

**OHIO
SUPPORT ENFORCEMENT
TRACKING SYSTEM
(SETS)**

**INDEPENDENT
VERIFICATION & VALIDATION (IV&V)
ASSESSMENT REVIEW**



**U.S. Department of Health and Human Services
Administration for Children and Families
Office of Child Support Enforcement**

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EXECUTIVE SUMMARY

As a result of missing the October 1, 1997, deadline for achieving statewide installation and operation of a comprehensive automated Child Support Enforcement System (CSES) meeting all of the requirements of the Family Support Act of 1988 (FSA88), the Ohio Support Enforcement Tracking System (SETS) project became subject to mandatory provisions of Federal regulations at 45 CFR 307.15(b)(10). These provisions require an entity independent of the State Title IV-D agency and of the SETS project management structure to perform Independent Verification and Validation (IV&V) of the SETS project. The Administration for Children and Families (ACF) has the authority under Action Transmittal OCSE-AT-98-26 to grant very limited exceptions to allow a State agency independent of the child support agency and its development project to provide these IV&V services. A preliminary IV&V assessment of the SETS project was conducted by the Federal Office of Child Support Enforcement (OCSE) on April 19-21, 1999. The purpose of the assessment was to determine the extent of IV&V services required on the SETS project. This report presents the findings of our assessment review.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

SCOPE OF REQUIRED IV&V SERVICES

The State must move to immediately acquire IV&V services on the SETS development project. The IV&V provider who supplies these services shall review and make recommendations on the following areas of the SETS development process as described in Section 3 of this report:

- Project Planning and Reporting
- Project Estimating and Scheduling
- Project Organization
- Quality Assurance
- Requirements Management

IV&V services will be required until such time that Ohio successfully implements and receives Federal certification of SETS for all requirements of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA), as delineated in this report. The acquisition of this *IV&V Service Provider*, either through a formal procurement of contract resources or Interagency Cooperative Agreement, will need to commence immediately. To assist the State in this regard, this report's recommendations are structured to present specific IV&V tasks that can be included in the Statement of Work of an IV&V Service Provider. **The IV&V Service Provider must supply all plans, reports of findings, and recommendations to ACF Central and Regional Offices at the same time that they are supplied to the State, as specified in 45 CFR 307.15(b)(10)(ii).**

IV&V SERVICE PROVIDER

The State must move to begin the identification of requirements for and formulation of a Scope of Work for ongoing IV&V services to the State's SETS project. It is incumbent on the State to begin the acquisition process for these services now to avoid further schedule delays. Therefore, the State should immediately pursue the identification of potential in-State IV&V resources. If these resources, independent of the State's Title IV-D and its umbrella agencies, cannot be identified then a contract procurement effort must be initiated. This report has been designed to provide the State with a series of initial recommendations that can be incorporated into a Scope of Work for the project's IV&V Service Provider. To further support the State's IV&V process, OCSE is committed to providing the State with technical assistance in the form of documentation review and recommendations, as needed, to assist the State in the acquisition/procurement of an IV&V Service Provider.

PRIOR APPROVAL

The Request for Proposals (RFP) and contract (or similar documents if IV&V is performed by another State agency) must be submitted to ACF for prior approval, regardless of the cost or contractual arrangements. The IV&V services contract or agreement with a State agency must include the names and qualifications of key personnel who will actually perform the IV&V services. **For all IV&V activities, the State must submit an Advanced Planning Document Update (APDU) addressing in sufficient detail the IV&V activities and related costs eligible for Federal financial participation (FFP) at the applicable matching rate.**

IV&V DURATION

IV&V must be performed at initial activation of the IV&V Service Provider contract or State agency agreement. Thereafter, the IV&V services must be performed semi-annually until such time that Ohio successfully implements and receives Federal certification of SETS for all PRWORA requirements. ACF will periodically reevaluate the IV&V scope of work and frequency requirements of SETS based upon project progress or when one or more of the IV&V triggers occurs, as described in 45 CFR 307.15(b)(10)(i), such as failure to meet a critical Advanced Planning Document (APD) milestone.

BATTELLE (VENDOR) ACCEPTABILITY AS IV&V SERVICE PROVIDER

Our review found that Battelle does not appear to possess an adequate level of independence from the SETS project's umbrella agency, the ODHS, and therefore cannot be considered as a viable option as the SETS IV&V Service Provider. The level of interaction and coordination with ODHS, due to direct contractual obligations with, management oversight by, and direction from the department, create inherent real and perceived conflicts of interest for the department were it to make use of Battelle as its IV&V Service Provider. In accordance with Federal regulations at 45 CFR 307.15(b)(10)(ii), limited authority exists to grant exceptions for agencies or vendors under contract with the State agency requiring IV&V services, with an overriding approval criteria being the independence a potential provider possesses.

INDEPENDENT VERIFICATION AND VALIDATION (IV&V) ASSESSMENT REVIEW REPORT FOR THE OHIO SETS PROJECT

1. INTRODUCTION

The State of Ohio missed the October 1, 1997, deadline for achieving Federal certification for system modification to meet the requirements of the Family Support Act of 1988 (FSA88). ACF, as a result, conducted an IV&V Assessment Review including an assessment of the current documentation of the SETS system, as well as historical data on the project. The purpose of the assessment was to enable ACF to make recommendations on the extent of the IV&V services that the State will be required to obtain. This report provides the results of that assessment.

