ADS Chapter 548

Program-Funded Independent Verification and Validation (IV&V) Reviews

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ADS Chapter 548 – Program-Funded Independent Verification and Validation (IV&V) Reviews

548.1 OVERVIEW

Effective Date: 08/01/2009

This chapter provides the authority, policy directives, and required procedures for the federally mandated ADS 548 Independent Verification and Validation (IV&V) review of Agency program-funded Information Technology (IT) investments with a threshold of $100,000 or more over the full IT project life cycle up to five years. This chapter applies to all USAID personnel who are procuring or developing such program-funded investments at USAID/W or Missions. In those instances where initial project life cycle costs do not exceed $100,000 but surpass that threshold during the 5-year IT project life cycle, an IV&V review must be conducted when a revised life cycle cost estimate surpasses $100,000. Full IT life cycle costs include all direct and indirect costs for planning, procuring, operating and maintaining, and disposing of IT components.

USAID does not require program-funded investments that do not meet this threshold, or IT investments funded by grants or cooperative agreements, to undergo an IV&V review. However, USAID strongly recommends IV&V reviews for these investments to ensure that the most appropriate and cost-effective equipment is purchased or developed (see “Background” below for additional information).

An ADS 548 IV&V review will inform both the initiation of IT procurements and/or the advancement to subsequent phases of system development and/or acquisition. The IV&V review process establishes a means for ensuring investment management, information security, and systems development life cycle management policy compliance, including periodic review of planning documents and development products for IT investments and activities developed within or for component organizations.

While IV&V recommendations are not binding, Project Managers (PMs) who disregard the recommendations should document the reasons for doing so in case of future audit.

Background

The strategic value of IT has become an increasingly important factor in international development projects. As a result, USAID has launched a number of global IT initiatives and will undertake many more in the future. These projects are highly visible for the following reasons:

- The number and position of stakeholders involved;
- The potential impact on more than one country;
- The potential impact on more than one sector in a given country; and

- The significant impact on business processes in host country institutions within the business and political environment.

These development projects present USAID PMs with new planning and implementation challenges such as rapidly evolving technologies and limited technical resources within the Missions to conduct impartial reviews of contractor-submitted proposals. Such challenges can result in late projects with cost overruns, scaled-down features from the original requirement specifications, or worse, project failure.

The IV&V review process addresses these challenges by assisting PMs in evaluating and selecting successful, effective, and efficient IT components of development projects to ensure the best return on the Agency's investment dollars (see **Program-Funded Information Technology Review (ADS 548R)**).

548.2 PRIMARY RESPONSIBILITIES

Effective Date: 08/01/2009

a. The **Bureau for Management, Business Consulting and Client Services, Office of the Chief Information Officer (M/CIO/BCCS)**, acting under the authority of the Chief Information Officer (CIO), provides Independent Verification and Validation (IV&V) analysis support for the IT components of Agency program-funded activities that have a threshold of $100,000 or more over the full IT project life cycle up to five years.

b. **Project Managers (PMs)** or designated representatives are responsible for contacting M/CIO/BCCS at the earliest stage possible prior to initiating procurements or advancing to subsequent phases of system development so that M/CIO/BCCS may conduct an IV&V analysis, if applicable.

c. The **Contracting Officer (CO)** oversees the procurement process.

d. The **Bureau for Management, Office of the Chief Information Officer (OCIO)** and **M/CIO/BCCS** monitors the selection, planning, control, and evaluation of investments in, and acquisition of, information systems and information technology for program-funded procurements with IT components that have a threshold of $100,000 or more over the full IT project life cycle up to five years.

548.3 POLICY DIRECTIVES AND REQUIRED PROCEDURES

548.3.1 Independent Verification and Validation (IV&V) Review

Effective Date: 08/01/2009

The **Clinger-Cohen Act (CCA)** (also known as **40 U.S.C. 1401**) directs Federal agencies to establish clear and concise direction regarding investments in major information systems and to enforce that direction through the budget process. Relevant laws and regulations, as identified in **548.4.1** and **548.4.2,** mandate that all Federal agencies review and approve program-funded projects that have an IT component in which the full IT life cycle cost of commodities or services (such as

installation, maintenance, and technical assistance) exceeds $100,000 over five years. M/CIO/BCCS reviews and approves these projects for USAID through the Independent Verification and Validation (IV&V) review process.

The M/CIO/BCCS IV&V review is a reliable framework for increasing the efficiency and effectiveness of projects' IT components. The IV&V review assesses whether the proposed IT components satisfy all factors necessary for successful development, implementation, and project management, and provides insight and input from enterprise, technical, and project levels that could potentially save time and money. In addition, the IV&V review ensures that USAID projects adhere to Federal law.

