IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

ELOUISE PEPION COBELL, et al.,	)	
	)	
Plaintiffs,	)	
	)	
v.	)	Case No. 1:96CV01285
	)	(Judge Lamberth)
GALE NORTON, Secretary of the Interior, et al.,	)	
	)	
Defendants.	)	
	)	

NOTICE OF FILING OF "INTERIM REPORT AND ROADMAP FOR TAAMS AND BIA DATA CLEANUP" AND RELATED JOINT MEMORANDUM

Interior Defendants hereby give notice of the filing of the November 12, 2001, report of their consultant, Electronic Data Systems Corporation ("EDS"), entitled "Interim Report and Roadmap for TAAMS and BIA Data Cleanup" ("EDS November Report") and Secretary Norton's concurrence with the November 13, 2001, joint recommendation of the Special Trustee for American Indians and the Assistant Secretary - Indian Affairs, concurring with and committing to implement the EDS November Report's recommendations.

A copy of the joint memorandum of the Special Trustee and the Assistant Secretary is attached hereto as Exhibit 1. A copy of the EDS November Report is attached as Exhibit 2.

Notice is further given that the attached copy of the EDS November Report does not include pages 161 through 166 or the addendum entitled "Interim Information Assurance Report and Roadmap for TAAMS and BIA Data Cleanup," which will be filed separately accompanied by a motion to file under seal.

Dated: November 20, 2001

Respectfully submitted,

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CERTIFICATE OF SERVICE

I declare under penalty of perjury that, on November 20, 2001, I served the foregoing Notice of Filing of "Interim Report and Roadmap for TAAMS and BIA Data Cleanup" and Related Joint Memorandum, by facsimile only, in accordance with their written request of October 31, 2001, upon:

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United States Department of the Interior

OFFICE OF THE SPECIAL TRUSTEE FOR AMERICAN INDIANS
Washington, D.C. 20240

November 13, 2001

Memorandum

To: Secretary

From: Special Trustee for American Indians
Assistant Secretary – Indian Affairs

Subject: EDS Report – *Interim Report and Roadmap for TAAMS and BIA Data Cleanup*, November 12, 2001

The purpose of this memorandum is to commend to you the adoption of the EDS recommendations regarding the TAAMS and BIA Data Cleanup subprojects, as presented in subject report. As you know from interim briefings, EDS has been assessing and providing status reports on the state of trust reform regarding these Interior subprojects for the past five months. In our view the EDS methodology is a rigorous approach that has led to well-founded findings and solid recommendations for these particular subprojects. The EDS recommendations were initially presented to Interior on October 31, 2001.

In summary, the key recommendations that EDS made reflect the need for dramatic change in Indian trust asset management. EDS recommended that Interior:

- Immediately appoint a single, accountable, Trust Reform Executive Sponsor;
- Develop an overarching Trust Operations Business Model;
- Adopt an overall business and computer systems architecture;
- Adopt a consistent information systems acquisition strategy;
- Implement consistent technology frameworks, methods, and tools;
- Establish a Trust Program Management Center;
- Execute comprehensive staffing plans for all participating organizations.

We have not, however, had sufficient time to evaluate and comment on the "Roadmap" portion of EDS' report, and wish to have further time to complete that process.

A briefing paper with further details on the planning and implementation of the EDS recommendations is attached.

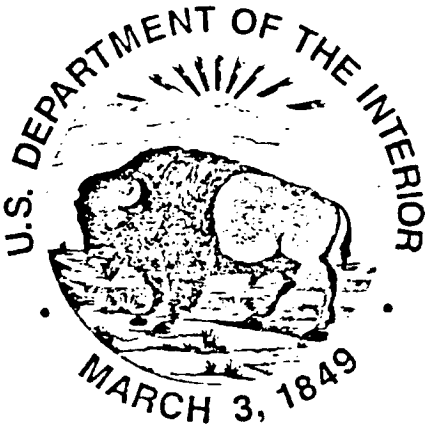
We concur with the EDS recommendations and, with your concurrence, are committed to implementing them as soon as possible.

I CONCUR: _____ I DO NOT CONCUR: _____
Secretary of the Interior Secretary of the Interior

Attachment

DOI Trust Reform

Interim Report and Roadmap For TAAMS and BIA Data Cleanup



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November 12, 2001

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This is the third of three deliverable documents for the TAAMS and BIA Data Cleanup Assessment. DOI comments on the "*Recommendations 'For Comments' Report*" returned as of November 8, 2001 have been considered in revising EDS' recommendations and developing the roadmap contained in this report. The report is labeled 'Interim' to recognize that changes may be incorporated in the "*Final Report on DOI's Trust Reform Initiatives*" based on additional information obtained during the overall Trust Reform assessment.

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Summary Findings, Recommendations and Roadmap

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Summary Findings and Recommendations

Summary Findings and Recommendations in this report reviews the following topics:

- Introduction
- Program Environment
- Successful Change Component
- Strategy, Direction, & Planning
- Business Processes
- Technology & Data
- Organization & People
- Roadmap Summary

Introduction

In June 2001, the United States Department of the Interior (DOI), Office of the Special Trustee for American Indians (OST), contracted with EDS to perform an assessment of business and technical risks of the Trust Asset and Accounting Management System (TAAMS) and its interfaces to other Department applications. The assessment is to determine current project status, identify business and technical issues, recommend improvements, and develop a roadmap for future phases of the effort. Historical information was only considered to the extent necessary to understand the current status.

This report is the last of three deliverables associated with the TAAMS and BIA Data Cleanup assessment effort. The purpose of the first deliverable published October 10, 2001 was to allow DOI the opportunity to review the EDS findings to ensure that EDS' subsequent recommendations and roadmap reports are grounded in accurate perceptions of the current project objectives and issues. The OST distributed that document for review and feedback. DOI comments on "*Observations: Highlights and Comments*" returned as of October 25, 2001 have been considered in developing the EDS recommendations contained in this report.

The second deliverable, published October 31, 2001, presented EDS' recommendations and was again distributed by the OST for review and comment. Subsequent to the release of the "*Recommendations: For Comments' Report*", the DOI asked EDS to accelerate the

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development and publication of a roadmap. As a result, only those comments returned as of November 8, 2001 have been incorporated in this report. Any comments received after that date, together with information obtained during the overall Trust Reform assessment, will be addressed in EDS' *'Final Report on DOI Trust Reform Initiatives'*. That report will be published in January, 2002.

Throughout this report, the TAAMS sub-project, initiated in 1998, refers to the system being developed and deployed to handle the land management portion of Trust Reform. The BIA Data Cleanup sub-project, initiated in early 1999, refers to DOI efforts to ensure data contained in existing or new systems is accurate and complete. BIA Data Cleanup is closely linked to the TAAMS project and has a direct bearing on TAAMS deployment implementation.

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Program Environment

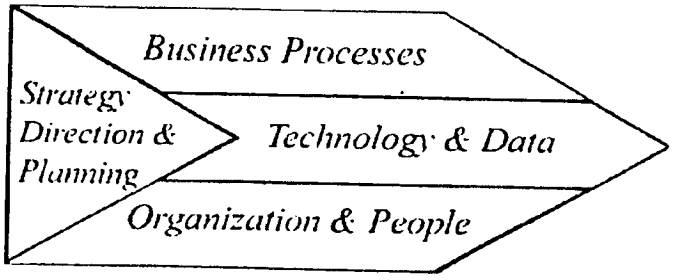
The EDS engagement team has witnessed the complex nature of Trust Reform. As background, it is important to note the extensive and varied nature of the DOI land and trust fund management responsibilities. This includes some 56 million acres of Indian trust lands and approximately 110,000 surface and mineral leases on these trust lands. OST has the responsibility for managing the trust funds or revenue that flow from Indian trust assets. OST maintains approximately 1,400 Tribal trust accounts for 315 Tribal entities and about 285,000 Individual Indian Monies (IIM) accounts. Each year over $800 million passes through the Tribal trust fund accounts and over $300 million passes through the IIM accounts.

This workload exists against a backdrop of differing and at times complex situations related to land ownership, treaty obligations, lease agreements, state and federal laws, and other factors. Further, the BIA has had a 130-year history of decentralized program execution, meaning that roles, business procedures and even terminology vary among the 12 regions and their field offices.

Successful Change Components

Major projects such as TAAMS and BIA Data Cleanup involve more than just the technology itself. Other components integral to project success are illustrated in the following diagram.

Components of Large Scale Change



Each of these four components requires successful execution and linkage to achieve a timely and effective overall result. Our assessment approach includes research and analysis in each of these areas, the findings and associated recommendations of which will be discussed in the pages that follow. The EDS team has interviewed over 80 people, including central, regional and agency DOI staff, tribal leaders and other representatives of the Native American beneficiaries. These interviews took place in Washington, D.C., Albuquerque, NM, and six regions. In addition to these interviews, the EDS assessment team reviewed detailed documentation in all areas.

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We have found significant problems and shortfalls in each area, and overall, have found that the components have not been well integrated. Based upon current experience and problems, both the cleanup tasks and the TAAMS system deployment is not planned to be completed until at least 2004. However, in some areas we have seen positive progress.

In the assessment, executives and directors of DOI, BIA, OST, and other stakeholders involved with Trust Reform evaluated the risks and likelihood of success for each of the Components of Large Scale Change (see diagram on the previous page). There was a high level of agreement among the interviewees who found all but one of the categories (processes) to be of high risk and high importance. Their responses indicate that these areas need to be acted upon immediately to assure a reasonable likelihood of success. The detailed results of these assessments can be found in Appendix B, Executive & Director Interview Results.

