

Department of the Interior
U.S. Geological Survey

LAND SATELLITES DATA SYSTEM (LSDS) FINANCIAL AND PERFORMANCE REPORTING REQUIREMENTS DOCUMENT

Executive Summary

The U.S. Geological Survey (USGS) and the National Aeronautics and Space Administration (NASA) partnered together to meet legal obligations to ensure Landsat data continuity. The Land Satellites Data System (LSDS) Program was developed to ensure continued capture, archival, processing, and distribution of consistently calibrated imagery of the Earth's land surface and its availability to users worldwide for use in monitoring global change, emergency response, water monitoring, and applications in scientific studies. The LSDS Program is operated and managed at the Earth Resources Observation and Science (EROS) Center in Sioux Falls, SD. On occasion, the LSDS Program funds external organizations, such as government agencies or commercial contractors (herein referred to as Suppliers) to conduct parts of the Program mission.

This document defines the data types, formats, and interface protocols in the form of tiered requirement sets. Suppliers use these tiered requirement sets to report critical financial and performance information to the LSDS Program.

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Section 1 Introduction

1.1 Background

The Land Satellites Data System (LSDS) Program manages a portfolio of Projects covering Landsat development, operations, science, and program management. Under the guidance of the LSDS Program, the Projects may engage government agencies or commercial contractors (herein referred to as Suppliers) to provide goods or services to support the LSDS mission under interagency agreements or negotiated. LSDS passes down to Suppliers an appropriate set of requirements to provide financial and performance information up to the LSDS Program at a level consistent with the Supplier's contract type, value, and mission criticality.

1.2 Purpose

This document provides detailed financial and performance reporting requirements that apply to Suppliers providing goods and services to the LSDS Program whether by interagency agreement or negotiated contract (herein referred to as Contract). Suppliers are required to provide critical information in order to support LSDS financial and performance reporting.

1.3 Scope

The Clinger-Cohen Act (CCA) of 1996 requires agencies to use a disciplined Capital Planning and Investment Control (CPIC) process to acquire, use, maintain, and dispose of Information Technology (IT). It also encourages the use of performance- and results-based management of these initiatives. The general Department of the Interior (DOI) Project management reporting guidance is based on conducting earned value analysis, which is included in section I.H. of Exhibit 300 to monitor the performance of major IT Projects, as defined in the Information Technology (IT) Capital Planning and Investment Control (CPIC) Guide (see References). In order for DOI to update CPIC business cases as accurately as possible, DOI requires the following:

- Formally adopt Earned Value Management (EVM) to measure the performance of major IT service contracts that support the major IT Projects, valued at one million dollars or more.
- New service contracts awarded to support major IT systems that fall under the defined criteria must require Suppliers to use EVM to measure performance.
- Operations where Projects do not require EVM reporting.

LSDS administers processes to report critical financial and performance information internally to the LSDS Program, as well as to other organizations in its governing hierarchy. The information includes data and calculated metrics derived from Suppliers funded by the LSDS Program. The effort required to administer this information represents a significant cost component for the Projects and ultimately the LSDS Program. To maximize Return on Investment (ROI) for this administrative cost, the LSDS Program allocated reporting requirements to three tiers. The government considers Contract type, value, and other mission criticality factors when assigning a

reporting requirement tier to a Supplier for any given Contract. The reporting scope defined in this document is subordinate to any specific reporting scope detailed in a given Supplier contract

In general, Supplier requirements are specified in a Statement of Objective (SOO) or Statement of Work (SOW) referenced in a contract, task order, or interagency agreement. These requirements may or may not specify the tier required for reporting financial and performance information. If not specified, the Supplier assumes reporting requirements are those in Tier 3: Basic Reporting. Table 1-1 characterizes the tiers with respect to reporting requirements.