When performed in parallel with the IT project life cycle, the IV&V review process also:

- Provides for the early detection and identification of risk elements within a project, ensuring that the PM can take action to mitigate risks early in the project life cycle; and

- Enables M/CIO/BCCS to provide feedback and valuable lessons learned so that the PM may effectively plan, organize, and control the project in order to achieve Assistance Objectives (AOs). These AOs should conform with the Agency's Foreign Assistance Framework goals and ultimately to the Federal Enterprise Architecture (FEA) Business Reference Model (see **548.3.2**, "IT Experience Repository").

548.3.2 IT Experience Repository

Effective Date: 08/01/2009

As the Agency continues to adopt the Federal Enterprise Architecture Framework (FEAF) and as the Agency's enterprise architecture matures, the IV&V review process will increasingly be used to identify function and/or system redundancies, performance shortfalls, and opportunities to share or reuse IT-related capabilities. Through the IV&V analysis, IT investments will demonstrate improved levels of efficiency.

Currently, M/CIO/BCCS is collecting and organizing IV&V results from previous reviews into a documentation framework designed to serve as a reference for proposed and on-going IT projects. This framework, called the IT Experience Repository, describes software and hardware in its day-to-day business use, and is based upon the Federal Enterprise Architecture "Business Reference Model." The goal of the framework is to encourage a functionally driven approach to the use of emerging technologies, as well as to identify functionally driven business operations that have already been developed and can be reused. Once the IT Experience Repository is available online, PMs should begin referencing this framework in the early planning stages of their project.

USAID reserves the right to reproduce, publish, or otherwise use IT products developed with Federal funds per the U.S. Code of Federal Regulations (**22 CFR 226.36**). USAID also has the right to authorize third parties to receive, reproduce, publish, or otherwise use such products for USAID purposes. USAID reserves a royalty-free,

nonexclusive and irrevocable right to obtain, reproduce, publish, or otherwise use the work for USAID purposes, and to authorize others to do so for USAID purposes. However, a recipient of USAID funds through a grant or cooperative agreement may copyright any work that is subject to copyright and which the recipient developed under the award. This includes copyrights purchased under the award.

548.3.3 When to Initiate the Review

Effective Date: 08/01/2009

The PM or designated representative must contact M/CIO/BCCS via e-mail at **ADS-548Review@usaid.gov** to communicate the direction and intention of a proposed IT system early in the project planning process, before generating project planning and systems engineering documentation. The request should include information regarding all of the IT components of the project, and the designated Contracting Officer (CO) must be copied on the e-mail.

548.3.3.1 What M/CIO/BCCS Reviews

Effective Date: 08/01/2009

As part of the IV&V process, M/CIO/BCCS reviews and analyzes submitted information from PMs or their designated representative to ensure that the project will have a reliable, scalable, and sustainable information system at completion and that the system's strengths and weaknesses are identified.

Throughout this process, M/CIO/BCCS also keeps PMs aware of emerging technologies, Federal regulatory guidance, legislation, and technical developments. Upon request, M/CIO/BCCS can also advise PMs on current and future directions of hardware and software technologies when sufficient functional requirements are known.

548.3.3.2 BCCS Requirements for the Review

Effective Date: 08/01/2009

In order to conduct the IV&V review, and before PMs finalize system specifications and expend funds, M/CIO/BCCS requires PMs or their designated representative to include the following information, as applicable, in the request for the review:

- Description of the project IT component;
- Goals and objectives of the IT component;
- Summary of IT needs assessment;
- Relevant business and functional requirements;
- Mapping of relevant Assistance Objectives (AOs) to the IT components of the project;
- Maintenance and support plans for the system, including a description of the host country institution IT infrastructure;

- Discussion of primary applications, system design concept, and system implementation plan;
- List of IT system specifications, including hardware and software architecture;
- Results of any studies recommending specific IT tools or platforms;
- Training and staffing plans for system implementation;
- Information security measures;
- Relevant system cost information, including breakdowns for major components; and
- Measurable success factors or outcomes to assess IT transfer objectives.

548.3.3.3 BCCS Review Schedule, Process, and Timeframes

Effective Date: 08/01/2009

An analyst from M/CIO/BCCS must acknowledge receipt of a review request within one business day. M/CIO/BCCS will review a request for an IV&V review within 10 business days of the date received in the **ADS-548Review@usaid.gov** mailbox. M/CIO/BCCS will attempt to expeditiously conduct IV&V reviews.

The PM or designated representative may request a tandem project technical focus review for projects that support host country governments. In such instances, M/CIO/BCCS will adjust the response time to allow for coordination among offices.

The **Standard Operating Procedure (SOP) Reference Guide** provides specific examples of the IT project information requirements.

