IVV 17: Internal Quality Audits

Version: AH

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Note: The official version of this document is maintained in IV&V's internal IV&V Management System Website (https://confluence.ivv.nasa.gov:8445/display/IMS). This document is uncontrolled when printed.

Purpose

This system level procedure (SLP) defines the NASA IV&V internal audit program. This SLP describes how internal audits of the NASA IV&V Management System (IMS) shall be planned, conducted, and reported to ensure that:

- The IMS effectively meets the requirements of the International Organization for Standardization (ISO) 9001:2015 Standard.
- The IMS effectively implements the Quality Policy and conforms to the NASA IV&V Quality Manual (QM).
- "Processes" are effectively and efficiently producing desired outputs and results.
- Documented SLPs and Work Instructions (WIs) (and any associated forms, templates, and supporting documents) reflect desired NASA IV&V operations, responsibilities, and products (i.e. documentation reflects what we want).
- Personnel, procedures, products and services comply with documented requirements. (i.e. actions and outputs reflect what we want).
- Corrective and preventive actions are systematically identified to improve IMS processes, procedures, and performance.

Supplemental information about how we plan to address these items can be found here.

Scope

This SLP applies to the IMS. Note: This SLP does not include ensuring compliance for CNSI-related work (e.g. to ensure procedures related to physical access, logging of content, destruction of content, etc. are followed, to ensure compliance with NPR 1600.2, etc.). There are other entities within GSFC/NASA that perform activities to confirm our compliance with these types of CNSI-related procedures.