Contract Characteristic	Tier 1: Full Reporting	Tier 2: Standard Reporting	Tier 3: Basic Reporting
Risk, Mission Criticality	Complex essential systems, development efforts requiring EVM	Large to medium scale Level of Effort (LOE), operations support	Small scale, well understood specialized support and administered as Firm Fixed Price (FFP) contracts
Monthly Planned Value (PV)	Captured at Project onset and subject to Integrated Baseline Reviews (IBR); updated only upon formal change request	Captured at Project onset; updated only upon formal change request	Captured at Project onset; calculated by LSDS from the original budget if not provided
Monthly Earned Value (EV)	Calculated monthly during Project status using the most appropriate EV technique	EV is set to PV (activities are LOE)	Not applicable
Monthly Actual Cost (AC)	Final value in the form of price as well as hours provided by the 15 th of each month; verified by an invoice to the Financial and Business Management System (FBMS)	Final value in the form of price as well as hours provided by the 15 th of each month; verified by an invoice to FBMS	Final value in the form of price derived from an invoice to FBMS; invoicing may not be monthly; no hours
Monthly Forecast	Updates to the forecast are required; examined and revised periodically as appropriate	Updates to the forecast are recommended; examined and revised periodically as appropriate	Forecast is set to PV
Estimate at Completion	Three approaches include Best Case, Most Likely, and Worst Case	Sum of actuals-to-date plus sum of latest revised estimate of forecasts	Calculated by LSDS using best available data
Monthly Variance Reporting	Variances appear on the Cost Performance Report 1 (CPR1) and CPR5	Variances appear in monthly status reviews with CPR5-like reports	Variances only upon request
Formatting	Microsoft Excel spreadsheets, Excel graphs, standard CPR1 / CPR4 / CPR5, and monthly status files	Standard monthly status in editable Portable Document Format (PDF) files; Microsoft Excel spreadsheets may be agreed to	None required, organizations may deliver some level of status, which may include financial information

Table 1-1. LSDS Requirements Tiers for Financial and Performance Reporting

Section 2 All Tiers: Common Interface

2.1 USGS Reporting

The U.S. Geological Survey (USGS) is required to report monthly financial status on the IT portion of CPIC activities to the DOI and Office of Management and Budget (OMB). The USGS requirement includes earned value data that represent periodic measures of acquisition status and schedule / cost performance. The earned value data are required for all CPIC IT acquisitions as documented in Circular A-11 of the Office of Management and Budget (OMB). The DOI and the USGS must comply with OMB and the Federal Acquisition Regulation (FAR) requirements related to the LSDS IT acquisition.

LSDS uses a Microsoft Excel spreadsheet to consolidate data from the multiple Projects and Suppliers. LSDS normalizes financial and performance data to produce Program-wide performance metrics to meet USGS, DOI, and CPIC requirements.

2.2 Supplier Identification Data

Prior to submission of the first monthly performance data and subsequently for approved updates, the Supplier provides summary information to the USGS Contracting Officer Representative (COR) and / or LSDS Program Controls as indicated in the Contract. The USGS COR and / or LSDS Program Controls use this information to identify data sources. Suppliers include, at a minimum, the following information:

- Organization name
- Name of contract
- Contract number
- Task order identifier where appropriate
- Name of Project
- Financial analyst contact information
- Target price
- Current reporting period

In addition, Suppliers may be supporting one or more LSDS Projects, each having several control accounts. Official control account reporting is performed at the Project Work Breakdown Structure (PWBS) Level 4 (Account); informational reporting may be requested at the PWBS Level 5 (Element).

Tier 1 and Tier 2 Suppliers provide a mapping from the Suppliers WBS to the LSDS Program Work Breakdown Structure (PgWBS). Typically, the mapping is from Supplier WBS Level 5 (Element) to LSDS PgWBS Level 4 (Account) for each account within each Project for the Contract.

The identification and WBS mapping information must be consistent with that used in the Supplier invoices.

2.3 Supplier Data Exchange

The Supplier provides an original estimate for Budget at Completion (BAC) as per "Target Price." Depending upon the reporting tier, Suppliers may be required to provide an original time phased (monthly) budget, which when summed is equal the original BAC. In the case (Tier 3) where an estimate of the monthly budget is not required, the government generates its own monthly budget from the BAC for reporting purposes.

