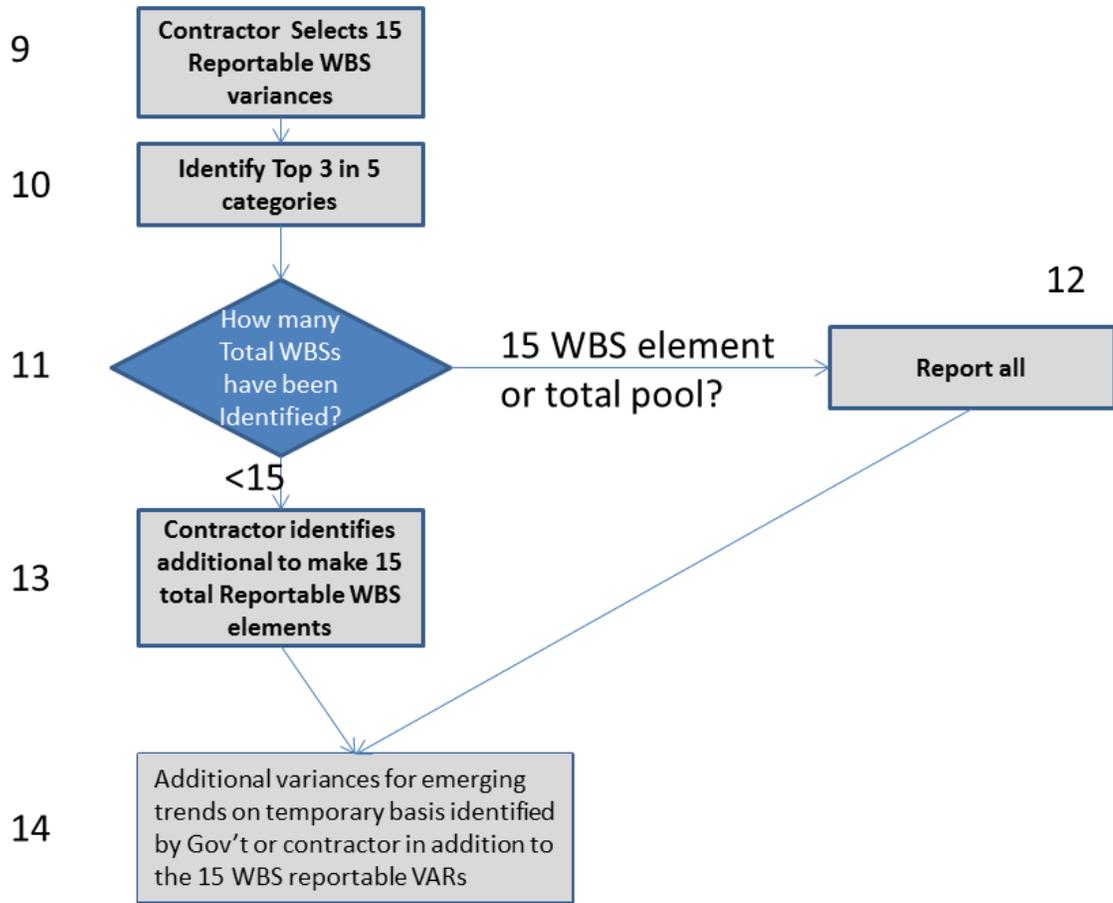


Figure 3-4 Variance Analysis Decision Tree

- 1) Determining the variance threshold. This is typically defined by the Government in the CDRL. A threshold determines the “trigger” when a reportable WBS must be reported. For example, a common threshold for cumulative cost and schedule is 10% and \$100K. A variance of 10% and 50K would not be reportable. Use caution and avoid “OR” type thresholds. For example, with a threshold of 10% or \$100K, a variance of 10% and \$1K would be reportable. Cost and percentage thresholds should be reviewed periodically, recommended at program events. For example, a threshold of 10% and \$100K may be adjusted to 5% and \$250K after 50% on an ACAT I program.