Process Flow Diagram

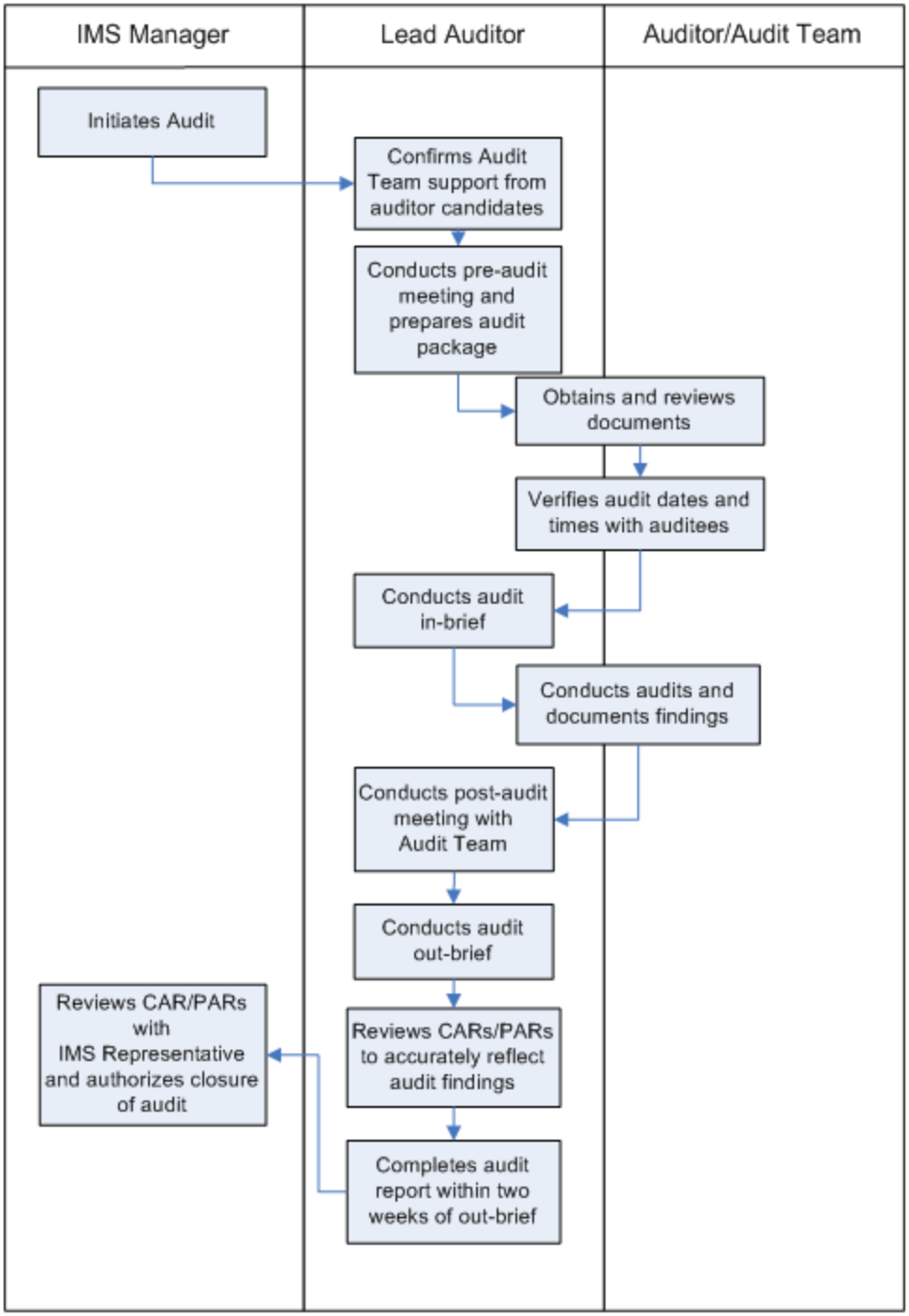
Audit Program Planning

The IMS Manager shall develop and maintain a master audit schedule each fiscal year. The IMS Manager shall ensure Audit Team resource requirements are coordinated prior to each fiscal year. The master audit schedule shall plan for the Quality Manual (QM) and compliance matrix review to be audited within a 12-month period. The master audit schedule shall plan for each process, System Level Procedure (SLP), Work Instruction (WI), and any supporting documents, templates, or forms to be audited over a 3-year period. However, modifications to the master audit schedule may be made to accommodate greater or lesser frequency and depth of audits based on the results of previous audits (internal or external), changes in the organizational work environment, and areas of potential risk. The IMS Manager shall record modifications to the master audit schedule in the master audit schedule change log.

The IMS Manager shall identify auditor training needs. This may include training for new auditors, refresher training for existing auditors, and training on new versions of standards. In coordination with supervisors and the IMS Manager, the NASA IV&V Training Coordinator shall ensure that auditors receive formal training in audit methods and objectives as needed to support the internal audit program.

Audit Activities

Any supplemental information will appear after the diagram.



IVV 17 Audit Activities -- 03-15-2017.vsd

In collaboration with the IMS Manager, the Lead Auditor shall confirm auditor support (this includes checking with Supervisors and Office Leads) from auditor candidates for the Audit Team.

The Lead Auditor shall hold a pre-audit meeting (this may be conducted virtually or via e-mail) with the Audit Team to discuss the audit plan and evaluate the scope of the audit to identify potential modifications. These modifications, if any, shall be proposed to and authorized by the IMS Manager.

The Lead Auditor shall assign auditors to a specific area of focus for the relevant audit scope. The Lead Auditor shall select auditors and conduct audits to ensure objectivity and the impartiality of the audit process; ensure that internal audits are conducted by qualified personnel knowledgeable in inspection and auditing; ensure that auditors do not audit their own work. The Lead Auditor shall ensure an audit package is provided to each auditor. The Lead Auditor shall ensure that auditees and management (e.g. Senior Leadership) are informed that the audit will be taking place (i.e. by conducting an in-brief or equivalent).

Each Auditor shall review the content from the audit package. The Auditor shall interview appropriate personnel and gather evidence to meet the objective(s) for his/her area(s) of responsibility.

The Auditor shall document the interviews, objective evidence reviewed, findings and notes in the Auditor Repository. The Lead Auditor shall categorize all findings as major/minor nonconformances, observations, or accolades. The Lead Auditor shall hold a post-audit meeting with the Audit Team to discuss findings and any other noteworthy information from the audit. All nonconformance and observations shall be documented by the Lead Auditor (in collaboration with the IMS Manager) per IVV 14, *Corrective and Preventive Action*. Other needed or potential changes or opportunities for improvement may be captured as Jira action items (https://jira.ivv.nasa.gov:8444/secure/Dashboard.jspa?selectPageId=23604) and /or using the "Pending changes and considerations" concept.

The Lead Auditor shall reconcile any disagreements between Auditors and Auditees. When necessary, the Lead Auditor shall submit disagreements to the IMS Manager for reconciliation.

The IMS Manager shall review the Audit Report, as well as any CARs/PARs, for clarity and completeness. The IMS Manager shall authorize closure of the Audit only after associated findings are reviewed with the IMS Representative and CARs/PARs are opened in the CAR/PAR System. The Lead Auditor shall ensure that auditees and management (e.g. Senior Leadership) are informed that the audit is complete and provided a summary of the results (i.e. by conducting an out-brief or equivalent).

Metrics

Any metrics associated with this SLP are established and tracked within the NASA IV&V Metrics Program.