For Tier 1 and Tier 2, Suppliers may be required to provide monthly reports of actual costs as well as forecasts of actual costs for upcoming months. Even though actual costs are officially recorded in FBMS as a result of Supplier invoicing, this FBMS information is not available in a timely fashion to support monthly reporting at the LSDS Program and Project levels.

All Supplier financial data contains approved fees as stated in the Contract. Actual costs from monthly status reports must correspond to actual Supplier invoices for reconciliation with FBMS; any discrepancies must be noted and explained in the monthly status reports. Suppliers affirm that costs provided to LSDS and USGS adhere to the generally accepted accounting procedures and that the costs conform with their organization's cost accounting standards board disclosure statement as required by OMB.

2.4 Reporting Period

Appendix A describes the Tier-level reporting requirements. Reporting requirements may be tailored for each Project and Supplier as indicated in contract terms and conditions; otherwise Tier 3 Basic Reporting is assumed.

For Tier 1 and Tier 2, the USGS and Supplier agree on the Monthly Status Review (MSR) report format and data exchange files within 30 days of contract start. The Supplier and USGS COR jointly control the format of the MSR submission and data exchange files.

Supplier data are submitted to the USGS LSDS Project Controller via email, with optional return receipt to the sender. The Supplier provides a Point of Contact (POC) to answer specific questions about the submittal.

For Tier 1 and Tier 2, all financial data are shown by current Period of Performance (POP) and cumulative from the beginning of the contract mechanism (e.g., Task Order), unless otherwise noted. The government fiscal calendar is from October 1 through September 30; Suppliers close financial reporting on September 30 and resume on October 1 in the event the Supplier's financial cycle does not align with the government fiscal year.

Section 3 Tier 1: Full Reporting

3.1 Tier 1 Full Reporting Requirements

Appendix A lists the data and metrics required by Suppliers to support Tier 1 reporting; Table 1-1 characterizes the tier with respect to reporting requirements. The Tier 1 Supplier provides EVM performance status data in dollars and hours.

At contract start, the Supplier provides a time phased budget, PV, which when summed is equal the BAC. The Supplier controls and documents all changes to the BAC.

As work proceeds, the Supplier provides AC in invoices through FBMS and in monthly reports. AC in monthly reports must correspond to actual Supplier invoice amounts, and any discrepancies are noted and explained. The Supplier is also required to provide updated forecasts to complete.

Suppliers are required to provide monthly EV figures for official PWBS Level 4 (Account) reporting. This reporting may be a summary level rollup of lower level discrete and LOE work packages. Suppliers may be requested to supply supplemental financial and performance reporting at PWBS Level 5 (Element), but is not required to explain variances at this lower level.

Financial data are shown by current fiscal period and cumulative from the beginning of the contract period of performance, unless otherwise noted.

The Supplier provided monthly and cumulative earned value data are PV, EV, AC, Estimate to Complete (ETC), Estimate at Complete (EAC), and BAC for the MSR. The Supplier provides the calculated EAC based on the EV data as per the formula list in Section 3.4.

LSDS Projects and Suppliers submit EVM data via the Contract Performance Report (CPR) formats 1, 4, and 5, which are recognized as the standard EVM reporting format by the government and industry as defined in DI-MGMT-81861 Data Item Description (DID) for Integrated Program Management Report (IPMR) (supersedes DI-MGMT-81466A). All CPR formats shall be submitted electronically in a format that is acceptable for use in the LSDS Program management systems. All CPR formats shall be in a readable digital format (e.g., PDF files are not acceptable). Supplier CPR formats may be substituted whenever they contain all of the required data elements at the specified reporting levels. The USGS COR makes the final decision of the acceptable format.

The Tier 1 Supplier provides standard CPR formats at the PWBS Level 4 (Account) as identified in Table 3-1.