- 2) Determine the reporting level. This is typically defined by the Government in the CDRL by MIL-STD-881, as tailored in the contract. The reporting level WBS performance is compared against the threshold each month to determine the potential variances that are reportable. Steps 1-2 are typically non-recurring and should be specified in the CDRL.
- 3) The first monthly step is to compare the current month, cumulative, and at-complete variances for reportable WBSs against the threshold. This determines the pool that may be reportable in the following steps. Note: If the Government defines the 15 WBSs in the previous month that are reportable in the current month, then these WBSs are reportable without regard to the threshold and skip to Step 6.
- 4) Did Step 3 determine more than 15 reportable WBSs?
- 5) If less than 15 reportable WBSs exceed a threshold, then all the variances are reported in the current period.
- 6) Optional step. The Government may select some or all of the reportable WBSs to include in the analysis. The WBSs the Government selects count as a component of the 15 total. The Government may specify these are the only reportable WBSs and the process stops at Step 7. Alternately the Government may select a subset and require the contractor to follow the remaining steps to select the remainder WBS variances to report. The Government option to select reportable WBS variance is based on the previous month's reporting. If this option is selected no later than the 2nd day after the contractor's month end (with a 12-day reporting requirement), the Government notifies the contractor which WBSs require reporting. The contractor reports these WBSs without regard to the thresholds. If the contractor selection option is exercised, the contractor uses the current thresholds to determine the potential pool and then selects the reportable variances following the process as described in IPMR DID 3.6.10.2.4.2.1 and 3.6.10.2.4.2.2. The following diagram summarizes this process.

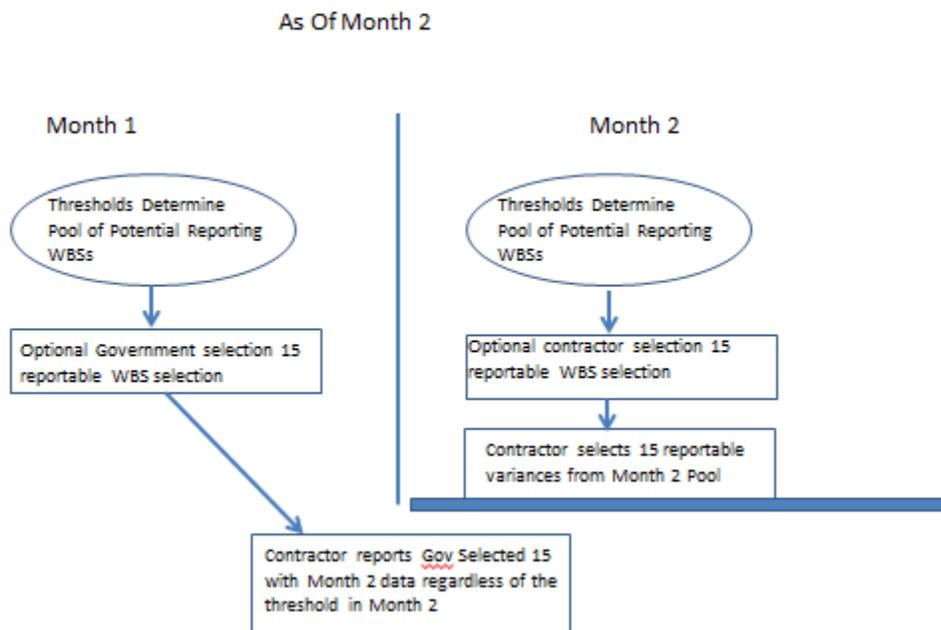


Figure 3-5 Government/Contractor WBS Element Selection

- 7) If more than 15 reportable WBSs exceed a threshold, then additional steps are required to select the 15 WBS elements.
- 8) Optional step depending on Step 7. Remaining example assumes the Government did not specify any in Step 6.
- 9) Contractor selection of reportable WBS variances. Create a table with all of the reportable WBSs exceeding the threshold at the lowest reportable WBS level. Sort the table by current period schedule variance and write down the top three WBSs in dollar magnitude (either positive or negative). Re-sort by current period cost variance and write down the top three WBSs in dollar magnitude (either positive or negative). Re-sort by cumulative schedule and repeat. Re-sort by cumulative cost and repeat. Re-sort by VAC and repeat. The output WBS elements that comprise the top three in each category. However, it is likely that there are duplicates in the list. For example,

Reportable WBS Variance \$M										
	CURSV		CURCV		CUMSV		CUMCV		VAC	
WBS 1	-1000	*	-2000	*	-100000	*	-200000	*	1000000	*

Figure 3-6

The same WBS may exceed multiple categories simultaneously, as shown above; the asterisk indicates this element exceeded a threshold. This WBS exceeded all five categories in the

current month. Therefore, when duplicates have been consolidated, there may be less than 15 WBS Elements.