1.1 BACKGROUND

ACF conducted a site visit to help determine the required scope of IV&V for SETS on April 19-21, 1999, at the SETS development office in Columbus, Ohio. The IV&V assessment team consisted of:

Ron Logan	ACF/OCSE/DCSIS
Eric Staples	ACF/Region V
Stan Slominski	Marconi Systems Technologies

Personnel from the Ohio Department of Human Services' (ODHS) Child Support Division and Information Management Division (IMD), and the Ohio Information Services Division (ISD) participated for the State. The State and SETS contractor (*) representatives consisted of:

Jean May, Jr.	SETS Assistant Project Director
* Clayton Frick	SETS Project (Outreach)
* Dan Green	SETS Project (Communications/Outreach Mgr.)
* Pat Lynch	SETS Project (Release Mgmt)
* Tom Woods	SETS Project (Outreach)

Our review also sought to, at the request of State management, assess the qualifications and acceptability of using a current contractor to the ODHS (Battelle) to provide IV&V services should such services be required for the SETS project.

1.2 METHODOLOGY

Prior to the assessment review, a list of IV&V related materials and questions were forwarded to Mr. Mark Birnbrich, SETS Project Director. This list was intended to assist SETS project staff in understanding the types of items and information the IV&V assessment team would be looking at during its visit. The assessment consisted primarily of a presentation by the State with a question and answer period for each of the following major areas of interest: project management, project personnel, subcontractors and external staff, training and documentation, process definition and product standards, quality assurance, configuration management, requirements management, system security and system capacity. State staff provided more detailed information on these primary areas during the various on-site discussions.

A list of documentation and historical data needed to support areas of discussion during and after the review was generated, finalized and agreed to by the State and IV&V assessment team during the on-site review. This list of documents, to be forwarded to the Office of Child Support Enforcement (OCSE) for examination is identified in Table 1. SETS Documents Reviewed. Recommendations resulting from the on-site visit and subsequent analyses of all forwarded documentation is included in Section 3 of this report.

Table 1. SETS Documents Reviewed

No.	Document Description	Originator	Document Date	Date Provided	IV&V Reqmt
1	SETS Project CDs (2 copies of 3 CDs) <ul style="list-style-type: none"> • SETS InnerWeb • SETS Computer Based Training (CBT) • Project Documentation 	SETS	April 19-21, 1999	4/21/99 & 4/27/99 (copy #2)	All
2	ODHS/SETS Update Presentation	SETS	4/13/99	4/27/99	NA
3	ODHS MIS Table of Organization	MIS	4/1/99	4/27/99	1.1.1
4-0	SETS Development Standards & Guidelines, Version 2.0 (draft)	ODHS OCSE and Costello & Associates	7/94	4/27/99	2.2.5
4-13	Draft Design Document for Maestro System	ODHS/ SETS	3/1/99	4/27/99	1.3.3, 2.2.7, 2.5.3, 3.1.12, 3.4.4
4-21	Sample ABT Workbench Report – Template <ul style="list-style-type: none"> • Project Management & Time Reporting Procedures Manual 	ODHS MIS	4/14/99 3/26/98	4/27/99	1.3.9, 1.4.5
4-26	Follow-Up to 1998 APDU	ODHS	3/25/99	4/27/99	1.4.1, 1.4.6, 1.4.7
4-28	Sizing Estimates of SETS Database <ul style="list-style-type: none"> • DASD Reqmts Memo for converting large county & DCT county cases to SETS • SETS Databases – March Space Usage Report • SETS Resource Reqmts Document (draft) 	ODHS	3/8/99 4/21/99 11/13/95	4/27/99	1.4.2