Standard CPR	WBS Level	DI-MGMT-81861 IPMR Description
Format 1	Level 4 (Account)	Defines cost and schedule performance data by PWBS; defines contract data blocks used on all CPR forms
Format 4	Level 4	Defines staffing forecasts
Format 5	Level 4	Provides a narrative report used to explain variances that exceed the thresholds
Format 1	Level 5 (Element)	Defines cost and schedule performance data by PWBS

Table 3-1. Required Standard Supplier Performance Reports

In addition to the CPR formats, the Tier 1 Supplier provides time-phased graphical EV data for the MSR such as those identified in Table 3-2.

Reports	WBS Level	Description
Overall Performance Status	Level 4 (Account)	Historical, current period, and cumulative time-phased EV data
CPI and SPI Status	Level 4	Historical, current period, and cumulative variance indices
Overall Travel and ODC Status	Level 4	Historical, current period, and cumulative time-phased travel and Other Direct Costs (ODC) data

Table 3-2. Other Supplier Performance Reports

3.2 Data Submission

The Supplier provides a fiscal period calendar noting the Supplier cost reporting period. This calendar is provided at the beginning of each new government fiscal year. Financial and performance data are due by close of business the fifteenth day following month end, if the fifteenth is on a weekend, the report is due the Friday before the fifteenth. Report files are emailed concurrently to the address of record for USGS COR, LSDS Program Controls, and / or USGS LSDS CPIC Coordinator as indicated in the Contract.

3.3 Variance Reporting Thresholds

A Format 5 Variance Analysis Report (VAR) is made when one or more of the following exceed the reporting thresholds:

- Schedule variance (EV to PV)
- Cost variance (EV to actual)
- Variance at completion (BAC to EAC)

The WBS reporting levels that have schedule variances or cost variances exceeding the established thresholds are reported and indicate whether a variance is cost-related, schedule-related, or both. The VAR explains the cause of the variance by element of cost, labor, travel, or procurement (if applicable), and provides current period, cumulative, and at completion statistical data. The VAR provides a description of variance cause, its impact on the cost account and other elements of the program, and

corrective action to take. Internal program variance analysis and corrective action are formally reviewed in monthly management meetings. Informal reviews of cost and schedule variance analysis data may occur monthly or as directed depending on the nature and severity of the variance.

The default thresholds for Format 5 variance (cost and/or schedule) reporting at LSDS WBS Level 4 (Account) for the MSR are:

- Plus or minus ten percent and plus or minus \$10,000
- Color codes for Cost Performance Index (CPI) and Schedule Performance Index (SPI) values reported in the MSR use the following scale:
 - Green greater than or equal to 95 percent but less than or equal to 105 percent
 - Yellow less than 95 percent but greater than or equal to 90 percent, greater than 105 percent but less than or equal to 110 percent
 - Red less than 90 percent, greater than 110 percent
- For presentations, report the color in a new cell beside the value to improve visibility

Variance reporting thresholds can be negotiated between the Supplier and USGS Project Manager.

3.4 Contract Forecasting (ETC and EAC)

Unlike budget, which represents the cost performance target for a specific effort, EAC represents the funds or dollars required to accomplish the effort associated with the approved scope of work. The EAC is composed of the AC to date plus an estimate of the cost of the remaining work based on the performance to date and knowledgeable projections of the cost of work yet to be accomplished. The remaining work is known as the ETC.

For the duration of the Contract, the Supplier reports the EAC using three different forecast techniques and uses the following nomenclature for each EAC.

1. A manual bottom-up estimate:

$$EAC_{(best\ case)} = AC + ETC_{(Bottom\ up\ estimate\ of\ the\ work\ remaining)}$$

2. A calculated estimate based on the cumulative CPI:

$$EAC_{(most\ likely)} = AC + \frac{(BAC - EV_{cum})}{CPI_{cum}}$$

3. A calculated estimate based on the cumulative CPI and cumulative SPI:

$$EAC_{(worst\ case)} = AC + \frac{(BAC - EV_{cum})}{(CPI_{cum} * SPI_{cum})}$$

Section 4 Tier 2: Standard Reporting

4.1 Tier 2 Standard Reporting Requirements

Appendix A lists the data and metrics required by Suppliers to support Tier 2 reporting; Table 1-1 characterizes the tier with respect to reporting requirements. The Tier 2 Supplier provides, at a minimum, standard performance status data in dollars.