- 10) Does Step 9 result in more than 15 WBS elements? This will rarely be the case as typically, a WBS element will trigger several thresholds simultaneously.
- 11) If 15 have been identified, then all 15 are reported.
- 12) If less than 15 are reported, according to the top 3 in 5 category approach, then the contractor selects additional reporting WBSs that exceeded a threshold that are added to equal 15 total. The intent of this process is just to make sure that the overall variance process with limits is addressing current, cumulative and at-complete variances that are meaningful to the trends.

4.8 Clarification Regarding the Word “Temporary.”

4.8.1 IPMR DID References. Section 3.6.10.2.4.3 Contractor Additional Analysis. “The Government is not prohibited from requesting more analysis than required by the 15 WBS elements to cover an emerging or significant trend. This additional variance information is intended to be temporary.”

4.8.2 Intent Regarding the Word “Temporary.” The word temporary is meant to not burden the contractor with significant additional analysis. Temporary in this section is limited to six months or less. The Government has the ability under section 3.6.10.2.4.1 to select the variances, and if the emerging trend has long term interest it may be selected under that process.

4.9 Clarification Regarding IMS Status Date.

4.9.1 IPMR DID Reference.

3.7.1.1. Content Required. “The IMS shall include, at a minimum, discrete tasks/activities, consistent with all authorized work, and relationships necessary for successful contract completion. Subcontractor discrete work shall be incorporated as tasks within the prime IMS at a level necessary for a realistic critical path. The IMS is a single integrated network that also contains significant external interfaces, Government furnished equipment/information/property and relationship dependencies for the entire contractual effort.”

3.7.1.2. IMS Status. “The IMS shall be statused according to the contractor’s accounting month and aligned with Format 1 reporting month, as applicable.”

4.9.2 Intent Regarding IMS Format 6 Subcontractor Statusing Requirements.

IPMR Paragraph 3.7.1.1.1 requires subcontractor discrete work be incorporated at a level necessary to establish a realistic critical path. Section 3.7.1.2 requires the IMS to be statused as of the prime contractor’s accounting month, which would include the subcontractor tasks. Also, the Government may require subcontractor IMSs to be submitted through the prime or directly to the Government.

It is recommended that subcontractors with an EVM flowdown status twice, once according to their accounting calendar and once according to the prime’s accounting calendar, if different. As a minimum, the prime would have to work with the subcontractor to provide current status for the parallel tasks that are in the prime IMS. It is also recommended that, if the Government requires, the subcontractor IMS reports should specify the status date. All schedules on the same status date support comparison

and development of the program critical path(s). However, subcontractor schedules not statused on the subcontractor date will not integrate with the subcontractor's Formats 1-5 and 7.

4.10 Clarification Regarding IMS Format 6 Relationship.

4.10.1 IPMR DID Reference.

"IPMR 3.7.1.3.5.6. Relationships/Dependencies. Identify how predecessor and successor tasks/activities and milestones are logically linked. All non-constrained discrete tasks/activities/milestones, except the start and end of the contract or interim delivery, shall have at least one predecessor and successor."

4.10.2 Intent Regarding IMS Format 6 Relationship Clarifications.

The objective is all schedule activities/tasks and milestones have a predecessor and/or successor. Tasks that are not constrained or interim deliveries must have both a predecessor and successor. Unless there is a non-PMB scope task, such as customer or other contract milestone, there are no schedule "orphans," without PMO concurrence. This requirement excludes LOE, which may be in the IMS.

4.11 Clarification Regarding Constraints (with examples from common IMS tools).

4.11.1 IPMR DID References.

"IPMR 3.7.2.3. Constraints. Constraints are limits applied to network start and finish dates (e.g., "Finish No Later Than," "Finish On or Before"). Constraints shall be minimized if they affect "late" dates or both "late and early" dates. The constraints that require justification include:

- *All constraints that affect "late" dates or both "late and early" dates as defined by the schedule tool.*
- *All constraints that affect "early" dates beyond 20 working days from the current status period.*

Constraints requiring justification shall be justified in an associated notes field provided within the scheduling software application. If a coding field is used for justification of constraints the definitions shall be defined in the data dictionary (see 3.7.3)."