No.	Document Description	Originator	Document Date	Date Provided	IV&V Reqmt
4-30	Estimated Volume of Data to be Converted <ul style="list-style-type: none"> • Conversion Screen Flow (from SETS Procedures Manual, Version 2.2.0) 	SETS	2/99	4/27/99	1.4.2
4-31	Estimated Caseload <ul style="list-style-type: none"> • ODHS Financial Management Report (QUT250RA – SETS April 99 Statistics) 	ODHS	4/9/99	4/27/99	1.4.2
4-32	Description of Release/Versioning Process <ul style="list-style-type: none"> • Release Summary • Version Summary • Update Summary 	SETS	3/4/97 3/4/97 6/23/97	4/27/99	1.4.3, 1.5.1
4-33	MIS Position Descriptions – SETS	MIS BSD	3/1/99	4/27/99	1.4.4, 1.5.3, 1.6.3
4-34	Description of Role Definitions/Assignments in Release Process	SETS	4/14/99	4/27/99	1.4.4
4-39	RFP for AMS Contract (Exhibit C-4)	SETS	5/15/95	4/27/99	1.7.1, 1.7.9, 1.7.10
4-40	AMS Proposal (Exhibit C-5)	SETS	6/12/95	4/27/99	1.7.1, 1.7.2, 1.7.9, 1.7.10
4-41	AMS Contract (Exhibit C-7)	SETS	6/23/95	4/27/99	1.7.2 – 1.7.4, 1.7.7 – 1.7.10
4-42	RFP for DRC Contract	SETS	9/11/95	4/27/99	1.7.1
4-43	DRC Proposal	SETS	11/8/96	4/27/99	1.7.1, 1.7.2
4-44	DRC Contract	SETS	1/24/97	4/27/99	1.7.2 – 1.7.4, 1.7.7, 1.7.8
4-45	RFP for Keane Contract	SETS	12/24/91	4/27/99	1.7.1
4-47	Keane Contract	SETS	6/23/97	4/27/99	1.7.2 – 1.7.4, 1.7.7, 1.7.8
4-48	RFP for Costello Contract	SETS	12/14/92	4/27/99	1.7.1
4-50	Costello Contract	SETS	6/23/97	4/27/99	1.7.2 – 1.7.4, 1.7.7, 1.7.8
4-55	SETS Development Procedures Manual	SETS	11/1/96 4/7/97(CD)	4/27/99	2.1.6
4-58	List of all SETS Programs by Subsystem	SETS	4/11/99	4/27/99	2.2.1
4-60	MIS Database/DBMS Standards	ODHS MIS	6/15/97	4/27/99	2.1.8, 2.2.3
4-65	SETS Test Plan Standards/Models (Standards for Scenario Writing & Sample Scenario)	SETS	10/15/98	4/27/99	2.1.8, 2.2.6
	SETS Test Plan Standards/Models (Task Tracking – System Test Deliverables)	SETS	6/30/97	4/27/99	2.1.8, 2.2.6
	ODHS System Test Methodology	ODHS	9/18/98	4/27/99	2.1.8, 2.2.6
	SETS P/C Platform Testing	SETS	7/1/96	4/27/99	2.1.8, 2.2.6
4-67	Data for TTS/SCLM/PVCS on Trouble Tickets	ODHS	2/5/99	4/27/99	2.4.2, 2.4.3, 2.4.4
4-76	UTC Database Report	SETS	4/9/99	4/27/99	2.5.4, 3.1.1, 3.1.3, 3.1.4
4-77	ODHS Security Standards/Policy	ODHS	1/97	4/27/99	2.6.1
4-78	ODHS Privacy Standards/Policy	ODHS	6/15/98	4/27/99	2.6.1

No.	Document Description	Originator	Document Date	Date Provided	IV&V Reqmt
4-79	ODHS Security/Privacy Risk Analysis	ODHS/ SSDS	No date	4/27/99	2.6.2
4-80	ODHS System Administration Process	ODHS	No date	4/27/99	2.6.3
4-81	ODHS System Back-up/Disaster Recovery Plan	ODHS	4/8/99	4/27/99	2.6.4
4-82	<ul style="list-style-type: none"> • SETS Hardware Specifications 	SETS	2/4/99	4/27/99	2.7.1 – 2.7.5
	<ul style="list-style-type: none"> • SETS System Operation Reports 	SETS	Varies	4/27/99	2.7.6 – 2.7.15
4-85	HB 352 Analysis	SETS	1/9/98	4/27/99	3.1.2, 3.5.1
4-97	(DAS) Standards/Policy for Hublink	SETS	4/13/99	4/27/99	3.1.9
4-99	Performance Benchmarks for System Hardware (Network)	SETS	4/17/99	4/27/99	3.2.3, 3.3.2, 3.3.3
4-104	Screen Prints of Conversion Screens	SETS	4/8/99	4/27/99	3.3.5
4-105	JCL Sample Code	SETS	11/13/97	4/27/99	3.5.10, 3.6.2
4-107	Sample Conversion Error Reports	SETS	Varies	4/27/99	3.3.5
4-109	Most Recent DB Table Diagram	SETS	No date	4/27/99	3.3.9 – 3.3.13
4-125	Introduction to IMS Programming – Student Materials	SETS	4/13/99	4/27/99	2.1.5
5-1	Battelle Documentation – Section 1.0 (Introduction) & Section 7.0 (About Battelle) form its November 1998 Proposal	Battelle	11/98	4/27/99	NA
5-2	Battelle Documentation – IV&V Services and Capabilities	Battelle	No date	4/27/99	NA
5-3	Battelle Documentation – Year 2000 IV&V and Planning Document for Office of Columbus City Council	Battelle	No date	4/27/99	NA
5-4	Battelle Documentation – Y2K IV&V Services Capability Statement	Battelle	12/98	4/27/99	NA
5-5	Battelle Documentation – Company Overview Information from World Wide Web	Battelle	4/22/99	4/27/99	NA
5-6	Battelle Documentation – 1997 and 1998 Annual Report	Battelle	No date	4/27/99	NA
6-1	ODHS MIS Management Assessment – Final Report Presentation	Battelle	5/6/99	6/1/99	NA
6-2	ODHS MIS Management Assessment – Final Report	Battelle	5/99	6/1/99	NA
HO-1	MIS Executive Briefing	ODHS OMIS	3/11/99	4/21/99	NA
HO-2	MIS Executive Briefing Action Item Update – Final	ODHS OMIS	3/12/99	4/21/99	NA
HO-3	SETS Database Diagrams	SETS	1/21/97	4/20/99	NA

2. FINDINGS

The findings in this report are based on the discussions held with State and SETS contractor staff during the site visit on April 19-21, 1999, and upon review of the SETS documentation. This report intentionally does not assess past performance except where applicable to current project status. The focus of this report is on what needs to be accomplished by the State to ensure future project success.