Records

The following records will be generated or updated and filed in accordance with this SLP and IVV 16, *Control of Records*, and in reference to NASA Procedural Requirements (NPR) 1441.1, *NASA Records Management Program Requirements*.

Record Name	Original	Essential	Responsible Person	Retention Requirement	Location
Auditor Repository	Y	N	IMS Manager	Destroy when 7 yrs old (1/26.5A)	ECM System
Audit Report	Y	N	IMS Manager	Destroy when 7 yrs old (1/26.5A)	ECM System
Master Audit Schedule	Y	N	IMS Manager	Destroy when 7 yrs old (1/26.5A)	ECM System
CAR/PAR	Y	N	IMS Manager	Destroy when 7 yrs old (1/26.5A)	Jira (TrackWise prior to March 2011)

Definitions and Acronyms

Official NASA IV&V roles and terms are defined in the Quality Manual. Specialized definitions identified in this SLP are defined below.

- **Accolade**
  - An accolade cites an exemplary system, procedure, or behavior.
- **Audit Package**
  - The Audit Package is provided to each member of the Audit Team prior to the start of each internal quality audit, and contains content related to the area(s) the Audit Team member will be auditing in that particular audit. The Audit Package contains (but is not limited to):
    - Areas of concentration identified in the last three internal audits (previous 36 months).
    - CARs/PARs opened in the past 36 months.
    - Audit notes from the last three internal audits (previous 36 months).
    - Guide sheet: any specific themes, general focus areas, objectives (from the “Purpose” section of this SLP), key questions, etc. for that particular internal audit. These are likely to be broadly applicable (i.e. they apply to all audit areas, not just one or two SLP’s like: IVV 09-4, IVV 06-1, etc.).

- **Audit Report**
  - The Audit Report is a report compiled and completed by the Lead Auditor at the end of an internal audit. It includes input from all Auditors. The Audit Report covers all phases and aspects of the internal audit, including (but not limited to) an executive summary, objectives, a scope, an audit approach, schedules, findings, auditor notes, and an audit approach evaluation.
- **Audit Team**
  - The Audit Team is comprised of the Lead Auditor, Auditors, and others (such as audit observers) for the purpose of conducting IMS internal audits.
- **Auditee**
  - An Auditee is any person being audited.
- **Auditor**
  - An Auditor is a NASA IV&V civil service or contract employee who has been formally trained in audit methods and objectives or possesses sufficient audit experience or on-the-job training as determined by the IMS Manager.
- **Auditor Repository**
  - The Auditor Repository is used by internal Auditors to record, store, and report internal audit findings and auditor notes. It is located on the Enterprise Content Management (ECM) System.
- **Lead Auditor**
  - A Lead Auditor is a NASA IV&V civil service or contract employee who has been formally trained and certified in an accredited Lead Auditor class, or possesses sufficient audit experience or on-the-job training as determined by the IMS Manager.
- **Nonconformance**
  - A nonconformance represents a lack of compliance with a specified process or procedure (requirement) associated with the IMS, or a nonconforming product in the IMS. For the purposes of this SLP, a nonconformance can be categorized into one of two levels of severity.
  - **Major Nonconformance**
    - A major nonconformance is characterized by one or more of the following:
    - A lack of a documented procedure, or a documented procedure that is not being implemented consistently.
    - An issued nonconforming product that has a significant effect on customer success, safety, or resources.
    - A series of minor nonconformances that indicate an overall IMS deficiency that may have an adverse effect on overall product quality or customer satisfaction.
  - **Minor Nonconformance**
    - A minor nonconformance is an issued nonconformance that has little or no effect on the customer.
- **Observation (OBS)**
  - An observation is used to capture data points where a potential nonconformance exists.

Acronyms

A2LA	American Association for Laboratory Accreditation
3PAO	Third Party Assessment Organization
CAR	Corrective Action Request
ECM	Enterprise Content Management
FedRAMP	Federal Risk and Authorization Management Program
IMS	NASA IV&V Management System
ISO	International Organization for Standardization
NODIS	NASA Online Directives Information System
NPR	NASA Procedural Requirements
OBS	Observation
PAR	Preventive Action Request
QM	Quality Manual
SCO	Strategic Communications Office

SLP	System Level Procedure
WI	Work Instruction

References

REFERENCES	
Document ID /Link	**Title**
ISO 9001	International Organization for Standardization: Quality Management Systems - Requirements
ISO 17020	International Organization for Standardization: Conformity assessment – Requirements for the operation of various types of bodies performing inspection
IVV QM	NASA IV&V Quality Manual
IVV 05	Document Control
IVV 14	Corrective and Preventive Action
IVV 16	Control of Records
NPR 1441.1	NASA Records Management Program Requirements
A2LA R311	Specific Requirements: Federal Risk and Authorization Management Program (FedRAMP)

If any procedure, method, or step in this document conflicts with any document in the NASA Online Directives Information System (NODIS), this document shall be superseded by the NODIS document. Any external reference shall be monitored by the Document Owner for current versioning.