548.3.3.4 The Full Review Stage in the IV&V Process

Effective Date: 08/01/2009

The full review stage (see **ADS 548 IV&V Flowchart**) in the IV&V review process assesses the project proposal's Information Technology Project Life Cycle Methodology. The full review ensures that all necessary aspects of the methodology are included in the project proposal in order to reduce the probability of changes during the implementation phase that could negatively impact product/project quality or delivery deadlines. Such aspects include:

- System and application engineering,
- Product acquisition and/or construction,
- System integration,

*An asterisk and yellow highlight indicate that the adjacent material is new for this chapter or substantively revised.

- System test,
- Verification/acceptance,
- Finalizing and deployment, and
- Operations and maintenance.

548.3.3.5 Mission and USAID/W-Funded On-Site Extensive Reviews (Optional)

Effective Date: 08/01/2009

Analysts from M/CIO/BCCS's Technical Assistance Services Team are available for on-site extensive reviews, either at the Mission location or at USAID/W. On-site extensive reviews examine the lifecycle methodology of the five major areas of an IT initiative, namely:

- Data
- Networks (organizational and system)
- Technology
- Activities (workflow)
- People (training)

When providing these on-site technical services, analysts will evaluate appropriate IT use in host country institutional environments and at USAID/W, and provide recommendations for improving IT and project performance. This technical assistance includes, but is not limited to, the following:

- IT infrastructure (hardware and software),
- Project plan and project schedule,
- Business and functional requirements specifications,
- Architecture and design specifications,
- Development plan and schedule,
- Test plan, test cases, and schedule,
- Implementation plan and schedule,
- Operations and maintenance plan, and
- Project completion steps/sign-off.

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After the on-site extensive review, M/CIO/BCCS analysts from the Technical Assistance Services Team will make a recommendation as to whether to continue, suspend, re-baseline, or cancel projects or components thereof, including any associated current or planned acquisitions.

Financing for the on-site extensive review is the responsibility of the requesting organization. Therefore, the requesting organization should plan for these reviews in their project budget and schedule.

E-mail inquiries and requests for on-site extensive reviews to **ADS-548Review@usaid.gov**.

548.3.3.6 Exceptions to the IV&V Review Process

Effective Date: 08/01/2009

In instances where program-funded assistance for IT components or services does not meet the threshold of $100,000 in IT life-cycle costs over five years, the CO, in collaboration with the Executive Officer (EXO), may approve the project. The PM must still submit all final review documentation to M/CIO/BCCS at **ADS-548Review@usaid.gov**.

548.3.4 USAID Program-Funded Software and Hardware Equipment

Effective Date: 08/01/2009

USAID/W or Missions may link program-funded hardware or software equipment to operating expense (OE)-funded local area networks (LANs) so long as the LAN is supporting an OE-funded IT infrastructure. The EXO, in collaboration with the CO, must identify the equipment and the funding source accounts that are sponsoring the project prior to executing such acquisitions.

All program-funded software or hardware components over $100,000 must undergo relevant Agency IT project life-cycle methodology reviews, M/CIO IT security and IV&V reviews, and relevant change control processes to ensure that system changes are made in a controlled and coordinated way. Financing for the required project evaluation reviews is the responsibility of the requesting organization within USAID. Therefore, the requesting organization within USAID should plan for these reviews in their project budget and schedule.

When software or hardware with full life-cycle costs exceeding $100,000 is proposed for implementation on USAID's network, the PM should obtain approval from the Office of the Chief Information Officer (OCIO) and coordinate with M/CIO/BCCS. The PM must initiate this communication via e-mail to **ADS-548Review@usaid.gov** in the preliminary stages of project planning, regardless of project life cycle cost.

Please contact **ADS-548Review@usaid.gov** for more information and cost estimates.

548.3.5 Questions and Assistance
Effective Date: 08/01/2009

The Technical Assistance Services Team is available to help PMs or their designated representative with the implementation of IV&V requirements. If you need technical assistance services, send an e-mail request to **ADS-548Review@usaid.gov**.

*548.4 MANDATORY REFERENCES

*548.4.1 External Mandatory References
Effective Date: 05/04/2012

a. **22 CFR 226.36**

b. **Clinger-Cohen Act (40 U.S.C. 1401, Information Technology Management)**

c. **E-Government Act of 2002 (Public Law 107-347)**

d. **Federal Acquisition Regulations Part 39, Acquisition of Information Technology**

e. **Federal Information Security Management Act (FISMA)**

f. **GAO Information Technology Investment Management: "A Framework for Assessing and Improving Process Maturity"**

g. **General Accounting Office (GAO), Standards for Internal Control in the Federal Government**