2.1 PROJECT PLANNING AND REPORTING

Ohio's SETS management and staff are highly motivated to prepare for and request a Federal FSA88 certification review for SETS by September 30, 2000. The IV&V assessment team, together with the ACF Central and Regional Offices are aware of the historical reasons for Ohio not meeting FSA88 system certification requirements in a timely manner, including early decisions (transfer system selection), false starts (project reinitiation after vendor termination), and project rebuild efforts.

The State confirmed during the IV&V Review that SETS project planning and reporting has appeared to be disaggregated in the past. Progress has occurred utilizing separate and ad-hoc processes with planning and reporting through individual team project plans, rolled up into a series of daily and weekly meetings attended by a senior management team. SETS currently has limited integrated milestone-based planning, limited integrated management reporting, and limited integrated, activity-based financial tracking. Frequent adjustment of long-term milestones appears to be causing confusion with business partners. An increased turnover of experienced staff has eroded the effectiveness on the informal communication channels previously in place and has shifted management focus to a lower level of task breakout and monitoring.

SETS project history with regard to the planning and reporting of project status appeared to demonstrate insufficient attention being given to the reporting of full and accurate project status. Based on the State's inability or unwillingness to fully disclose detailed project schedules in the past, there is no evidence that appropriate-level project milestones were either planned, monitored, or met. With the full support of Ms. Jacqueline Romer-Sensky, Director of ODHS, the SETS project is moving toward a more open approach toward status reporting, including weekly reporting to the ODHS Director, bimonthly status updates to the Governor, and more open reporting to Federal partners. This new openness by State and SETS Project staff was evident during this SETS IV&V review, and is encouraging as SETS continues in its FSA88 and PRWORA requirements development and implementation.

SETS has no established, formal risk management plan and procedures to ensure that project risks are identified, analyzed, and mitigated. Documentation provided to the IV&V assessment team to support the project's risk management planning was a "proposed" Release Management Process document for the SETS project, dated April 14, 1999. The document, however, was yet to be approved as a formally installed and required process. However, use of this Release Management Process will not, of itself, constitute a formal risk management plan.

2.2 PROJECT ESTIMATING AND SCHEDULING

The State provided evidence to demonstrate the use of estimates, planning, and scheduling during SETS development. However, there is no historical data of how accurate these estimates were as SETS development has progressed.

As presented during the IV&V Review, there has been limited integrated, activity-based financial tracking for SETS. The Office of Financial Services maintains ODHS-wide financial expenditures tracking at a centralized level. Historical data exists on the time, labor, and cost of the SETS project as a whole, but not by activity/tasking. In the past there has been limited tracking to the individual task activity and status. Prior to the IV&V assessment review the project has been operating with a high-level risk management methodology and mid-range milestone mapping (1-3 months) process. During the IV&V review the State presented: a new organizational structure; plans to accelerate the implementation of key processes and tools to better support Federal, State, and County objectives; and plans to split out program components to a more manageable level for engineering/re-engineering efforts, with the overall framework still being formalized.

2.3 PROJECT ORGANIZATION

The State has recently taken steps to improve management oversight of SETS project tasking through the implementation of a new ODHS MIS Table of Organization (TO) with three “development oriented” objectives: 1.) Making Help Desk TIRs a priority; 2.) Requesting FSA88 Certification by September 30, 2000; and, 3.) Mitigation of experience loss. A significant number of the project’s key personnel with decision-making authority were/are contractor staff with what appeared to be less than an optimal level of management oversight by State staff prior to implementation of the new TO.

The SETS organizational structure has no formal and documented support for an independent Quality Assurance (QA) function. This item is addressed further in the Quality Assurance Findings and Recommendations of this report, Sections 2.4 and 3.6 respectively.

2.4 QUALITY ASSURANCE

SETS currently has no clearly defined project-level Quality Assurance (QA) organization/function/ staff and no formal project-level QA plan or procedures. The State provided the ODHS Management Information Services (MIS) Quality Assurance Standards (Doc 66 – MIS:003, Revision 2, dated June 16, 1993) as a primary document supporting requirements for the documentation and maintenance of QA policies, procedures, and artifacts. This document identifies a MIS QA function with specific policies, scope and responsibilities. There was no evidence, however, of the QA function responsibilities defined in MIS:003 flowing down to SETS at the project level in order to implement the ODHS MIS policy.

2.5 REQUIREMENTS MANAGEMENT

The SETS project team provided several requirements documents¹ (SRDs, GSDs, DSDs, etc.) as evidence of the various levels at which SETS software is defined. Standards for generating SRDs, GSDs, and DSDs were also provided. All sample documents provided a sufficient level of detail and sufficient definition of SETS requirements for the particular functional areas addressed. However, there was no evidence in the documents provided that the “Changes/Updates” section of GSDs and DSDs are completed (with change title, date, author, and description) in accordance with Project Notes #PN0061 Standard for SETS General System Design (GSD) Documents and #PN0063 Standard for SETS Detail System Design (DSD) Documents. Completing this section would provide a invaluable history of SETS development, potentially reducing tedious retracing and rework of prior actions, such as requirements definitions and traceability.