EDS was engaged to assess the current status of Trust Reform and to recommend any changes required to ensure the success of Reform Initiatives. EDS' first deliverable, *TAAMS / BIA Data Cleanup Observations: Highlights and Concerns*, documented our findings relative to the current status of Reform activities.

This section identifies high-level findings and recommendations that, if implemented, will increase the likelihood that TAAMS and BIA Data Cleanup will contribute to overall Trust Reform objectives. It then summarizes the current status of the TAAMS and BIA Data Cleanup sub-projects and specific recommendations for each sub-project. These project-specific recommendations are described in greater detail in the Detailed Recommendations Section.

The findings and recommendations for the TAAMS and BIA Data Cleanup assessment are summarized on the following pages.

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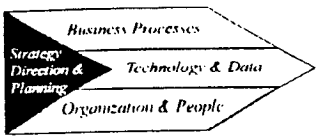
Strategy, Direction, & Planning



Summary Findings

- ***Positive steps have been taken since July 2001 to strengthen overall Trust Reform activities.*** At the Trust Reform level, steps have been taken to provide central, unified direction. A new Assistant Secretary of Indian Affairs was confirmed in July. Recent efforts by the Special Trustee and the Assistant Secretary - Indian Affairs demonstrate an ability to work more closely together. Also in July, the Secretary delegated additional authority to the Special Trustee for overall Trust Reform. In addition, a new position of the Executive Director for Trust Systems and Projects has been established and filled, but this position has no line authority.

- ***Until very recently there has been no overall business and systems architecture for Trust Reform to provide direction for TAAMS.*** The initial version of the architecture was just completed (August 2001). Until now, the TAAMS application development process has been proceeding without being able to link to a larger context. (This area will be discussed in more detail in the EDS Trust Reform Report.)

- ***There is not a defined strategic direction and shared understanding of goals for the TAAMS and BIA Data Cleanup projects.*** The DOI directors, staff members, and external entities perceive there to be a disconnect among DOI management as to the direction of TAAMS and BIA Data Cleanup, as well as Trust Reform on the whole.

- As a consequence of the above, ***it is difficult to define project scope and objectives or set clear priorities for TAAMS and BIA Data Cleanup.*** While the scope and objectives of the sub-projects are identified in the Amended HLIP (2000), there is not a consistent, agreed upon understanding of the scope and objectives by organizations and employees throughout DOI. The specific objectives and priorities, the means for accomplishing them, and the standards against which the projects will be assessed, have not been communicated and monitored throughout the relevant aspects of the Department.

- ***A Metrics Plan is not in place for TAAMS or BIA Data Cleanup.*** A plan is not in place to identify and utilize metrics to measure and monitor the status of the sub-projects. There is not a description of what metrics should be collected, who should collect them, how the metrics will be collected, the frequency they will be collected, and the method by which the information will be distributed.

- ***The TAAMS project is not an integrated effort.*** There is a lack of communication and coordination between TAAMS and other Trust Reform sub-projects. TAAMS does not share the same organizational structure, tools, processes, or project schedule with its interfaces or other sub-projects. There is no centralized program office in place to coordinate the various efforts. Within TAAMS, there is no centralized overall project

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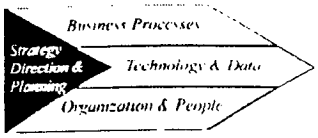
schedule. The schedule is focused on development and does not include areas such as risk management, training, deployment, infrastructure planning, etc.

High-Level Recommendations



I. Immediately Appoint a Single, Accountable, Trust Reform Executive Sponsor. The Trust Reform sub-projects and breach efforts need to be directed by a single, Executive Sponsor. The emphasis of this recommendation is on aligning responsibility with line of authority. The Executive Sponsor should set strategy and direction for all Trust reform initiatives. This leader must have the authority and responsibility to direct all Reform initiatives, setting scope and priorities. This Sponsor must have line authority and control over the budget, subject matter expertise and the staffing required to keep program initiatives on schedule.

The Executive Sponsor's organization should include a Trust Program Management Center (TPMC)providing metrics and progress assessments. The Sponsor needs to ensure that meaningful metrics are being monitored and reported with confidence on a regular basis. The metrics plan should include performance measures on high-level strategies as well as basic sub-project activities.

> Further recommendations regarding the TPMC are found in the *"XI. Establish a Trust Program Management Center"* in the Detailed Recommendation section.

II. Adopt an overall business and computer systems architecture. The Department's business and computer systems architecture needs to be validated, approved and adopted by both the trust business and technical communities. The architecture will provide the needed common language for data and processes across the organization. The TAAMS and BIA Data Cleanup sub-projects should adhere to that architecture. Detailed recommendations concerning the architecture will be provided in overall Trust Reform assessment.

III. Integrate the TAAMS and BIA Data Cleanup sub-projects.

> High-level recommendation III, *"Integrate the TAAMS and BIA Data Cleanup sub-projects."*, has been incorporated into two subsequent recommendations:
>
> *"X. Immediately Appoint One Individual Accountable for TAAMS and BIA Data Cleanup."*
>
> *"VI.1 Clarify and communicate the DOI's BIA Data Cleanup responsibilities and objectives."*

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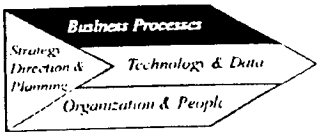
Business Processes

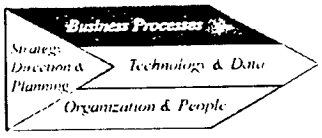


Summary Findings

- ***Some progress has been made in the identification and prioritization of BIA Data Cleanup tasks.*** During the week of August 27, 2001 BIA officials identified and prioritized additional BIA Data Cleanup tasks that address 'duplicate' data issues and known inconsistencies in existing data stores. Regional offices are to determine who will perform these tasks.

- ***Different business models and processes throughout the regions and field offices make TAAMS development complex and costly.*** Reengineering and standardization of trust management business processes was not done prior to TAAMS development. Today, there remains a wide variation of business processes throughout the regions and field offices. Since business processes are not standardized, TAAMS system development must accommodate the requirements of the different DOI locations, prolonging the TAAMS implementation. The variations now in place partly reflect differing circumstances, but often are multiple ways of doing similar tasks.

High-Level Recommendations:



IV. Develop an overarching Trust Operations Business Model.

An overarching Trust Operations Business Model needs to be developed and referenced by all sub-projects and specifically by the TAAMS and BIA Data Cleanup sub-project. The Business Model should have a high level of consistency in the core functions across the organization. The purpose of developing the operational business model is to determine which functions and processes are critical to the organization. The Operational Business Model provides a structured approach to analyze the business practices.

The DOI has not demonstrated the capabilities required to develop a comprehensive Trust Operations Business Model and needs to work an experienced third-party Business and Systems Integration partner to pursue the detailed recommendations below.

The Business Model needs to incorporate the full high-level lifecycle of Trust Management and needs to be consistent, wherever appropriate, with Industry Standards. It must also comply with treaty statutes and case law describing DOI responsibility / duty to beneficiaries. Additional policies, procedures and controls need to be in place to ensure accountability.

The Trust Management Enterprise Architecture (TMEA) provides an overarching view of the trust enterprises and includes a high-level business model as a key component. This high-level business model is the hierarchical parent of the Trust Operations Business Model.

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The Trust Management Enterprise Architecture will be discussed in more detail in the EDS Trust Reform Report.

V. Adopt a consistent Information Systems Acquisition Strategy. Once the Trust Operations Business Model has been approved, a consistent Information Systems Acquisition Strategy needs to be adopted. The acquisition strategy, together with complete and accurate descriptions of the reformed business processes, will become the basis for evaluating the qualifications of integrated Title, Realty and Accounting software solutions. Eventually, once an integrated solution has been chosen that solution will support and enable subsequent changes to relevant business policies and procedures.

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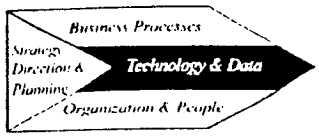
Technology & Data



Summary Findings

- ***The Data Cleanup efforts to date appear to have been driven by technical concerns rather than from a fiduciary responsibility and risk perspective.*** The cleanup strategy has been focused on the TAAMS module and rollout schedule (e.g., title records in selected regions). However, there are substantial variations among the data anomalies in relation to the size of the risk and potential impact to the beneficiaries.

- ***The Current Title Module of TAAMS is being used in four (4) regions.*** It is the system of record in Billings, it is running in parallel in Anadarko, and it is the system of record in Alaska and Eastern Oklahoma for the small fraction of records that have been encoded. In general, progress has been made on the Title module.

- ***The TAAMS requirements determination and gathering process is inadequate.*** TAAMS requirements are changing constantly and these changes are not well controlled. While there are clear high-level requirements for TAAMS, there is not an accurate set of documented, detailed requirements.

- ***Testing teams do not have detailed requirements to test against, making it difficult to measure success.*** Instead, teams test against business functions and check the functionality of the software. Unit, integration, and system test functions and methodologies are good; however, there are no solid requirements to test against. This lack of solid requirements has resulted in implementation delays. The BIA did not participate in developing requirements-driven system and user-acceptance test cases, further increasing the risk that TAAMS would not support business needs.