4.11.2 Intent Regarding Constraints with Examples by Common Project Scheduling Tools.

Constraints do not allow the schedule to project future events based on the logical relationships in the IMS. Hard constraints, those that prevent tasks from slipping, especially limit the IMS's forecasting ability. Common schedule tools allow a constraint override capability. This "hard" definition only applies to constraints that are prohibiting in operation the forecast schedule from reflecting schedule slips. Hard constraints must include a note field that explains why the constraint was used. This helps users of the IMS to understand which scenarios may cause distorted forecast dates or the assumptions under which the schedule is based. Rationale and constrained dates for these tasks should not change often, if at all. Therefore, maintenance of these tasks should be minimal.

Constrained tasks within 20 days of the status date do not require justification. Some scheduling tools automatically apply hard constraints to tasks that are not statused properly and "ride the status date." Also, some organizations will constrain tasks for the upcoming status cycle as a method to reflect

resource availability. These should be a minority of the current tasks in each delivery and would have little impact on downstream activities. The tables below show the constraint wording and description for the most common scheduling tools. The constraints affecting the late dates are the ones that require justification. The table below lists typical constraints that may impact the movement of the late dates.

MS Project Specifics

Must Start/Finish On	Affects early and the late dates
Start/Finish No Later Than	Affects the late dates
Start/Finish No Earlier Than	Affects the early dates

Open Plan Specifics

On Target/Fixed Target	Affects early and the late dates
Not Later Than	Affects the late dates
Not Earlier Than	Affect the early dates

Primavera Specifics

Start/Finish On; Mandatory Start/finish	Affects early and the late dates
Start/Finish On or Before	Affects the late dates
Start/Finish On or After	Affects the early dates

Artemis Specifics

Fix Early Start/Fixed Early Finish/Fixed Late Finish/Fixed Late Start	Affects early and the late dates
Start/Finish No Later Than	Affects the late dates
Start/Finish No Earlier Than	Affects the early Dates

Figure 3-7

4.12 Clarification Regarding Baseline Dates.

4.12.1 IPMR DID References.

“3.7.1.3.5.11. Baseline Schedule. The IMS shall have baseline dates for all tasks within the PMB and those dates shall be consistent with the start and finish of the cost baseline. The baseline is typically set equal to the current schedule early dates at the time of the baseline establishment when change control is initiated.”

4.12.2 Intent of Baseline Dates.

The intent is that the baseline is set consistent with the working plan at the time of establishment. Typically, the baseline and forecast schedules are set equal at the time they are established. The word “typical” allows for the dates to vary from the early dates, but they should not be established on the late dates. The reason is that late dates automatically cause every task to be on the critical path and do not represent a sufficient working plan. The interpretation of “typical” is close to, but not necessarily equal to the early date.

4.13 Clarification Regarding Summary of IMS Field and Title Requirements.

4.13.1 IPMR DID References.

“3.7.1.3.7.3. Required IMS Fields. The following fields shall be identified as applicable and described in the Data Dictionary (see 3.7.3). The purpose is for Government understanding or usability of the IMS as an effective tool.

- 1) Control Account/Work Package. Identify effort associated with the work package or control account. This may be an individual field or via unique task identifier.
- 2) Subcontractor. Identify the tasks that are unique to the scope of a major supplier, if any. Subcontractors with an EVM flowdown shall be identified separately, if applicable.
- 3) Justification of Lead, Lag, Constraint. Provide a field that contains a summary justification of lead, Lag, or constraint. This requirement may be met with a code defined in the definition table or by individual notes on each applicable task.
- 4) Earned Value Technique (EVT). Identify the EV BCWP technique if the schedule is used to directly status the EVM tool. As a minimum, if either Level of Effort (LOE) or Planning Packages (PP) are in the schedule, they must be identified within a field.
- 5) Risk Mitigation Tasks. Items that came from the risk register and include authorized risk mitigation activities shall be identified, as applicable.
- 6) Critical Path and Driving Paths. The Critical Path and Driving Path shall be identified. These identifiers are either automatically created by the scheduling software or custom fields that indicate/flag each task on a driving or critical path.