Documentation provided to support requirements traceability gives a high-level mapping of test scenarios for the Enhanced Default Requirements. It is not clearly distinguishable how these or other requirements trace back to SETS code modules; DSDs, GSDs, and SRDs; and ultimately to Local, State and Federal requirements/regulations to support full requirements traceability to ensure that all requirements are designed, coded and tested. Without some form of formal requirements traceability it cannot be determined if all SETS system requirements have been allocated.

Good requirements traceability makes it easier to determine if a change has been completely implemented. It also makes it easier to determine the testing and documentation impact of proposed changes. SETS provides a high-level “backward” traceability from SRDs to original requirements, from GSDs to SRDs, and from DSDs to GSDs. However, SETS appears to have no overall traceability (backward and forward) of software requirements through design, code and test phases that clearly demonstrates that all SETS requirements have been implemented and tested. A detailed impact assessment of the failure to support thorough requirements traceability was not within the scope of this review and thus not analyzed.

There is no evidence of formal configuration control of all SETS documents (requirements, design, test plans and procedures, CM and QA plans and procedures, etc.) to ensure that all changes are incorporated into final documents. Project Note #PN0011 SETS Document Approval Process, addresses tracking of new and enhanced GSDs and DSDs. However, no process was found that addresses all other documentation. A result of this project management approach is that additional changes to system documentation, to accommodate new requirements, become increasingly more difficult to implement, with the outcome of each change becoming less predictable in terms of its impact on the overall project schedule, budget, and staffing resources.

¹ Requirements documents reviewed by the IV&V Assessment Review team included SRD (System Requirements Definition), GSD (General System Design), and DSD (Detailed System Design).

2.6 BATTELLE (VENDOR) ACCEPTABILITY AS IV&V SERVICE PROVIDER

Our review also sought, at the request of State management, to assess the qualifications and acceptability of using a current contractor to the ODHS (Battelle) to provide IV&V services should such services be required for the SETS project.

Our review concentrated on an assessment of the vendor's (Battelle) level of independence from the SETS project and from the project's umbrella agency, the Ohio Department of Human Services (ODHS). Our review of the vendor's capabilities and dependencies included existing documentation, such as a November 1998 Battelle Proposal to the ODHS for management and IV&V services, namely, Section 1.0 Introduction and Section 7.0 About Battelle, as well as reports by the vendor regarding aspects of their work for the ODHS. Finally, our review interviewed staff with the SETS project and with ODHS regarding Battelle's scope of work and activities for the ODHS.

Our review found that, though Battelle does indeed appear to possess adequate independence from the SETS project, it does not possess an adequate level of independence from the SETS project's umbrella agency, the ODHS. The level of interaction and coordination with ODHS, due to direct contractual obligations with, management oversight by, and direction from the department, inherently create both real and perceived conflicts of interest for the department were it to make use of Battelle as its IV&V Service Provider.

3. RECOMMENDATIONS

The following recommendations are presented herein based upon the on-site review by the IV&V assessment team on April 19-21, 1999, and analyses of the State's SETS project documentation following the on-site portion of the review.

3.1 INDEPENDENT VERIFICATION AND VALIDATION

The State must acquire Independent Verification and Validation services in accordance with 45 CFR 307.15(b)(10). These services can be obtained from a contractor via formal procurement or from an independent State agency. If a contractor is used, a Request for Proposal (RFP) and the resultant contract must be submitted to ACF for prior approval, regardless of the applicable cost or Federal funding thresholds. The contract must include the names, experience, and skills of key personnel who will actually perform the IV&V analyses. If IV&V is performed by another State agency, similar, equivalent documentation must be submitted, usually taking the form of a detailed Interagency Cooperative Agreement. **The State must then submit an Advance Planning Document Update (APDU) describing in sufficient detail, the prescribed IV&V activities, work products, and costs eligible for Federal financial participation.**²

The IV&V activities to be described must include the level of IV&V services to be provided, consisting of an initial review at contract (or State agency agreement) activation and ongoing semi-annual reviews to monitor the overall status and management of the project's development effort. Many aspects of this level of IV&V services are briefly described below, and will be further defined by the State and its *IV&V Service Provider*. **The IV&V Service Provider must supply all plans, reports of findings, and recommendations to ACF Central and Regional Offices at the same time that they are supplied to the State (including draft documents submitted for comment), as specified in 45 CFR 307.15(b)(10)(ii).**

INITIAL AND SEMI-ANNUAL IV&V REVIEWS

An initial (at contract or State agency agreement execution) and ongoing semi-annual IV&V reviews shall be required to assure the project is on schedule and requirements are being met for Federal certification. The frequency and task level of these reviews will be defined, in what is referred to as the IV&V Management Plan, discussed in Section 3.2. The initial and semi-annual reviews will require the IV&V Service Provider to assess system development in areas including, but not limited to, the following:

- a) Analyze project management and organization, evaluate project progress, resources, budget, schedules, work flow and reporting.
- b) Assess and recommend improvement, as needed, to assure lines of communication between project staff and State management are in place and engaged.

² IV&V services are eligible for reimbursement at the regular (66 percent) rate of Federal financial participation.