- ***There is a high risk that the DOI network infrastructure will be insufficient for current and future support of TAAMS.*** A network analysis has not been conducted for the sub-projects, or for the Department as a whole. There is no long-range plan for the network. The infrastructure team has not been involved in overall planning for the sub-projects and therefore has not been able to help forecast impacts on the network or future requirements.

- ***There remain a large amount of anomalies and missing data within the set of information needed to successfully operate TAAMS.*** The full scope of the Data Cleanup task has not been defined, as explained further below:

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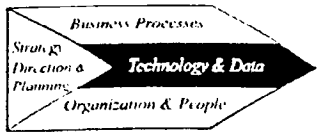
High-Level Recommendations:



VI. Immediately assess the nature and magnitude of the BIA Data Cleanup issue. The DOI needs to move immediately to accurately estimate the nature and magnitude of the BIA data cleanup issues affecting Title, Realty and Accounting business processes. This will require the Department to conduct a statistically valid assessment of data-related issues. It then requires the DOI to develop a strategy and establish priorities that balance its fiduciary responsibilities with stakeholder interests and technical considerations. Data cleanup policies and procedures need to be reviewed to ensure compliance with the Department's strategy and priorities. Finally, effort and resource estimates need to be created for performing the BIA data cleanup effort in line with these priorities.

VII. Accelerate TAAMS Title and Defer Realty and Accounting Functionality. Implementing TAAMS Title nation-wide would simplify related business processes and reduce the risk of introducing errors and inconsistencies in business-critical data stores. It would establish a baseline of certified information against which accounting and distribution data from IRMS, MAD, LISLA and other Realty applications can be reconciled.

The introduction of TAAMS Title must be coordinated with relevant BIA Data Cleanup activities in order to ensure both the initial and ongoing quality of owner, realty and title information introduced into TAAMS.

Realty and Accounting development and deployment efforts, however, should be deferred until the revised Trust Operations Business Model has been developed and the acquisition strategy has been revisited. This will provide the Department with the opportunity to evaluate the extent to which information services support the revised business processes. It will also avoid any risk of reducing the integrity of current processes and services by introducing unverified functionality.

VIII. Implement consistent technology frameworks, methods and tools. Information technology support for Trust-related business processes will, of necessity, embrace disparate architectures and solutions. In order to ensure the fitness of proposed changes to individual components, the DOI needs to adopt and enforce a consistent technology framework, together with methods and tools that facilitate Department-wide development practices.

IX. Establish required computing and communications capabilities. An assessment should be performed to establish levels of network capacity with consideration to the technical architecture and future Title, Realty and Accounting business requirements. The impact of planned initiatives (e.g.: imaging, etc.) needs to be considered in this assessment. Once the required network capacity is established, service standards need to be established that ensure consistent, reliable support for the Department's Trust-related business processes. The results of this assessment may require the DOI to acquire significant assets or services to meet business needs.

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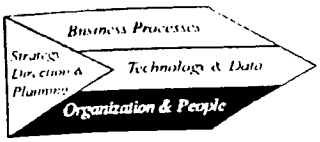
Organization & People



Summary Findings

- ***For the first time, all Trust Reform sub-project managers have come together to communicate status and discuss issues.*** During a two-day session in October, sub-project managers shared project status and activities, lessons learned, success stories and made personal contact with each other for the first time. The Special Trustee for American Indians and the Assistant Secretary for Indian Affairs spoke at the session and developed a common theme for the successful implementation of Trust Reform. The sub-project managers committed to working together to make Trust Reform a success, signing a *Charter for Trust Reform* as a symbol of their commitment.

- ***There is no single lead sponsor or single project team for the combined TAAMS and BIA Data Cleanup efforts.*** There is no one individual with complete authority and accountability for TAAMS and BIA Data Cleanup, and no single dedicated team. TAAMS management is disbursed across the DOI organization and its contractors, resulting in conflicting messages and information regarding organizational priorities and objectives. Reporting lines are not clear, and it is difficult to identify members of teams and committees.

- ***Changes to the project scope and schedule are not managed well.*** There is not an integrated change control process that ensures project changes are communicated, documented, approved, prioritized and implemented. Some contractors were not aware there is a Change Control Board. In addition, DOI leaders do not have a strategy for ameliorating the impact of changes in the judicial or legislative agendas on the core, trust-related DOI operations.

- ***Stakeholder involvement in the development of TAAMS was seen as inadequate.*** Many of the regions, agencies, and Tribes (beneficiaries and stakeholders) do not feel they are involved in decisions regarding TAAMS. As a result, resistance to TAAMS is high.

- ***Internal and external TAAMS communications are inadequate and in some areas do not exist.*** Some outreach initiatives have been undertaken. However, communication plan depicting information to be communicated and agreed upon by key stakeholders does not exist.

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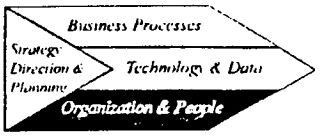
- ***There is a lack of qualified resources to support TAAMS and BIA Data Cleanup.*** The regions and field offices lack resources with enough experience and expertise to adequately support TAAMS and BIA Data Cleanup activities. TAAMS and BIA Data Cleanup have had few, if any, dedicated resources – resources assigned have other jobs and responsibilities and therefore, are often over-committed. Attrition is also a concern. The pool of applicants in the regions and field are limited, and it can take up to two years to get a new hire fully trained and productive. Finally, IT infrastructure staff at the BIA Data Center in Reston, Virginia are lacking adequate resources.

High-Level Recommendations:



Broad organizational issueswill be addressed in the overall Trust Reform assessment. The recommendations below focus on issues specific to the DOI's position regarding TAAMS and BIA Data Cleanup efforts.

X. Immediately appoint one individual accountable for TAAMS and BIA Data Cleanup. Adhering to the 'accountable organization' philosophy, the Department needs to invest the authority and responsibility for TAAMS and BIA Data Cleanup in one individual. This individual needs to report to the Executive Sponsor for TAAMS and BIA Data Cleanup and should directly control all TAAMS and BIA Data Cleanup sub-project planning and execution activities.

XI. Establish a Trust Program Management Center. The Department needs to move expeditiously to establish a Trust Program Management Center (TPMC) operating at the direction of the Executive Sponsor. The function of this TPMC is to establish consistent project management practices initially for TAAMS and BIA Data Cleanup projects and then across all Departmental sub projects. The TPMC will administer the project management tools, establishing standard tables and templates to be leveraged across the organization. It will also provide a central point for reporting and visibility across projects, with capabilities such as an Automated Trust Program Performance Reporting Tool. The reporting tool, or dashboard, would summarize the status of all trust initiatives. The TPMC will be the hub of project communication. It will provide consistent management of processes, schedules, resources, risks, communications and other project management disciplines. The TPMC should provide ongoing project management mentoring and training to project managers across the organization.

Refer to *"XI.6 Implement an Automated Trust Reform Performance Reporting Tool."* in the Detailed Recommendations section for additional information on a performance reporting tool, or dashboard.

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XII. Improve stakeholder involvement in TAAMS and BIA Data Cleanup. The changes inherent in a revised Trust Operations Business Model, and specifically in Title, Realty and Accounting business processes, must be accepted and adopted by all Regions, Land Title Record Offices, Agencies, Tribes (and Tribal representatives), and DOI Bureaus and Agencies. The Department needs to take steps to improve stakeholder participation in the direction and prioritization of Reform-related initiatives. This will ensure the business model reflects DOI objectives and the unique trust characteristics imposed by federal and local statutes, treaties and tribal needs.

> Specific recommendations for improving stakeholder participation will be included in the overall Trust Reform assessment.

XIII. Execute comprehensive staffing plans for all participating organizations. Regional offices are already understaffed in key areas. Further reduction in regional staff will be required to dedicate resources to key trust reform responsibilities. Many of these resources will have to come from existing operation teams. These reductions will jeopardize the Department's ability to comply with ongoing Trust responsibilities. All participating organizations need to plan for, hire and train appropriate numbers of personnel to ensure adequate support for both Reform initiatives and ongoing Title, Realty and Accounting operations.

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Roadmap Summary

Overview

The graphical roadmap below summarizes each of the high-level and detailed activities required to address the highlighted recommendations and concerns identified during EDS' assessment of the TAAMS and BIA Data Cleanup subprojects. A number of these recommendations, which will improve current operations and establish a firm foundation for subsequent efforts, can be completed within the next nine (9) to twelve (12) months:

- Appoint a Trust Reform Executive Sponsor;
- Implement a Trust Program Management Center;
- Appoint a single TAAMS / BIA Data Cleanup Sub-Project Manager;
- Increasing Stakeholder Involvement in TAAMS and BIA Data Cleanup;
- Assess the Nature and Magnitude of the BIA Data Cleanup Issues and take actions to address the highest priority concerns;
- Adopt an Overall Computer and Business Systems Architecture for Title, Realty and Accounting business areas; and
- Adopt Consistent Data Center Operations, Services and Service Levels.

It must be noted that the completion dates and efforts associated with BIA Data Cleanup and the implementation of an integrated Title, Realty and Accounting software solution cannot yet be estimated. These dates depend on the results of the recommended assessment into the nature and magnitude of the data errors that must be resolved in order to assure the integrity of Trust business processes. Similarly, the duration required for successful introduction of an effective Title, Realty and Accounting software solution depends on the outcome of the "make vs. buy" evaluations and other related factors.