Version History

VERSION HISTORY				
Version	**Description of Change**	**Rationale for Change**	**Author**	**Effective Date**
Basic	Initial Release		John Griggs IT/204	8/26 /1998
A – S	Older revision information may be located in the Version History Overflow Document		Various	09/11 /1998 – 09/15 /2010
T	Update Section 4.1, Audit Master Schedule to denote that all (including new) SLPs/WIs are audited within 12 months		Natalie Alvaro	3/30 /2011
U	Update roles. Replace Audit Database with Auditor Repository		Natalie Alvaro	10/20 /2011
V	Update Scope. Update Definitions: IMS Modifications spreadsheet, and made observation its own entity as it is not necessarily a type of nonconformance. Streamline editorial changes		Natalie Alvaro	5/24 /2012
W	Clarify Auditor responsibility of validating the effectiveness of CAR/PARs		Natalie Alvaro	7/31 /2012

X	Add review of individual audit scope in pre-audit meeting. Add responsibility of auditors to confirm supervisor's approval.	CAR/PAR: 2012-C-371 and 2012-P-367	Natalie Alvaro	1/03 /2013
Y	Removed verbiage and references to Form 1005, Finding Report. Removed CAR/PAR entry details and referred to IVV 14.	This form is very rarely needed or used. Email or similar methods can easily be used in place of the form. Removal of CAR/PAR details reduces duplication and thus reduces maintenance and chance of error.	Richard Grigg	12/12 /2013
Z	Modify the definition of "Audit Package" to include more details about what content is required. In section 4.2, clarify criteria for closing Audit.	PAR 2014-P-401: "… including exactly from where the information is collected and how far back to go for comments and notes. This can help ensure that the appropriate type and amount of information is considered (including previously closed CARs/PARs, areas of concentration, etc.)."	Jeffrey Northey	7/14 /2014
AA	Replace "Audit Manager" with "IMS Manager" since "Audit Manager" is not defined. 3) Clarify who may be a NASA IV&V Lead Auditor. 4) Refer to IVV 05 for handling of editorial findings. 5) Add Post-audit team meeting to flow and to text.	PAR 2014-P-417: 3) Can anyone be a Lead Auditor? Add "and certified"; discretion of "Audit Manager" remains; experience/ OJT could be acceptable in certain cases. 4) IVV 17 "steps on" IVV 05 wrt Mod-Needed spreadsheet. 5) Post-audit team meeting not mentioned in IVV 17.	Jeffrey Northey	1/29 /2015
AB	Many changes to add clarity and correct inconsistencies between the document and actual practice.	Updates in response to PAR #2015-P-440. These changes add clarity and correct inconsistencies between the document and actual practice.	Jeffrey Northey	1/15 /2016
AC	Update to explicitly include scope/ activities required by FedRAMP. Expand training guidance.	To address CAR #2016-C-454. These changes mitigate the risk that audit activities required for FedRAMP compliance would be overlooked.	Jeffrey Northey	4/26 /2016
AD	Update to include compliance with A2LA document R311 (Specific Requirements: FedRAMP) in purpose and add that document to the references of this SLP.	To address CAR #2017-C-484. These changes mitigate the risk that internal audits do not include a review of all 3PAO requirements.	Keenan Bowens	7/13 /2017
AE	Set a new frequency for internal audits to be completed once a year. Set different frequencies for provided materials and audit report updated to incorporate audit approach evaluations.	A new audit approach for auditing the QM, Compliance Matrix, 3PAO projects yearly and processes, SLPs, WIs every 3 years.	Alex Ayers	12/05 /2019
AF	Added a note to the scope statement to clarify that this SLP does not include ensuring compliance for CNSI-related work (e.g. requirements of NPR 1600.2).	Update in response to PAR #2017-P-495, confirming that we do not need to alter our IMS audit approach to include compliance with CNSI-related work (e.g. requirements of NPR 1600.2).	Jeffrey Northey	4/24 /2020
AG	Added language for auditing FedRAMP content on an annual basis	A2LA requirement	Jeffrey Northey	11/13 /2020
AH	Updated to adjust ISO 9001 compliance language and removed 17020 and FedRAMP references.	No longer ISO 9001 or 17020 Certified	Alex Fansler	02/24 /2022