- c) Review and analyze project management planning documents.
- d) Review and analyze project software development documents.
- e) Review and analyze processes to ensure they are being documented, carried out, and analyzed for improvement.
- f) Assess the project's CM function/organization by reviewing its reports and making recommendations regarding appropriate processes and tools to manage system changes.
- g) Perform a detailed review of the system documentation (Requirements, Design, Training, Test, Management Plans, etc.) for accuracy, completeness and traceability.
- h) Monitor the performance of the QA function/organization by reviewing its reports and performing spot checks of system documentation.
- i) Assess the project's risk management plan and make recommendations regarding organization, processes, policies, and overall effectiveness of the plan to identify, analyze, and mitigate potential project risks.
- j) Assess and recommend improvement, as needed, to assure software testing is being performed adequately through review of test plans or other documentation and through direct observation of testing where appropriate, including participation in and coordination of peer reviews.
- k) Report on the State's efforts to address the findings and recommendations from this IV&V Assessment Review Report.

Some of the above tasks may be assigned to the State's QA function/organization. In that case, the IV&V Service Provider would be responsible for monitoring the QA provider's activities to assure these tasks are being performed through IV&V review of QA products and reports.

The initial and semi-annual IV&V reviews of system development in the following areas are not currently required for the SETS project. However, the State is advised to select an IV&V Service Provider with the appropriate technical skills and resources available to support such reviews should they become necessary due to significant findings identified during semi-annual IV&V reviews.

- a) Assess and recommend improvement, as needed, to assure continuous stakeholder buy-in, support and commitment, and that open pathways of communication exist among all stakeholders.
- b) Assess and recommend improvement, as needed, to assure appropriate user and developer training is planned and carried out.
- c) Assess and recommend improvement, as needed, to assure maintenance of a data center, including data center input to the project regarding operational and maintenance performance of the application.
- d) Review and analyze system capacity studies.

- e) Review system hardware and software configuration and report on any compatibility and obsolescence issues.
- f) Develop performance metrics, which allow tracking of project completion against milestones set by the State.

FULL TECHNICAL IV&V REVIEWS

Full technical (software and hardware) IV&V reviews are not currently required for the SETS project. However, the State is again advised to select an IV&V Service Provider with the appropriate technical skills and resources available to support such reviews should they become necessary as a result of significant findings during the semi-annual IV&V reviews, such as a need to assess application performance or system capacity issues. These reviews may also be initiated by the State to give it assurance that the project's code base, documentation, etc., is in good shape and to identify and address any problems before they become unmanageable. Full technical IV&V reviews may include, but not be limited to the following areas of review for remediation and elimination of deficiencies:

- a) Perform a detailed review of the software architecture for feasibility, consistency, and adherence to industry standards.
- b) Inventory and review the application software for completeness and adherence to programming standards for the project.
- c) Review the traceability of system requirements to design, code, test, and training.
- d) Analyze application, network, hardware and software operating platform performance characteristics relative to expected/anticipated/contractually guaranteed results and industry standards/expectations.

3.2 IV&V MANAGEMENT PLAN

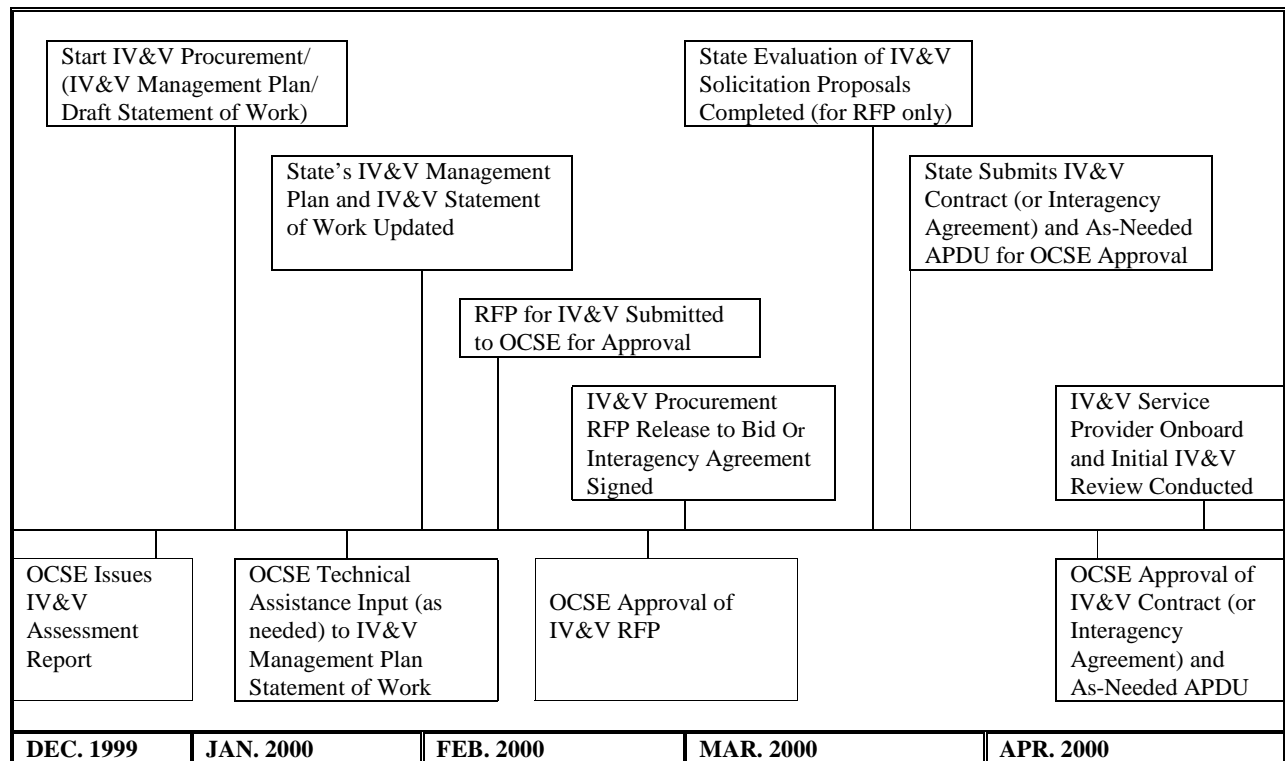
Many of the recommendations contained in this report are presented to the State in the form of general requirements for the State to incorporate into what this report refers to as an *IV&V Management Plan*.³ These recommendations are intended to assist the State in creating and refining an acquisition/procurement document's Scope of Work for the eventual solicitation of an IV&V Service Provider. If the IV&V Service Provider is to be a State agency, the IV&V Management Plan, incorporating these recommendations, should be jointly constructed as part of an Interagency Cooperative Agreement defining the roles and responsibilities between the Title IV-D agency and the State agency serving as the IV&V Service Provider. OCSE is committed to providing technical assistance in the form of documentation review and recommendations, as needed, to assist the State in the development of its Interagency Cooperative Agreement or Statement of Work for the acquisition of the IV&V Service Provider.