The start dates and durations identified in the graphical roadmap reflect the complexity of the current Trust environment and the need to incorporate objectives and priorities of all stakeholders: Departmental organizations and other governmental agencies, tribes and representatives of the Native American beneficiaries. Start dates are considered accurate to within the quarter specified, assuming all prerequisite recommendations have been implemented on schedule. Durations are estimated in three-month increments. More precise estimates and schedules can be produced as specific scopes-of-work are defined.

In the chart that follows, a '1Q' in the 'Start' column indicates that this activity is expected to commence in the first (1st) quarter of the Reform program. '3-6 months' in the 'Duration' column indicates that this activity is anticipated to require from three (3) to six (6) months to complete. An asterisk (*) indicates that the completion date cannot be estimated at this time.

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Interim Report on TAAMS and BIA Data Cleanup

Recommendation	Start	Duration (mos.)	Dependencies	1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q 9Q 10Q 11Q 12Q
I. Immediately appoint a single Trust Reform Executive Sponsor.	1Q	<3		
I.1 Define the objectives, roles and responsibilities of the Trust Reform Executive Sponsor.	1Q	<3		
I.2 Appoint the permanent Trust Reform Executive Sponsor.	1Q	0	I.1	u
I.3 Define the Executive Sponsors reporting and communication lines and the office structure.	1Q	<3	I.1	
II. Adopt an overall computer and business systems architecture.	2Q	6-9	IV	
III. Integrate the TAAMS and BIA Data Cleanup Sub-projects.	1Q	0		
III.3 Adopt event-driven project schedules rather than the previous date-driven schedules.	1Q	0		u
IV. Develop an overarching Trust Operations Business Model.	1Q	9-12	X.3, VII.2, XII	
Title-related Components	1Q	3-6		
IV.1 Define and communicate objectives, core business policies and key performance indicators (metrics).	1Q	<3		
IV.2 Diagram the existing Trust Enterprise Model.	1Q	<3		
IV.3 Develop and communicate the Revised Trust Enterprise Model.	2Q	<3	IV.1, IV.2	
Realty- and Accounting-related Components	3Q	6-9		
IV.1 Define and communicate objectives, core business policies and key performance indicators (metrics).	1Q	3-6		
IV.2 Diagram the existing Trust Enterprise Model.	1Q	3-6		
IV.3 Develop and communicate the Revised Trust Enterprise Model.	2Q	3-6	IV.1, IV.2	
IV.4 Approve and adopt the Revised Trust Enterprise Model	3Q	<3	IV.3	
V. Adopt a consistent information systems acquisition strategy.	3Q	12-15 *	IV.3	*

Recommendation	Start	Duration (mos.)	Dependencies	1Q	2Q	3Q	4Q	5Q	6Q	7Q	8Q	9Q	10Q	11Q	12Q
Title Business Processes.	3Q	6-9													
V.1a Document and adopt reformed business processes	3Q	3-6	IV.3												
V.2a Define, communicate and benchmark performance against objective standards.	4Q	3-6	V.1a												
V.3a Define the computing and communications requirements for each core business process	4Q	<3	V.2a												
Reality and Accounting Business Processes.	4Q	6-9													
V.1b Document and adopt reformed business processes.	1Q	3-6	IV.3												
V.2b Define, communicate and benchmark performance against objective standards.	5Q	3-6	V.1b												
V.3b Define the computing and communications requirements for each core business process	6Q	<3	V.2b												
V.4 Develop a business case for evaluating and acquiring the information services	5Q	3-6	V.3a, V.3b												
Select the IT solution that best matches DOI Trust requirements.	6Q	0	V.4							u					
V.5 Revise Title, Realty and Accounting business processes to incorporate solution requirements.	6Q	3-6	V.4												
V.6 Perform the required software modifications and implement tie integrated Title, Realty, and Accounting solution.	6Q	>12 *	V.4												*
VI. Immediately assess the nature and magnitude of the BIA Data Cleanup issues.	1Q	6-9													
VI.1 Clarify and communicate the Department's BIA Data Cleanup responsibilities and objectives.	1Q	<3													
VI.2 Conduct a statistically valid assessment of Title, Realty and Accounting data to accurately estimate the magnitude of data cleanup issues	1Q	3-6	VI.1												
VI.3 Adopt a balanced strategy for prioritizing data cleanup and conversion efforts	1Q	<3	VI.1												
Communicate the strategy for timing and addressing the BIA Data Cleanup issues.	1Q	0	VI.3							u					
VI.4 Refine the BIA Data Cleanup Process.	2Q	<3	VI.2, VI.3												
VI.5 Estimate the effort required to obtain complete and accurate Title, Realty and Accounting information.	3Q	<3	VI.4												

Recommendation	Start	Duration (Mos.)	Dependencies	1Q	2Q	3Q	4Q	5Q	6Q	7Q	8Q	9Q	10Q	11Q	12Q
IX.3 Standardize BIA information technology operations and processes.	3Q	3-6	IX.1.1												
X. Immediately appoint one individual accountable for TAAMS and BIA Data Cleanup.	**1Q**	**<3**													
X.1 Define sub-project manager objectives, roles and responsibilities.	1Q	<3													
X.2 Define sub-project manager reporting and communication lines.	1Q	<3	X.1												
X.3 Appoint an acting TAAMS / BIA Data Cleanup sub-project manager.	1Q	0	X.2	u											
X.4 Appoint the permanent TAAMS / BIA Data Cleanup sub-project manager.	1Q	<3	X.2, I.2												
XI. Establish a Trust Program Management Center.	**1Q**	**6-9**													
XI.1 Establish interim program management center	1Q	<3													
XI.2 Implement standard Program Management Center functions and roles	1Q	<3	XI.1												
XI.3 Identify and develop/acquire the TPMC infrastructure templates and tools.	1Q	<3	XI.2												
XI.4 Develop and execute a staffing and training plan for TPMC staff and sub-project Managers	2Q	<3	XI.3												
XI.5 Implement consistent scope and change management practices.	2Q	3-6	XI.2												
XI.6 Implement an automated trust program performance reporting tool.	2Q	3-6	XI.2												
XII. Improve stakeholder involvement in TAAMS and BIA Data Cleanup.	**1Q**	**>12**													*
XII.1 Engage stakeholders to establish TAAMS / BIA Data Cleanup objectives and priorities.	2Q	<3	XI.2												
XII.2 Maintain stakeholder involvement in sub-project direction and priorities.	2Q	ongoing *	XI.2												*
XIII. Execute a comprehensive staffing plan for all participating organizations.	**2Q**	**6-9**	**IV.3, V.2, VII, XI.2**												
XIII.1 Establish an interim workforce plan for all participating organizations	2Q	<3	XI.2												
XIII.2 Develop a comprehensive sub-project staffing plan.	3Q	<3	IV.3, VII, XI.2												

Interim Report on TAAMS and BIA Data Cleanup

Recommendation	Start	Duration	Dependencies	1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q 9Q 10Q 11Q 12Q
Communicate nature and magnitude of BIA Data Cleanup issues and the effort required to remedy those issues.	3Q	0	VI.5	u
VII. Accelerate TAAMS Title and Defer Realty and Accounting Functionality.	**1Q**	**27-30 ***	**VI.5, V.1, V.5, VI.1**	*
VII.1 Accelerate the nation-wide deployment of TAAMS Title.	1Q	3-6	VI.1, VII.2	
VII.2 Defer Realty and Accounting Functionality.	1Q	0	V.5	u
VII.3 Defer changes in Agency responsibilities until Realty and Accounting functionality is deployed.	1Q	0	VII.2	u
VII.4 Develop and execute a plan to integrate Title, Realty and Accounting and perform the associated data cleanup and conversion activities.	3Q	9-12	V.1, VI.5, VII.1, VII.2	
VII.5 Comprehensively evaluate the quality and progress of initial cleanup and conversion activities.	3Q	>12 *	VII.1, VII.4	*
VII.6 Develop and execute an integrated assurance and user acceptance test.	4Q	>12 *	VII.5	*
VII.7 Assess the quality of ongoing data cleanup and conversion efforts and monitor organizational performance and productivity.	4Q	>12 *	V.1, VII.5	*
VIII. Implement consistent technology frameworks, methods and tools.	**2Q**	**6-9**	**II**	
VIII.1 Implement a program-wide requirements determination process.	2Q	3-6		
VIII.2 Define and implement an integrated testing process.	2Q	3-6	VIII.1	
VIII.3 Adopt a common systems deployment framework.	3Q	3-6	II, VIII.2	
VIII.4 Adopt consistent lifecycle methodologies for development and maintenance efforts.	2Q	6-9		
IX. Establish required computing and communication capabilities.	**2Q**	**6-9**	**VIII.3, XI.2**	
IX.1.1 Assess the network infrastructure capabilities.	2Q	3-6		
IX.1.2 Assess the network infrastructure requirements.	2Q	<3	IX.2, IX.3	
Determine whether to acquire assets / services to meet defined business needs.	3Q	0	IX.1	u
IX.2 Adopt a standard for core information technology services and service levels.	2Q	3-6	II	

Background

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Background

Background in this report reviews the following topics:

- Interim Assessment Background
- TAAMS and BIA Data Cleanup

Interim Assessment Background

In June 2001, the United States Department of the Interior (DOI), OST, contracted with EDS to perform an assessment of business and technical risks of the Trust Asset and Accounting Management System (TAAMS) and its interfaces to other Department applications. The assessment is to determine current project status, identify business and technical issues, recommend improvements, and develop a roadmap for future phases of the effort.