At contract start, the Supplier provides a time phased budget, PV, which when summed is equal the BAC. The Supplier controls and documents all changes to the BAC.

As work proceeds, the Supplier provides AC in invoices through FBMS and in monthly reports. AC in monthly reports must correspond to actual Supplier invoice amounts, and any discrepancies noted and explained. The Tier 2 Supplier updates the forecast periodically to capture significant changes (e.g., procurements moving to the right of the schedule).

Supplier figures are rolled up from the work package level to a Project summary. Tier 2 Suppliers do not report EV; the government sets EV equal to PV for integration with other government reporting as necessary.

Financial data are shown by current fiscal period and cumulative from the beginning of Contract POP, unless otherwise noted.

The key Supplier provided monthly and cumulative EV cost data are PV, AC, ETC, EAC, and BAC for the Contract MSR. The specific formula for EAC is:

$$EAC_{(best\ case)} = AC + ETC_{(Bottom\ up\ estimate\ of\ the\ work\ remaining)}$$

4.2 Data Submission

The Supplier provides a fiscal calendar noting the Supplier cost reporting period. This calendar is provided at the beginning of each new government fiscal year. Financial and performance data are due by close of business the fifteenth day following month end; if the fifteenth is on a weekend, the report is due the Friday before the fifteenth. Report files are emailed concurrently to the address of record for USGS COR, LSDS Program Controls, and / or USGS LSDS CPIC Coordinator as indicated in the contract.

4.3 Variance Reporting Thresholds

A VAR is made when one or more of the following exceed the reporting thresholds established by USGS:

- Cost variance (PV to AC)
- Variance at completion (BAC to EAC)

The WBS reporting levels that have cost variances exceeding the established thresholds are reported. The VAR explains the cause of the variance by element of cost, labor, travel, or procurement (if applicable), and provides current period, cumulative, and at completion statistical data. The VAR provides a description of variance cause, its impact on the cost account and other elements of the Program, and corrective action to take. Internal program variance analysis and corrective action are formally reviewed in monthly management meetings. Informal reviews of cost and schedule variance analysis data may occur monthly or as directed depending on the nature and severity of the variance.

The Supplier submits CPR format 5 such as variance reporting at the contract MSR. The USGS COR makes the final decision of the acceptable format.

The default thresholds for color codes of cost variance values (year-to-date actual divided by year-to-date budget) use the following scale:

- Plus or minus 10 percent and plus or minus \$10,000
- Color codes for CPI values reported in the MSR use the following scale:
 - Green greater than or equal to 95 percent but less than or equal to 105 percent
 - Yellow less than 95 percent but greater than or equal to 90 percent, greater than 105 percent but less than or equal to 110 percent
 - Red less than 90 percent, greater than 110 percent
- For presentations, report the color in a new cell beside the value to improve visibility

Variance reporting thresholds can be negotiated between the Supplier and USGS COR.

The Tier 2 Supplier provides reports for the MSR such as those identified in Table 4-1.

Reports	WBS Level	Description
Overall Performance Status	Level 4 (Account)	Historical, current period and cumulative year-to-date actual cost and budget with variance; BAC and EAC with variance
CPI Status	Level 4	Historical, current period and cumulative variance indices
Overall Travel and ODC Status	Level 4	Historical, current period and cumulative time-phased travel and ODC data

Table 4-1. Tier 2 Standard Performance Reports

Section 5 Tier 3: Basic Reporting

5.1 Tier 3 Basic Reporting Requirements

Appendix A lists the data and metrics required by Suppliers to support Tier 3 reporting; Table 1-1 characterizes the tier with respect to reporting requirements.

At contract start, the Supplier provides an original estimate for BAC. Unless otherwise provided, the government calculates a time phased budget, PV, which when summed is equal to the BAC.

