National Aeronautics and Space Administration

NASA HQ and APL EVM Surveillance: Advantages of Joint Surveillance

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Abstract

EVM Surveillance at NASA began almost 5 years ago when the NASA CFO approved it as part of the GAO Corrective Action Plan (CAP). It is having an impact on the credibility of the project performance data produced for informed decision making. With more than 50 reports completed at four NASA Centers and three NASA Suppliers, the NASA HQ EVM team has the experience to appreciate the value of working jointly on surveillance.

The NASA Agency Surveillance Plan has several Guiding Principles and key among them is ***Principle 2: Minimize disruption to the projects*** *and that "****Joint surveillance between the agency and the in-house/supplier project is encouraged.****" The workings of joint surveillance vary among supplier/in-house projects.*

This joint presentation with APL and NASA HQ explores the advantages of joint surveillance in practice. Enabling practices include:

- *Providing a check and balance to support corrective actions.*
- *Navigating the interpretation of DECM Test Metrics and aligning the documentation*
- *Establishing a partnership*
- *Developing a close working relationship of trust with the project*
- *Decreasing the learning curve to understanding the project by having the data collected by the supplier surveillance subject matter expert*
- *Working toward consensus and maintaining a tone of civility to reduce the often-perceived adversarial nature of the relationship*

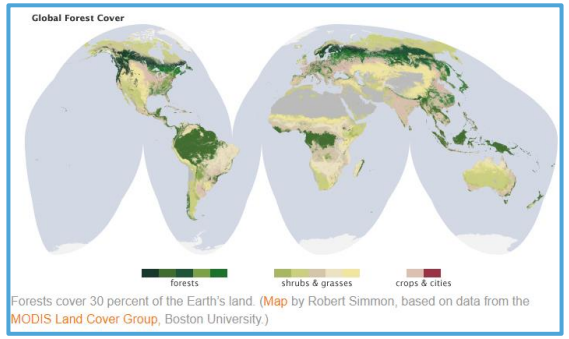
Contents

This joint presentation with APL and NASA HQ explores the advantages of joint surveillance in practice. Enabling practices include:

- Providing a Check and Balance to Support Corrective Actions
- Learning and Interpreting DECM Test Metrics Jointly
- Establishing a Partnership
- Developing a Trust Relationship with Project
- Working Toward Consensus

Providing a Check and Balance to Support Corrective Actions

- Introduces a third-party to provide an objective perspective.
- Enforced rigor and adherence to the DECM Test Metrics.
- Helps keep perspective on the overall system health and not see mistake the forest for the trees; that is focus on the DECM test in lieu of the EVM Standard Guideline

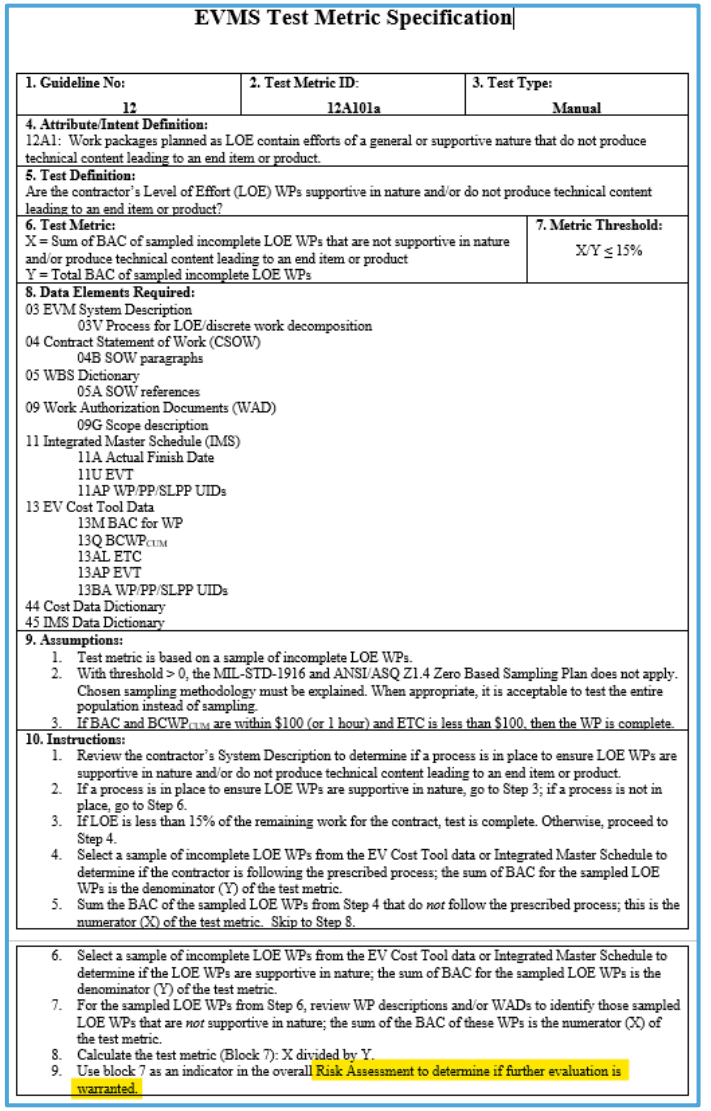


Principle 2: Minimize disruption to the projects

https://earthobservatory.nasa.gov/features/ForestCarbon

Learning and Interpreting the DECM Test Metrics

- The DECM Test Metrics are designed to be objective for transparency and repeatability as well as /interpretation.
- Joint surveillance allows for a more accurate assessment and interpretation of risk by involving multiple perspectives.
- Minimal disruption to the project teams due to the familiarity of the system of the Supplier/Center surveillance team member.