The Department subsequently contracted with EDS to perform a general assessment of all Trust Reform-related sub-projects, including efforts associated with the four (4) breaches identified in Cobell v. Norton. At the time of the modification, it was noted that the TAAMS assessment, together with an assessment of related Bureau of Indian Affairs (BIA) Data Cleanup activities, was still urgently required.

EDS prioritized and delivered an assessment of the TAAMS and BIA Data Cleanup sub-projects. The initial assessment entitled *TAAMS / BIA Data Cleanup Observations Highlights and Concerns*, was published on 10 October 2001. DOI comments on "*Observations Highlights and Concerns*" returned as of October 25, 2001 have been considered in developing the EDS recommendations contained in this *TAAMS / BIA Data Cleanup Recommendations "For Comments" report.*

This report is being published to provide DOI leaders an opportunity to review EDS' recommendations regarding the TAAMS and BIA Data Cleanup sub-projects. Except where specifically noted, the findings and recommendations contained in this document apply only to those sub-projects. The purpose of this "For Comments" Report is to solicit feedback on the recommendations and, where appropriate, alternatives to EDS' approach.

An *Interim Report on TAAMS and BIA Data Cleanup* will be published after the feedback on the *'For Comments'* report has been reviewed and incorporated. It must be noted that the findings and recommendations identified in the *'For Comments'* and the *'Interim'* reports may change upon a detailed examination of other, related, Trust Reform initiatives. Any changes identified as a result of EDS' assessment of the remaining Trust Reform initiatives will be incorporated in EDS' final report.

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TAAMS and BIA Data Cleanup Background

The management of the Indian Trust Funds has been a long-standing issue that dates back to the 1870s. The BIA has land management responsibilities including some 56 million acres of Indian trust lands and approximately 110,000 surface and mineral leases on these trust lands. The OST maintains approximately 1,400 Tribal trust accounts for 315 Tribal entities with assets in excess of $2.5 billion. In addition, the OST maintains about 285,000 Individual Indian Money Accounts (IIM). Each year over $800 million passes through the Tribal trust funds and over $300 million passes through the IIM accounts. Almost 170,000 tracts of land encompassing 56 million acres of land are managed in the trusts.

In 1994, Congress enacted the American Indian Trust Reform Act, which established the OST. The OST was given oversight responsibility. Later by secretarial order the OST was given responsibility for managing trust funds and revenues that flow from the Indian trust assets. This responsibility includes accepting deposits, investing and disbursing trust funds, as well as audits of the accounts for trust funds held in tribal or Indian IIM accounts.

Part of the Reform Act states, "The Secretary's proper discharge of trust responsibilities of the United States shall include (but are not limited to) the following:

- Providing adequate systems for accounting for and reporting trust fund balances.
- Providing adequate controls over receipts and disbursements.
- Providing periodic, timely reconciliation to assure the accuracy of accounts.
- Determining accurate cash balances.
- Preparing and supplying account holders with periodic statements of their account performance and with balances of their account that shall be available on a daily basis.
- Establishing consistent, written policies and procedures for trust fund management and accounting.
- Providing adequate staffing, supervision and training for trust fund management and accounting.
- Appropriately managing the natural resource located within the boundaries of Indian reservations and trust lands.

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As a result of this legislation, the Special Trustee, reporting to the Secretary of the Interior, became responsible for the oversight, reform, and coordination of the policies, procedures and systems used by various DOI agencies involved in managing Indian trust assets. The Special Trustee was charged with developing a comprehensive strategic plan that would ensure the proper and efficient discharge of the DOI Secretary's Trust responsibilities in compliance with the American Indian Trust Fund Reform Act The Special Trustee submitted a Strategic Plan for Trust Improvement in April 19 . The DOI Secretary had reservations about the strategic plan but agreed that the trust system improvements and data cleanup efforts in the plan should proceed as soon as possible. These decisions on systems improvements and data cleanup became part of the Trust Management Improvement Project (TMIP) and the original High Level Implementation Plan (HLIP). Two of the sub-projects contained in the HLIP were the TAAMS and the BIA Data Cleanup.

Initially, the DOI believed that one system could perform both the asset and accounting functions that were needed. This is typically true in most trust departments in that the trust accounting system usually has a real estate component. However, because of the complexities of the Indian Trust, it was later decided to split the function into two Requests for Proposal (RFP): TAAMS -- which would handle the land management portion, and the Trust Funds Accounting System (TFAS) which would handle the accounting portion. It was thought that by acquiring a commercial off-the-shelf system (COTS) and by modifying it slightly to suit the unique aspects of Indian trust, the system would satisfy the needs for the land management system. It was also decided that instead of trying to modernize the LRIS and IRMS, the functionality contained in these two systems would be incorporated into the TAAMS project. TAAMS would include three major functions: Title, Realty, and Accounting.

TAAMS has been described as the centerpiece or backbone of Trust Reform. It was to be the repository for all of the information regarding the land. It was to contain the description and location of the land; the owners of the land, the valuation of the land; the lease information, the billing, and accounts receivable information. Other groups such as the Mineral Management Service (MMS) would interface their systems with TAAMS. TAAMS, in turn, would feed information, including asset valuation, to TFAS. TFAS then manages the investment and distribution of IIM and Tribal monies.

In 1998, the BIA entered into a service bureau relationship agreement with Artesia, a division of Applied Terravision Systems, Inc (ATS) to use ArtesiaLand, a land leasing system. BIA's concept was that with minor modifications to the system, they would be able to "jump start" the development activity. They also believed the delays associated with traditional development methods were far greater than the risks involved of using this system. The BIA chose to modify ArtesiaLand using an evolutionary prototyping method for rapid development. This method allows for numerous system releases, each one to be closer to the end target than the previous one. The system was targeted to be piloted in July 1999 in Billings, MT. The pilot would last for 100 days. The system would then be deployed to 12 regional offices and 86 agency offices. The complete implementation was to be accomplished by March 2001.

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The BIA Data Cleanup activity was initiated in January 1999. A contractor, Datacom Sciences, Incorporated, was hired to assist in the effort. The effort was to be focused on land title, and resource management information maintained by the bureau in automated systems, microfilm/microfiche and physical hardcopy files/folders. The ultimate goal of Data Cleanup is to ensure that the Indian Trust records are accurate, meet management and operational standards and establish permanent data integrity.

The BIA Data Cleanup effort was aimed at ensuring that the data contained in existing systems or new systems was accurate and complete. BIA Data Cleanup closely linked to the TAAMS effort and has a direct bearing on the success of the TAAMS deployment. BIA Data Cleanup consists of: the correction and conversion of data in the legacy systems, entry of data not previously automated, and seeking missing information required for TAAMS records and transactions. In addition, it also includes the management of data after the initial Data Cleanup is accomplished. The data entered into the electronic systems comes from a number of document sources including contracts, encumbrances and probate orders.

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Sub-Project Status

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Sub-Project Status

Sub-Project Status in this report reviews the following topics:

- TAAMS Summary Status
- BIA Data Cleanup Summary Status

TAAMS Summary Status

TAAMS is a general trust land management system that is intended to efficiently manage Indian lands title and land trust assets. It is aimed at ensuring accurate distribution of funds to individuals and tribes through a proper management framework.

The TAAMS system is to consist of three major areas: Title (including Current Title, Title History, and Name and Address), Realty, and Accounting. Current Title includes capturing title ownership, beneficial ownership, recording, and legal documents or encumbrances. Realty performs several functions—contracting, collection and deposit, distribution, and monetary ownership. These functions are performed for property rights associated with land surface, range, right-of-way, mineral, and forestry. The Accounting module tracks billings and accounts receivable of the trust and is to be implemented in conjunction with Realty.

TAAMS was supposed to be rapidly implemented using a commercial off-the-shelf (COTS) product, with minor modifications. The initial schedule envisioned a phased implementation using the COTS product and making as-needed modifications to support variations in the field. This presumed a high level of consistency between BIA processes and those assumed in the COTS product. However, the BIA has a highly decentralized and varied set of trust management business processes. There is a huge gap between the set of business processes assumed in the COTS product and the actual practices in the field. That gap required either a re-engineering of the existing BIA processes (which could also result in streamlining of activities and improved reporting and monitoring) or an extensive modification to the COTS product. To introduce these modifications without first formally documenting and approving the business processes and requirements is resulting in a difficult software implementation.

Regarding specific areas of functionality, progress has been made in implementing the current Title application with the name & address module. The current title application is being used in four regions. Title history is dependent upon BIA Data Cleanup tasks and is not yet available in production. The business functions in the Realty area are much more complex than Title. During development, critical requirements for defining the Realty application were not appropriately captured, partially due to its accelerated development schedule. This resulted in extensive re-coding, so that the COTS product is at this point a

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custom design. The original COTS product was focused on the leasing and did not have a title component that reflected BIA land management practices. In addition to being time consuming and expensive, the extensive set of changes exposes the system to additional risk of operating problems when placed in production.

A summary of the planned TAAMS deployment schedule for the regions visited by EDS is provided in Figure 1, below. The table is based on perceptions of regional staff interviewed. As shown, the revised deployment schedule for these selected regions now calls for rollout into at least 2003. However, comments from the BIA indicate the rollout will continue until at least 2004. Based on experience to date and the concerns identified in this report, the likelihood of further slippage is high.