***h.** **OMB Circular A–130, 'Revised' Management of Federal Information Resources**

i. **Public Law 104-106**

j. **40 USC Subtitle III**

k. **Title 44 U.S. Code, Section 3506, Federal Agency Responsibilities**

*548.4.2 Internal Mandatory References
Effective Date: 05/04/2012

a. **ADS 545, Information Systems Security**

b. **ADS 548 IV&V Review Process Flowchart**

***c.** **ADS 546 Acquisition of Federal Information Technology (IT) Resources**

d. **ADS 577, Information Technology Capital Planning and Investment Control, Table 1, Investment Category Documentation & Review Requirements**

e. **Standard Operating Procedure Reference Guide**

f. **USAID Enterprise Architecture Agency Conceptual Level Overview Volume1: Management Discussion**

g. **USAID Enterprise Architecture Agency Concept-level Volume II: Appendices**

h. **Program-Funded Information Technology Review (ADS 548R)**

548.4.3 Mandatory Forms
Effective date: 08/01/2009

There are no mandatory forms for this chapter.

*548.5 ADDITIONAL HELP
Effective date: 05/04/2012

***a.** **2012-2013 Fiscal Year Program Information**

***b.** **Bill Of Materials Template**

***c.** **ADS 548 Number Request**

***d.** **ADS 548 Program-Funded IT Review**

***e.** **Section-by-Section Guidance for ADS 548 IV&V Request Template**

These materials can also be found on the **ADS Forms** page as fillable Word documents.

548.5.1 Optional Forms
Effective date: 08/01/2009

There are no optional forms for this chapter.

548.6 DEFINITIONS
Effective Date: 08/01/2009

The terms and definitions listed below have been incorporated into the ADS Glossary. See the **ADS Glossary** for all ADS terms and definitions.

Assistance Objectives (AOs)
The most ambitious result that a USAID Operating Unit, along with its partners, can materially affect, and for which it is willing to be held accountable. (**Chapter 200**)

Enterprise Architecture (EA)
A comprehensive blueprint for the Agency's business processes and IT investments. EA is a basic structure maintaining and providing analysis capacity in relation to all the Agency's functions, modes of delivering services, related information flows, and the technologies that handle them. It provides an encompassing composite of the interrelationships between Agency functions, services, and technology from which focused need areas within the organization can be derived. (548, **577**)

Executive Officer
A term used by some agencies to identify the officer charged with responsibilities for administrative and program support activities. (6 FAM 700) **(Chapters 527, 535)**

host country
The country in which a USAID funded activity takes place. (Chapters **200**, **201**, **202**, **203**, **252**, **253**, **301**, **305**, **311**, **322**, **495**, 548)

information systems security
Protection afforded to information and telecommunications systems which process classified national security-related information and/or unclassified sensitive information in order to prevent exploitation through intentional or unintentional disclosure, interception, unauthorized electronic access, or related technical intelligence threats. (Chapters 548, **562**)

Information Technology
(A) The term 'information technology', with respect to an executive agency means any equipment or interconnected system or subsystem of equipment, that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the executive agency. For purposes of the preceding sentence, equipment is used by an executive agency if the equipment is used by the executive agency directly or is used by a contractor under a contract with the executive agency which (i) requires the use of such equipment, or (ii) requires the use, to a significant extent, of such equipment in the performance of a service or the furnishing of a product.

(B) The term 'information technology' includes computers, ancillary equipment, software, firmware and similar procedures, services (including support services), and related resources.

(C) Notwithstanding subparagraphs (A) and (B), the term `information technology' does not include any equipment that is acquired by a Federal contractor incidental to a Federal contract. (Source: Clinger-Cohen Act) (Chapters **518**, **541**- 548, **552**, **577**)

Independent Verification & Validation

Verification and validation performed by an organization that is technically, managerially and financially independent of the development organization. (IEEE 610, Chapter 548)

life cycle costs
This includes all direct and indirect costs for planning, procuring, operating and maintaining, as well as disposal of specified IT components. Procurement costs include purchase price and all other costs incurred to bring an IT component to form and location suitable for its intended use. Operations and maintenance would also include costs associated with service contracts. (Chapter 548)

operating expenses (OE)
Costs related to personnel, other administration costs, rental, and depreciation of fixed assets. (Chapters **200**, **201**, **202**, **203**, 548)

program-funded property (USAID)
Property distinct from OE-funded property, which is procured for the achievement of a Strategic Objective with funds of a USAID activity or project. (Chapter 548)

Project Manager (PM)
The individual accountable for accomplishing the stated project objectives, including planning, executing, and closing the project. (Chapter 548)

USAID IT investments
IT initiatives or projects funded at Missions or USAID/W, regardless of funding source, that are owned or leased by USAID and operated by USAID or by contractors for Agency operations. (Chapters 548, **577**)

Verification and Validation
The process for determining whether the requirements for a product are complete and correct; the work products of each development phase fulfill the requirements or conditions imposed by the previous phase; and the final product complies with specified requirements. (IEEE 610)

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