³ The need for an IV&V Management Plan, beyond its use as a basis for a Scope of Work for an IV&V Service Provider (whether contract or State agency) is as a detailed plan of action for periodic independent reviews of the SETS project's critical development and implementation phase milestones and deliverables. In addition, it serves as vital documentation to the State's required As-Needed Advance Planning Document Update.

Figure 1. Estimated Critical Milestones Schedule in SETS IV&V Procurement, below presents an estimated timeline presenting what we believe represents an appropriate order for the major milestones in the SETS IV&V procurement phase, from issuance of this report through to the IV&V Service Provider being brought aboard to completion of the IV&V Management Plan. The State should use this estimated timeline as guidance as it develops its initial IV&V Management Plan and subsequent update to the State's Annual APDU. As the State develops a more accurate critical milestone schedule for procurement of IV&V services, caution should be exercised to assure consistency with Ohio's procurement processes and timeframes. If an expedited procurement process is an option for the State, then such an expedited process should be seriously considered for the SETS IV&V procurement. The State's APD will need to incorporate the requirements and activities of the IV&V Service Provider's proposal and IV&V Management Plan.

ACF will periodically reevaluate the IV&V scope of work and frequency for SETS based on project progress or when one or more IV&V triggers occur, as described in 45 CFR 307.15(b)(10)(i), such as failure to meet a critical Advanced Planning Document (APD) milestone."

Figure 1. Estimated Critical Milestones Schedule in SETS IV&V Procurement



3.3 PROJECT PLANNING AND REPORTING

The State, after assessing the current project environment, has implemented a new SETS organizational structure and accelerated the implementation of key processes and tools to better support Federal, State, and County objectives along the following three dimensions: 1.) People, 2.) Process, and, 3.) Technology.

The State must continue in its efforts toward the objectives outlined during the IV&V review, and in its development of realistic (integrated, modular, and milestone-driven) project planning that meets the needs and expectations of all stakeholders and that provides a roadmap to realizing the overall goals of SETS.

It is also recommended that the State continue to utilize Microsoft Project management software for near-term integration of existing milestone plans with eventual conversion to ABT Workbench modules, as appropriate, for project planning and staff-hour reporting to support detailed cost allocation, and to better develop historical data for future project task projections, such as PRWORA requirements implementation. It is understood that ABT Workbench is to be the ODHS MIS standard for future development efforts.

The State must develop and execute a SETS risk management strategy/plan to identify, categorize, analyze, and mitigate project risks.⁴

The IV&V Service Provider should:

- Review and verify that appropriate development milestones and completion dates are planned, monitored, and met;
- Verify that SETS staffing profiles are reasonable and justified with respect to the tasking for which they are developed, and make recommendations on how to resolve identified staffing deficiencies within the project, including recommendations on a resource estimation methodology; and,
- Evaluate the SETS risk management strategy/plan when developed, and make recommendations regarding organization, processes, policies, and overall effectiveness of the plan to identify, analyze, and mitigate potential project risks.

⁴ It is recommended that SETS management attend a Risk Management Workshop similar to one sponsored by the State Information Technology Consortium (SITC), and taught by Software Productivity Consortium (SPC) personnel.

3.4 PROJECT ESTIMATING AND SCHEDULING

As discussed in Section 3.3, it is recommended that the State continue its near-term plan to use Microsoft Project and long-term plan to convert to an ABT Workbench environment to enable the SETS project to support detailed (activity-based) cost allocation and collection of better historical data for future project task projections.

The IV&V Service Provider should:

- Review and verify that the State’s short-term Microsoft Project and long-term ABT Workbench implementation schedules are realistic and that all project goals are met;
- Verify that any scheduled milestones/goals not met are justified and fully explained; and,
- Make recommendations, as appropriate, throughout the transition/implementation period.