3.7.2.1. Schedule Visibility Task (SVT). Any SVT shall be identified with the title “SVT.””

4.13.2 Intent Regarding Summary of IMS Field and Title Requirements.

It is not the intent of the DID to dictate to the contractor how to compose their schedule. However, the title or field language requirements in the DID allow the Government to filter or sort the data easily to find the required information. Fields may be combined or placed within the task name structure as long as this requirement is met. Should the task name structure or combination approaches be used, the Data Dictionary shall clearly define the components of the structure and how to filter or sort this field.

4.14 Clarification Regarding Schedule Margin.

4.14.1 IPMR DID References.

“3.7.2.4. Schedule Margin. Schedule margin is an optional technique used for insight and management of schedule risks. Schedule margin is represented by a task or tasks within the IMS with no assigned resources (budget or ETC) and is established as part of the baseline. Schedule margin shall be under the control of the contractor’s program manager. Schedule margin shall only be placed as the last task before key contractual events, significant logical integration/test milestones, end item deliverables, or contract completion. Schedule margin is associated with schedule risk as part of a formal risk management plan. Schedule margin may be directly or indirectly connected to discrete predecessor and successor activities and fall on critical paths. All schedule margin tasks shall be clearly and consistently identifiable. Significant changes to the status of schedule margin tasks and impacts to the program’s primary critical path, if any, shall be discussed in Format 5.”

4.14.2 Intent Regarding Schedule Margin.

Schedule margin tasks are intended to represent the time necessary to account for schedule risks/uncertainties. As such, schedule margin tasks are not associated with any specific scope or resources, will not be used to assess earned value performance, and are intended to improve program management’s ability to accurately plan, forecast and manage scheduled work. Schedule margin durations should represent the estimated schedule risk/uncertainty to the subsequent event/activity and be traceable to the program’s risk management system.

One common method of estimating schedule margin duration(s) is to use the results of a Schedule Risk Assessment (SRA) to identify the amount of time between the deterministic finish (calculated without the presence of schedule margin) and a more likely completion determined by the finish date at a desired probability/confidence level. Schedule margin tasks are commonly first set with the baseline and forecasted durations being equal, however baseline durations for schedule margin tasks can be as short as zero days when the tasks required to accomplish the subsequent event are already baselined to consume all of the contractual time available. Emphasis should be placed on managing performance fluctuations with float/slack or other contingency options as needed, while reserving the consumption of margin duration to model a reduction of the associated risk/uncertainty. Schedule margin may be in the critical path with discrete predecessors and successors. Sufficient internal controls should be in place to allow the program team to understand and explain any change in critical or driving paths influenced by the inclusion of schedule margin in the IMS.

The DID discusses the placement of Schedule Margin in the IMS. In tailoring schedule margin requirements, the following principles should always be maintained:

- Identifiable: Schedule margin tasks shall be clearly and consistently identifiable.

- Limited: Restricted to an appropriate number of schedule margin tasks based on managing risk to increase schedule probability.
- Duration: Schedule margin tasks should represent the planned time necessary to account for risks/uncertainties to the subsequent significant event/activity.
- Placement: Schedule margin tasks shall only be placed as the last task before contractual events, significant integration/test activities, end item deliverables, or end of contract.
- Controlled: Owned by the contractor's program manager.
- Reported: Schedule margin status is reportable in Format 5. Significant changes should be discussed including reasons for changes and any impacts to the critical path.

Note: Schedule margin, as defined, is uniquely identified as a "risk management" approach. As such, it is established to address unmitigated risks and uncertainties. Other methodologies may be used as "float management" techniques but are not considered to be schedule margin. These techniques could include the uses of expedited deadlines/constraints or a buffer task (or lag) to consume time available between the forecasted event and its contractual requirement. Unlike schedule margin tasks, techniques used with the sole purpose of "float management" should not affect downstream discrete tasks or alter the critical/driving paths.

4.15 Clarification Regarding Format 7 Reporting Level.

4.15.1 IPMR DID Reference.

IPMR DID 3.8.1 "General. Provide supplemental historical and time-phased information in the DoD-approved electronic XML format, by WBS, provided at the same level as Format 1 unless otherwise specified in the CDRL. This data is intended to enhance Government analysis beyond the information provided in Format 5."

4.15.2 Intent Regarding Format 7 Reporting Level.

The phrase, "same level as Format 1" was not intended to imply a hierarchical structure requirement. The intent is that, as a minimum, the lowest level of Format 1 data shall be the default level of Format 7 reporting.