Figure 1 - TAAMS Deployment Timetable for Sites Visited by EDS

Regional Office	Title Current	Title History	Name and Address	Realty	Training
Great Plains (Aberdeen)	Schedule for deployment unknown Conversion dates are unknown	Schedule for deployment unknown Conversion dates are unknown	Schedule for deployment unknown Conversion dates are unknown	Schedule for deployment unknown Conversion dates are unknown	Principles of Trust part1 – complete Principles of Trust part 2 – scheduled Nov-Dec 2002
Southern Plains (Anadarko)	Cutover – 7/2000	Still in LRIS Cutover date - Spring 2002	Cutover – 7/2000	Cutover planned for 12 / 2001.	Principles of Trust part1 – complete Title training complete 7/2001 No Realty training planned
Rocky Mountain (Billings)	TAAMS is the System of Record since 29 Dec 2000	Still using LRIS; Conversion – 90% complete;	TAAMS is the System of Record since 29 Dec 2000	Tested conversion process in May 2001	Training conducted for Title, mostly in-house; on going. Some realty training.
Navajo (Gallup)	Scheduled for 2002	Scheduled for 2002	Scheduled for 2002	Scheduled for 2003	
Eastern Oklahoma (Osage)	A specific timeline has not been given. Conversion dates are unknown	A specific timeline has not been given. Conversion dates are unknown	A specific timeline has not been given Conversion dates are unknown	A specific timeline has not been given. Conversion dates are unknown	Currently, there is no worker level training for TAAMS
Northwest (Portland)	Scheduled in Group 3 for 2002	Scheduled in Group 3 for 2002	Scheduled in Group 3 for 2002	Scheduled in Group 3 for 2002	Limited Title training in 2000

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Note: All dates identified above were obtained through phone conversations and interviews with Regional staff. Deployment, in the above table, identifies the point in time when the software is installed in the region. Cut-over is complete when all required data is converted and the legacy application is retired.

To address the requirements problem, a broadened design team was established which represented multiple functions and regions to help reflect the business process variations within the regions. However, our assessment is that the absence of a standardized business model and a shared view of what the system is to accomplish means that there is a high risk of the realty component not accomplishing its goals and providing BIA with a useful capability. In addition, our analysis indicates there are serious questions about the ability of the existing information technology infrastructure network to support TAAMS on a national scale.

BIA Data Cleanup Summary Status

BIA Data Cleanup is focused on preparing complete and accurate data for use in the TAAMS system. It includes both Title and Realty information. It addresses correction of data in existing systems (e.g. Land Records Information System (LRIS), Integrated Records Management System (IRMS), Royalty Distribution and Reporting System (RDRS) and others) and supplying missing information that is required by TAAMS. The Data Cleanup efforts to date have focused primarily on Title, rather than Realty information, based on the rollout schedule of TAAMS. It is in progress in 8 of the 12 regions.

The number, complexity and non-standardization of Title and Realty records within the regions has been a barrier for DOI to estimate the total magnitude of the Title Data Cleanup task. Current records exist in a variety of forms, including paper documents, microfilm, stand-alone computers at field offices, and existing systems such as LRIS. Further missing or conflicting information presents the need to seek out source documents outside of BIA at county offices and other local records locations. Some of the source documents may no longer exist. It is clear that a significant percentage of the data cannot be found on an existing automated system. Therefore, this data cannot be readily accessed and corrected as needed, and loaded into TAAMS.

Preparing data for TAAMS presents a number of unique challenges at the regional offices. Although each regional office uses the identical version of the LRIS software, they vary in the way LRIS is used. Many regions have coded their unique "intelligent numbers" into data fields that require different versions of editing and conversion programs. Many regions also have secondary systems that keep track of information pertinent to TAAMS (i.e., Management Accounting Distribution (MAD), Land Information System for Leasing and Accounting (LISLA), Microsoft Excel spreadsheets). Further, the data conversions need to account for the data stored in systems other than LRIS. This requires a unique set of processes for data preparation at each location.

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The estimate made for the implementation time required for the TAAMS system, was dramatically underestimated when Datacom Sciences, Incorporated began in early 1999.

Realty deals with current lease agreements and does not involve lease history. Therefore, realty data cleanup may be a problem of lesser magnitude than title clean up.

Different BIA regions clearly have varying needs and problems regarding the title and realty data. In the past this has made it more difficult to have an overall plan on how to address data cleanup and establish consistent priorities. The roles and expectations of the contractor and BIA field staff have not been well defined, in terms of the impact on the overall effort.

In late August 2001, BIA officials made some progress in the prioritization of future data cleanup tasks. There is a plan under development to define a standard set of anomaly reports. The BIA Data Cleanup sub-project manager is working to prioritize the anomalies to be addressed (e.g. duplicate information, edit failures, and trace ability of data). Assignment of responsibility for performing tasks at the regional office level is pending.

Each region is determining what data cleanup activities need to take place and are directing internal staff and contractors to complete those activities. The contractor and BIA staff working on the Data Cleanup are dedicated and committed. However, DOI has not applied an adequate number of resources to the effort. The shortage of resources can cause synchronization problems given that the underlying data can change and the delayed approval can be based on inaccurate data.

In conclusion, the BIA Data Cleanup project, under a new project manager, is proceeding at a slow and steady pace. Progress has been made; however, the effort is limited and primarily focused on Title, and the magnitude of the cleanup effort is not known. In addition, there are insufficient DOI resources to work on the backlogs. The Data Cleanup efforts to date appear to have been driven by a systems development approach rather than a mission or business approach. In a mission or business approach, records of highest business priority would be identified and given the highest cleanup priority.

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Approach

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Approach

Approach in this report reviews the following topics:

- Assessment Process
- Recommendations Process
- Roadmap Process
- Information Gathering and Assessment Tools

Assessment Process

The EDS engagement team followed a multi-step strategy designed to obtain the required project information, perform an objective review and analysis, and encourage the participation of all affected stakeholders. This strategy outlined below, was reviewed with the OST and, subsequently with Trust Management Improvement Project Steering Committee, OST Advisory Board, and the Inter-Tribal Monitoring Association.

1. EDS' engagement team members interviewed key stakeholders to obtain their insight into Trust Reform and TAAMS' contribution to reform. These interviews followed an objective instrument for change assessment based on A.T. Kearney's Change Assessment Framework. During these sessions, interviewees tested eight assumptions of change management and were encouraged to identify highlights and concerns associated with those assumptions. Appendix A lists the elements of the A.T. Kearney Change Assessment Framework.

2. The engagement team produced interview summaries identifying key DOI comments and concerns regarding current status, and returned them to the participants for review. The intent of these reviews was to ensure that EDS accurately captured their perspectives in each area investigated.

3. The team obtained the applicable Department documentation to further understand and explore the areas reviewed. The team reviewed extensive documentation on TAAMS, BIA Data Cleanup, and overall Trust Reform. A complete list of documents reviewed will be found in the final EDS report.

4. The engagement team utilized objective references for its reviews such as EDS' Project Management Health Check PLUS. Health Check PLUS is based on the Project Management Institute's Project Management Body of Knowledge (PMBOK).

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5. Business and Technical Team Reviews were conducted to evaluate business policies and procedures and the means by which information technology resources were aligned with those procedures. Business Assurance reviews were conducted that focused on the extent to which core business processes were identified and protected against failures due to changes. Technical Assurance reviews were conducted to address the availability and reliability of information technology-based assets.

The EDS team has interviewed over 80 people, including central, regional and agency staff, tribal leaders and other representatives of the Native American beneficiaries. These interviews took place in Washington, D.C., Albuquerque, NM and six regions. The Change Assessment Framework interviews, the business and technical reviews, the project management health check, and the information assurance reviews, combined with the document reviews, provided insight into the Department's operating practices and are the basis for this initial deliverable. A summary of the key tools used is provided in the next section.

Recommendations Process

In order to develop specific, practical recommendations that would increase the likelihood of success, the engagement team needed to understand stakeholder expectations, program and sub-project objectives, the current status of sub-project activities and the means by which those activities were being governed. The process below describes the steps and activities that were followed in developing the *TAAMS / BIA Data Cleanup Recommendations "For Comments" Report*:

1. EDS' summary findings, as published in the draft *TAAMS / BIA Data Cleanup Observations: Highlights and Concerns Report*, were reviewed to identify those issues with the greatest impact on the TAAMS and BIA Data Cleanup sub-projects.

2. DOI feedback on the *TAAMS / BIA Data Cleanup Observations: Highlights and Concerns Report* was evaluated and changes made to the summary findings to reflect factual issues raised.

3. High-level recommendations were identified, drafted and reviewed by the assessment team. These recommendations were based, where appropriate, on industry standards and practices for large-scale change initiatives.

4. The high-level recommendations were then decomposed into practical, detailed recommendations that identify specific actions that, if implemented, will improve the effectiveness of Reform-related initiatives and the TAAMS and BIA Data Cleanup sub-projects in particular.

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Roadmap Process

In the "TAAMS / BIA Data Cleanup Recommendations: 'For Comments' Report", EDS identified high-level and detailed recommendations that, if implemented, will position the DOI to achieve Trust Reform objectives related to Title, Realty and Accounting business processes and data. These recommendations, together with the feedback received by November 8, 2001, formed the foundation of a roadmap, a step-by-step sequence of activities, which must be performed by the Department in a pre-determined order to implement EDS' recommendations. The steps below describe the assessment team's approach to developing that roadmap.

1. High-level recommendations were mapped with business requirements to identify required Roadmap activities. These activities ensure essential change components are planned, communicated, implemented and managed by all participating organizations.

2. In some cases, detailed recommendations have been added or renumbered in order to reflect the sequence of activities required to implement high-level recommendations.