3.5 PROJECT ORGANIZATION

The new SETS organizational structure presented by the State during the IV&V Review appears to integrate all areas of the development process, providing a focused commitment to each and establishing sufficient managerial and technical support to areas critical to successful project completion. As further discussed in Section 3.6 of this report, the State must ensure that an independent QA organization is established to monitor the fidelity of all defined processes in all phases of the SETS project.

The IV&V Service Provider should:

- Verify that the SETS organizational structure continues to support all areas critical to successful completion of the project and make recommendations, where appropriate, to improve this structure during the period for which IV&V services are provided; and,
- Verify that the SETS organizational structure adequately supports independent QA for the project and make recommendations, where appropriate, to ensure the implementation of this function.

3.6 QUALITY ASSURANCE

The State must ensure that an independent Quality Assurance (QA) organization is established to monitor the fidelity of all defined processes in all phases of the SETS project. The State must also ensure that the QA organization develop and implement a formalized QA plan, and that associated procedures are developed and implemented for all phases of the project.

The IV&V Service Provider should:

- Evaluate and make recommendations on the project's QA plan, procedures and organization;
- Evaluate the QA organization to verify that the organization has an appropriate level of independence from project management, and that the QA organization appropriately monitors the fidelity of all defined processes in all phases of the project; and,
- Provide recommendations to ensure that formal review and sign-off processes are used to monitor the quality of all products produced by the project, including the use of periodic self-evaluations to support process improvement.

3.7 REQUIREMENTS MANAGEMENT

The current SETS requirements traceability tool is a Paradox database of User Test Conditions (UTCs) mapping these conditions back to functional requirements, and the functional requirements back to system requirements. Recognizing the need for an improved requirements management tool, the SETS project is developing a new SETS requirements system. This new requirements system is to be used across the entire design/development/testing domain of the project. The new system will be based in Oracle and is to be integrated with QA Run (an automated/regression test tool) and Maestro [the development workload management system that will succeed the TIR Tracking System (TTS)].

The IV&V Service Provider should verify that all software requirements can be traced (backward and forward) through the design, code and test phases to ensure that the system performs as intended and contains no unnecessary software elements. For those areas where weaknesses are identified, the IV&V Service Provider should provide detailed recommendations for improvement. These recommendations should, at a minimum and as required, include such aspects as organizational control, resources, and process models.

SETS should continue development of the Oracle-based requirements system as outlined by project staff during the IV&V review. This requirements management method should be instituted by the State and verified by the IV&V Service Provider. The IV&V Service Provider should verify that all SETS requirements and other supporting documentation are under formal configuration control.

3.8 BATTELLE (VENDOR) ACCEPTABILITY AS IV&V SERVICE PROVIDER

Our review found that Battelle does not appear to possess an adequate level of independence from the SETS project's umbrella agency, the ODHS. The level of interaction and coordination with ODHS, due to direct contractual obligations with, management oversight by, and direction from the department, create inherent real and perceived conflicts of interest for the department were it to make use of Battelle as its IV&V Service Provider. . In accordance with Federal regulations at 45 CFR 307.15(b)(10)(ii), limited authority exists to grant exceptions for agencies or vendors under

contract with the State agency requiring IV&V services, with an overriding approval criteria being the independence a potential provider possesses.

Battelle could become an IV&V Service Provider to the ODHS and its SETS project under the following circumstances:

- Become contractually obligated to a different agency than the ODHS (such as the Governor's Office, legislative oversight board, etc.) and through an interagency agreement, conduct IV&V reviews in accordance with a Scope of Work defined by the ODHS; or,
- Subsequent to ODHS contracting with another State agency/entity to provide IV&V services, Battelle successfully bids on such a solicitation from the assigned IV&V agency/entity to become the SETS Project IV&V Service Provider.

APPENDIX A: ACRONYMS

ACF	Administration for Children and Families
AMS	American Management Systems, Inc.
APD	Advanced Planning Document
APDU	Advanced Planning Document Update
BSD	Bureau of Systems Development
CA	Computer Associates
CBT	Computer Based Training
CFR	Code of Federal Regulations
CM	Configuration Management
CSE	Child Support Enforcement
CSEA	Child Support Enforcement Agency
CSES	Child Support Enforcement System
DAS	Department of Administrative Services
DASD	Direct Access Storage Devices
DB	Database
DBMS	Database Management System
DCT	Data Collection Tool
DRC	Dynamic Research Corporation
FFP	Federal Financial Participation
FSA88	Family Support Act of 1988
HO	Handout
H/W	Hardware
IV&V	Independent Verification and Validation
JCL	Job Control Language
MIS	Management Information Services
NA	Not Applicable
OCSE	Office of Child Support Enforcement
ODHS	Ohio Department of Human Services
OH	Ohio
OMIS	Office of Management Information Services
PRWORA	Personal Responsibility and Work Opportunity Reconciliation Act
PVCS	Program Version Control System
QA	Quality Assurance
RFP	Request for Proposals
SCLM	Software Configuration and Library Manager
SETS	Support Enforcement Tracking System
SITC	State Information Technology Consortium
SPC	Software Productivity Consortium
S/W	Software
TTS	TIR Tracking System
UTC	User Test Conditions