As work proceeds, the Supplier provides AC in invoices through FBMS. It is desired that the Supplier provide AC with periodic status reports. In the case where AC is not provided in status reports, the government calculates AC from invoices after the fact.

5.2 Data Submission

If the Supplier provided AC with periodic status reports, financial data provided by close of business the fifteenth day following month end is included in official government reporting for the month. Status report files are emailed concurrently to the address of record for the USGS COR, EROS LSDS Project Lead, and LSDS Program Controls as indicated in the Contract. The submitter may request a return receipt or receipt confirmation email from USGS LSDS Program Controls.

Appendix A Reporting Requirements Mapped to Tiers

The terminology and processes used in this document are consistent with that of “A Guide to the Project Management Body of Knowledge (PMBOK®) – Fourth Edition”.

Rqmt Number	Requirement Statement	R → Required d → Desired n/a → Not Applicable	Tier 1: Full	Tier 2: Standard	Tier 3: Basic
10.00.005	Reporting for Projects shall be based upon Accounts associated to the Project.		R	R	d
20.10.001	Reporting shall include the Budget at Completion (BAC) provided as an original estimate of the amount budgeted.		R	R	R
20.10.002	Reporting shall reflect any approved BAC changes.		R	R	R
20.10.004	Reporting shall include the monthly Actual Cost (AC) provided as an actual invoiced price of work accomplished. <i>AC is also known as Actual Cost of Work Performed (ACWP).</i>		R	R	d
20.10.005	Reporting shall include the cumulative AC.		R	R	d
20.10.010	Reporting shall include the Planned Value (PV). <i>PV is also known as Budgeted Cost for Work Scheduled (BCWS).</i>		R	R	d
20.10.016	Reporting shall provide forecasted value of the cost of work to be done monthly going forward from the last AC.		R	R	d
20.10.017	Reporting shall compute Estimate to Complete (ETC).		R	R	n/a
20.10.020	Reporting shall include the Earned Value (EV) provided as a current estimated value of the work accomplished. <i>EV is also known as Budgeted Cost for Work Performed (BCWP).</i>		R	n/a	n/a
20.10.022	Reporting shall include the cumulative EV.		R	n/a	n/a
20.20.010	Reporting shall include the current period Cost Variance (CV).		R	R	d
20.20.011	Reporting shall include the cumulative CV.		R	R	d
20.20.014	Reporting shall include the current period Cost Variance %.		R	d	d
20.20.015	Reporting shall include the cumulative Cost Variance %.		R	d	d
20.20.016	Reporting shall include the current period Cost Performance Index (CPI).		R	R	d
20.20.017	Reporting shall include the cumulative CPI.		R	d	d
20.20.020	Reporting shall include the current period Schedule Variance (SV).		R	n/a	n/a
20.20.021	Reporting shall include the cumulative SV.		R	n/a	n/a
20.20.024	Reporting shall include the current period Schedule Variance.		R	n/a	n/a
20.20.025	Reporting shall include the cumulative Schedule Variance %.		R	n/a	n/a
20.20.026	Reporting shall include the current period Schedule Performance Index (SPI).		R	n/a	n/a
20.20.027	Reporting shall include the cumulative SPI.		R	n/a	n/a
20.20.040	Reporting shall include a calculated Estimate at Completion (EAC) per the formula under the conditions given in the appropriate Tier Subsection of this document.		R	R	n/a
20.20.045	Reporting shall include a bottoms-up estimate for the EAC.		R	R	d
20.20.050	Reporting shall include the Variance at Completion (VAC).		R	R	d

Rqmt Number	Requirement Statement	Tier 1: Full	Tier 2: Standard	Tier 3: Basic
20.20.055	Reporting shall include the Variance at Completion (VAC).	R	R	d
20.20.070	Reporting shall include the To Complete Performance Index (TCPI).	R	d	d

Table A-1. Requirements

References

Please see http://landsat.usgs.gov/tools_acronyms_ALL.php for a list of acronyms.

ANSI/PMI 99-001-2008. A Guide to the Project Management Body of Knowledge (PMBOK® Guide) – Fourth Edition.