3. Dependencies that would affect the timing or success of Reform efforts were then identified for each activity defined above. These dependencies describe the nature of the relationship between Roadmap activities and highlight issues that must be addressed in order for the Department to make progress towards reform.

4. An order-of-magnitude assessment was performed to define an approximate duration of each Roadmap activity. This assessment divided recommended activities into five categories:

   - Activities that can be performed in one (1) to three (3) calendar months, typically within a single organization;
   - Activities that will require from three (3) to six (6) months to complete and may affect multiple organizations contributing to related business processes;
   - Activities that will require from six (6) to nine (9) months to complete and may affect multiple organizations contributing to related business processes;
   - Activities that will require from nine (9) to twelve (12) months to complete and may affect multiple organizations contributing to related business processes; and
   - Activities that will require in excess of twelve (12) months to complete and may require the Department to integrate the efforts of internal and external organizations contributing to multiple business processes.

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5. The dependencies and estimates were then used to establish the timeframe within which activities would be initiated.

   - Immediate - Activities that need to be undertaken within 0-3 months and are considered pre-requisites for continuing Trust Reform;
   - Subsequent – Activities that commence after the first 3 months

6. Finally, the assessment team identified performance considerations; decision points, key performance indicators, risks and milestones that must be monitored by the Department to measure or assess its progress in Trust Reform. These considerations are meant to be representative rather than exhaustive. One of the essential issues that must be addressed is the need to identify a comprehensive suite of considerations that must be monitored to accurately assess progress towards Reform.

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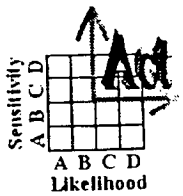
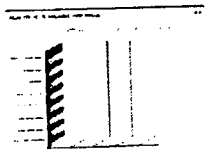
Information Gathering and Assessment Tools

The engagement team used several information gathering and assessment tools:

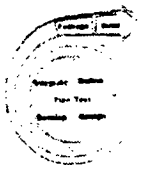


A.T. Kearney ABCD Change Assessment Interview Framework:
Derived from A.T. Kearney's change assessment methodology, this framework captures executive- and director- level insight into the objectives, methods, capabilities and resources available to implement enterprise-wide changes.

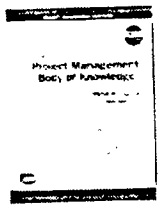


EDS Program Health Check PLUS®:
Based on the Project Management Institute Autohealthcheck Survey, the Health Check PLUS® enables EDS Project Management Consultants to capture and objectively evaluate the strategies, methods and tools used to monitor and control program activities.

EDS Information Assurance Assessment Process:
Integrated questionnaires and processes that evaluates the extent to which core processes and data are protected against unauthorized access or modification.



EDS Team Review Frameworks:
Technical Review frameworks define agendas used to explore and evaluate the extent to which program/ project scope and requirements are defined and matched to business and technical designs, produced components, test plans, training efforts and deployment activities.
Business Review frameworks define agendas that combine general business issues (for example organizational readiness and business continuity) with a detailed examination of the policies, procedures and resources committed to program activities. Business and technical frameworks are grounded in EDS' System Life Cycle 3.0 and the Project Management Institute's Project Management Body of Knowledge (see below).



PMI Project Management Body of Knowledge (PMBOK):
PMBOK establishes a standard against which program/ project management activities are measured. The functional areas addressed are: Project Integration, Scope, Time Management, Cost/Procurement Management, Quality, Human Resource Management, Communications and Risk.

RightStep®

EDS RightStep®:
An EDS proprietary methodology for aligning a client's Information Technology investments with long-range business objectives and strategies.

EDS System Life Cycle 3.0®:
Consistent with industry standards, EDS' System Life Cycle methodology enables the assessment team to evaluate the extent to which current information technology policies, methods and tools reliably and economically support client requirements.

Detailed Recommendations

The information contained in the sections that follow provides supplementary details of the high-level recommendations stated in the previous sections.

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Detailed Recommendations

Detailed Recommendations in this report reviews the following topics:

- Strategy, Direction & Planning
- Business Process
- Technology & Data
- Organization & People

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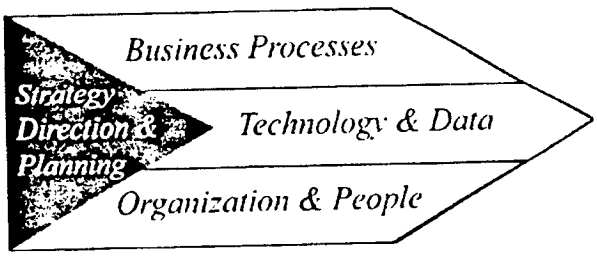
Strategy, Direction & Planning



In a healthy program of change, the objectives and strategies will be clearly defined, agreed and communicated to all stakeholders. A system of governance will be established to monitor and control progress toward those objectives.

Strategy, Direction & Planning

I. Immediately Appoint a Single Trust Reform Executive Sponsor.

The key to successfully implementing the Reform initiatives (including TAAMS and the BIA Data Cleanup sub-projects) is to create an accountable organization with the capabilities and capacity to execute the required activities. Accountability is only attained when authority and responsibility are linked throughout the organization, beginning with a DOI-level Trust Reform Executive Sponsor.

A Trust Program Management Center (TPMC) providing metrics and progress assessments should support the Executive Sponsor.

> Further recommendations regarding the TPMC are found in *"Organization and People"* in the Detailed Recommendation section.

I.1 Define the objectives, roles and responsibilities of the Trust Reform Executive Sponsor.

The DOI needs to define the specific objectives against which the Trust Reform Executive Sponsor's performance will be measured. These objectives need to be considered as the Department defines roles and responsibilities that integrate the responsibility for achieving Trust Reform with the authority to control Reform-related activities.

The Department needs to establish the Trust Reform Executive Sponsor's key qualifications. Two of these qualifications should be extensive knowledge of the Trust environment and a successful track record leading large, complex organizations undergoing significant cultural changes.

The Executive Sponsor should set, and communicate, strategy and direction for all Trust efforts. This leader must have the authority and responsibility to direct all Reform initiatives, setting scope and priorities. This Sponsor must have line authority and control over the budget, subject matter expertise and the staffing required to keep program initiatives on schedule.

I.2 Appoint the permanent Trust Reform Executive Sponsor.

The individual appointed as Trust Reform Executive Sponsor must be capable of fulfilling each of the roles and assuming all responsibilities and the authority required to achieve all Reform objectives.

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I.3 Define the Executive Sponsor's reporting and communication lines and the office structure.

The Executive Sponsor's lines of reporting need to be clearly defined and communicated to all organizations contributing to Trust Reform initiatives. The sponsor must be able to rely on the cooperation and support of all key Departmental Bureaus, Agencies and Offices in order to establish the momentum needed to achieve Reform objectives.

At the same time, the DOI needs to define an office structure for the Executive Sponsor that incorporates sufficient resources to plan, execute, monitor and control Trust Reform initiatives.

II. Adopt an Overall Business and Computer Systems Architecture.

The overall business and systems architecture needs to be validated, approved and adopted by both the trust business and technical communities. This will provide the needed common language for data and processes across the organization. It should provide a clear definition of the TAAMS interfaces. TAAMS needs to coordinate and integrate with the focus and purpose of the architecture.

> Detailed recommendations concerning the Department's computer and business systems architecture will be provided in overall Trust Reform assessment.

III. Integrate the TAAMS and BIA Data Cleanup Sub-projects

The TAAMS and BIA Data Cleanup sub-projects are heavily interdependent. The nature and extent of these interdependencies require the DOI to integrate sub-project efforts and develop a coherent approach to the introduction of new business processes and the information systems that support those processes.

The TAAMS sub-project objectives cannot be fully achieved until complete and accurate Title, Realty and Accounting information is available. Likewise, the quality of Title, Realty and Accounting information will continue to degrade until it resides in an integrated data store and is supported by coherent business processes. Existing legacy systems (primarily LRIS and IRMS) have overlapping data stores and no mechanisms for synchronizing updates.

Current business policies require Regions to update LRIS with changes that ultimately affect the financial interest in trust properties, but do not ensure that these changes are reflected in Agency-based Realty and Accounting systems (IRMS, MAD, LISLA, etc.). As a result, even data that has been through the BIA Data Cleanup procedures is becoming increasingly unreliable.

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III.1 Invest the authority and responsibility for TAAMS and BIA Data Cleanup in one individual.

> *"III.1 Invest the authority and responsibility for TAAMS and BIA Data Cleanup in one individual."* has been incorporated in *"X. Immediately Appoint One Individual Accountable for TAAMS and BIA Data Cleanup."*.

III.2 Clarify and communicate the strategic direction and goals for TAAMS and BIA Data Cleanup.

> *"III.2 Clarify and communicate the strategic direction and goals for TAAMS and BIA Data Cleanup."* has been incorporated in *"VI.1 Clarify and communicate the Department's BIA Data Cleanup responsibilities and objectives."*.

III.3 Adopt event-driven project schedules rather than the previous date-driven schedules.

TAAMS and BIA Data Cleanup sub-project efforts have historically been driven by commitments to specific dates rather than by the effort required to assure the integrity of the deliverables that needed to be produced. As a result, sub-project teams were frequently forced to choose between the quality or the content of the deliverables and, in either case, the business processes – or changes to business processes – suffered and were delayed.

The Department needs to adopt a program management policy in which schedules are driven by the effort required to complete deliverables. Reasonable resources then need to be committed to sub-project activities to ensure that deliverables are produced in a timely manner.