EVMS Test Metric Specification

1. Guideline No:	2. Test Metric ID:	3. Test Type:
12	12A101a	Manual

4. Attribute/Intent Definition:
12A1: Work packages planned as LOE contain efforts of a general or supportive nature that do not produce technical content leading to an end item or product.

5. Test Definition:
Are the contractor's Level of Effort (LOE) WPs supportive in nature and/or do not produce technical content leading to an end item or product?

6. Test Metric:
X = Sum of BAC of sampled incomplete LOE WPs that are not supportive in nature and/or produce technical content leading to an end item or product
Y = Total BAC of sampled incomplete LOE WPs

7. Metric Threshold:
X/Y ≤ 15%

8. Data Elements Required:
03 EVM System Description
- 03V Process for LOE/discrete work decomposition

04 Contract Statement of Work (CSOW)
- 04B SOW paragraphs

05 WBS Dictionary
- 05A SOW references

09 Work Authorization Documents (WAD)
- 09G Scope description

11 Integrated Master Schedule (IMS)
- 11A Actual Finish Date
- 11U EVT
- 11AP WP/PP/SLPP UIDs

13 EV Cost Tool Data
- 13M BAC for WP
- 13Q $BCWP_{CUM}$
- 13AL ETC
- 13AP EVT
- 13BA WP/PP/SLPP UIDs

44 Cost Data Dictionary
45 IMS Data Dictionary

9. Assumptions:
1. Test metric is based on a sample of incomplete LOE WPs.
2. With threshold > 0, the MIL-STD-1916 and ANSI/ASQ Z1.4 Zero Based Sampling Plan does not apply. Chosen sampling methodology must be explained. When appropriate, it is acceptable to test the entire population instead of sampling.
3. If BAC and $BCWP_{CUM}$ are within $100 (or 1 hour) and ETC is less than $100, then the WP is complete.

10. Instructions:
1. Review the contractor's System Description to determine if a process is in place to ensure LOE WPs are supportive in nature and/or do not produce technical content leading to an end item or product.
2. If a process is in place to ensure LOE WPs are supportive in nature, go to Step 3; if a process is not in place, go to Step 6.
3. If LOE is less than 15% of the remaining work for the contract, test is complete. Otherwise, proceed to Step 4.
4. Select a sample of incomplete LOE WPs from the EV Cost Tool data or Integrated Master Schedule to determine if the contractor is following the prescribed process; the sum of BAC for the sampled LOE WPs is the denominator (Y) of the test metric.
5. Sum the BAC of the sampled LOE WPs from Step 4 that do *not* follow the prescribed process; this is the numerator (X) of the test metric. Skip to Step 8.
6. Select a sample of incomplete LOE WPs from the EV Cost Tool data or Integrated Master Schedule to determine if the LOE WPs are supportive in nature; the sum of BAC for the sampled LOE WPs is the denominator (Y) of the test metric.
7. For the sampled LOE WPs from Step 6, review WP descriptions and/or WADs to identify those sampled LOE WPs that are *not* supportive in nature; the sum of the BAC of these WPs is the numerator (X) of the test metric.
8. Calculate the test metric (Block 7): X divided by Y.
9. Use block 7 as an indicator in the overall Risk Assessment to determine if further evaluation is warranted.

NASA DECM Test Metric Practitioner Forum is held quarterly. Upcoming Dates: May 7, August 6, November 5. Contact Barbara if interested in being added to the distribution list.

The purpose of the Forum is to exchange knowledge on DECM Test Metrics. Topics include, but are not limited to test metric methods, use of sampling, interpreting results, criteria for a CAR, and lessons learned.

Establishing a Partnership

- Establish a common goal to ensure the surveillance is value add to the project.
- Open and honest discussions on findings and issues to build trust.
- Supplier/Center representative can help clear up questions / complexities of the project's EVMS.
- Share knowledge / suggestions that may be helpful for the project.

Principle 2: Minimize disruption to the projects

Developing a Trust Relationship with the Project

- The supplier/center representative is the key to establishing the trust relationship with the project.
- Minimize disruptions by having the supplier/center representative collect data artifacts.
- Avoid “gotcha” moments and examine the project to be sure an issue exists that need corrective action.
- Assist in brainstorming potential solutions for corrective actions that will be helpful for the project.

Principle 2: Minimize disruption to the projects

Working Toward Consensus

- Surveillance is often-perceived as adversarial because one party is under surveillance and the other is doing the surveillance.
- Consensus ensures both parties understand and agree to the finding.
- Should consensus not be obtained, the NASA Surveillance Plan has an escalation path to the EVM Program Executive and other advisors.
- A lack of consensus should not be confused with the issuing a corrective action request (CAR).

Principle 2: Minimize disruption to the projects

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