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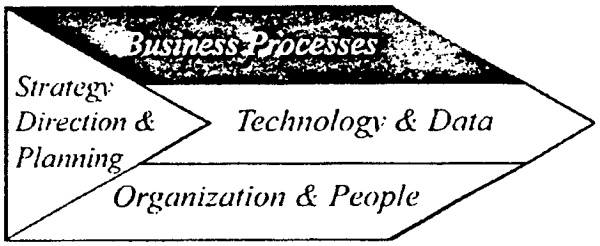
Business Process



In a healthy program of change, core business operations and processes will be realigned with enterprise objectives. Steps will then be taken to ensure that business operations will support key offerings prior to, during and after relevant changes are implemented.

Business Processes

IV. Develop an Overarching Trust Operations Business Model.

An overarching Trust Operations Business Model needs to be developed and referenced by all sub-projects and specifically by the TAAMS and BIA Data Cleanup sub-project. The Business Model should have a high level of consistency in the core functions across the organization. The purpose of developing the operational business model is to determine which functions and processes are critical to the organization. The Operational Business Model provides a structured approach to analyze the business practices.

The DOI has not demonstrated the capabilities required to develop a comprehensive Trust Operations Business Model and needs to work an experienced third-party Business and Systems Integration partner to pursue the detailed recommendations below.

IV.1 Define and communicate objectives, core business policies and key performance indicators (metrics)

The first component of a Trust Operations Business model is a statement of the objectives, core business areas, policies and procedures that reflect the Department's Trust legal and fiduciary obligations. These policies also need to address the means by which the DOI will manage the risks associated with implementing and maintaining reformed business processes and the retention and maintenance of legal Trust documents. As core business areas and procedures are identified and defined, they need to be compared with industry trust standards to identify applicable commercial standards and performance indicators. On a broad basis, this means assuring that fair returns are being realized on each category of leaseholds (e.g. forestry, grazing, etc.). Benchmarks for separate Trust system processes should be established. Where commercial standards and benchmarks are not applicable, the Department needs to define standards and measures against which enterprise performance will be measured. Information from these areas should be capture in an Automated Trust Program Performance Reporting Tool and provided to Department leaders as wells as external stakeholders.

> Refer to *"XI. Establish a Trust Program Management Center."* for additional insight regarding the Automated Trust Program Performance Reporting Tool.

IV.2 Diagram the existing Trust Enterprise Model

The basis for reforming, or transforming, an enterprise activity lies in a clear understanding of enterprise objectives and capabilities. In order to understand the Department as a Trust enterprise, efforts need to be undertaken to identify and define the role and contribution of organizations currently participating in Trust activities, the basis of relationships

between those organizations, and the drivers affecting key relationships. This information, together with the metrics identified during the process described above, is used to baseline organizational performance against Departmental objectives.

IV.3 Develop and communicate the Revised Trust Enterprise Model

Understanding the gap between current performance and accepted industry standards (where appropriate) and internal benchmarks, the Department needs to develop a strategy for achieving Trust objectives and revise the Trust Enterprise Model to reflect an organization capable of executing that strategy. The resulting enterprise model should not simply reflect existing business operations, but pattern itself on successful private sector trust models, modified as required to reflect important differences in the Department's Trust responsibilities. This enterprise model should be consistently implemented except where tribal needs or local statutes require specialization. After any appropriate organizational and procedural changes have been implemented, organizational performance needs to be re-baselined and monitored. Reformed business process descriptions need to incorporate descriptions of the procedural interfaces and relationships with compacted and contracting tribes.

> Recommendations regarding the creation of an overarching Trust Operations Business Model will be revisited in EDS' overall Trust Reform assessment.

IV.4 Approve and adopt the revised Trust Enterprise Model.

Once the revised Trust Enterprise Model has been formalized and documented, the Department needs to formally approve that model as the basis of future Trust policies and procedures. The approved Trust Enterprise Model then needs to be communicated to all participating organizations and stakeholders.

V. Adopt a Consistent Information Systems Acquisition Strategy.

Once the Trust Operations Business Model has been approved, a consistent Information Systems Acquisition Strategy needs to be adopted. The acquisition strategy, together with complete and accurate descriptions of the reformed business processes, will become the basis for evaluating integrated Title, Realty and Accounting software solutions. Eventually, once an integrated solution has been chosen, that solution will drive subsequent changes to relevant business policies and procedures.

Without current, complete and accurate process documentation, the Department risks introducing systemic failures into core business operations (and fiduciary responsibilities) when deploying new, or revised, information services.

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Detailed recommendations *"V.1 Document and adopt reformed business processes."*, *"V.2 Define, communicate and benchmark performance against objective standards."* and *"V.3 Define the computing and communications requirements for each core business process."* describe the process by which the revised Trust Enterprise Model will be decomposed into business processes and functional requirements. Each of these steps will be repeated twice, once for Title-related business processes and a second time for Realty and Accounting business processes.

V.1 Document and adopt reformed business processes.

The Department needs to document and adopt consistent policies and procedures that support core Title, Realty, Accounting business processes and land management disciplines. These policies and procedures need to then be compared with commercial trust practices to identify process and performance standards applicable to the Department's Trust environment.

V.2 Define, communicate and benchmark performance against objective standards.

As noted, EDS recommends that the DOI adopt commercial standards whenever Departmental Trust responsibilities don't specifically require specialization. Initial performance standards and benchmarks must be set high enough to retire procedural backlogs within a reasonable period of time. Ongoing benchmarks must enable the Department to quickly determine if organizational productivity is falling behind the incoming workload so that personnel and procedural changes can be made before beneficiary service levels are impacted.

Using the standards and benchmarks developed above, the Department needs to baseline organizational performance and productivity. This baseline can be used to identify where additional resources will be required to overcome initial procedural backlogs. The baseline will also be used to evaluate progress toward Reform objectives on an ongoing basis.

V.3 Define the computing and communications requirements for each core business process.

The reformed business process descriptions developed above need to be decomposed to identify required information technology services. High-level and detailed business requirements documents reflecting all Title, Realty and Accounting policies and procedures need to be produced and approved.

Refer to *"IV. Develop an Overarching Business Model."* above for further information regarding an assessment of computing and communications requirements.

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The requirements documentation needs to address application-specific software requirements. Requirements documents also need to address issues raised by the Department's Computer and Business Systems Architecture and computing and communications infrastructure.

> Refer to *"IX. Establish Required Computing and Communications Capabilities"* in the Detailed Recommendation section for further information regarding an assessment of computing and communications requirements.

V.4 Develop a business case for evaluating and acquiring the information services.

Using the high-level and detailed requirements, the Department needs to develop a business case for the evaluation and acquisition of appropriate information technology services. Four options are currently available to the Department:

- Modify ATS Inc.'s Trust Asset and Accounting Management System (TAAMS);
- Modify existing host-based systems (LRIS and IRMS);
- Acquire a new, integrated Commercial-Off-the-Shelf (COTS) software solution (possibly comprised of multiple packages); and
- Define, produce and deploy a new custom-developed software solution.

The evaluation of available software solutions should be based on functionality, flexibility, and interoperability and anticipated Total Cost of Ownership (TCO) of each alternative. Total Cost of Ownership addresses the direct and indirect organizational, software and infrastructure costs associated with acquiring (or developing) deploying and supporting Information Technology services.

In order to establish an objective basis for the TCO analysis, the Department needs to identify a reasonable timeframe for support. The support period should range from five (5) to ten (10) years.

> Refer to *"VIII. Implement Consistent Technology Frameworks, Methods and Tools"* in the Detailed Recommendation section for more information regarding acquisition policies and procedures.

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V.5 Revise Title, Realty and Accounting business processes to incorporate solution requirements.

Once the analysis is complete and a solution chosen, the Department then needs to revise and adopt business policies and procedures to reflect any constraints enforced by the information services solution.

V.6 Perform required software modifications and implement the integrated Title, Realty and Accounting solution.

After identifying any required business process changes, the selected software then needs to be modified to meet business requirements and implemented consistently across the Department. Implementation plans must be integrated with the BIA Data Cleanup and conversion efforts to ensure that data is available for conversion into the new solution in a timely manner.

Refer to *"VII.4 Develop and execute a plan to integrate Title, Realty and Accounting and perform the associated data cleanup and conversion activities."* in the Detailed Recommendation section for more information regarding the issues associated with integrating software deployment and data cleanup and conversion efforts.

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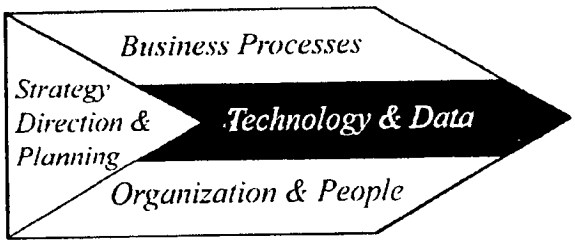
Technology & Data



In a healthy program of change, the ownership and stewardship of all critical data will be aligned with organizational roles and responsibilities. Information Technology services will then be aligned to ensure adequate support for organizations and processes.

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Technology & Data

VI. Immediately Assess the Nature and Magnitude of the BIA Data Cleanup Issue.

The DOI needs to move immediately to accurately estimate the nature and magnitude of the BIA data cleanup issues affecting Title, Realty and Accounting business processes. This will require the Department to conduct a statistically valid assessment of data-related issues. Subsequently, it would require the DOI to develop a strategy and establish priorities that balance its fiduciary responsibilities with stakeholder interests and technical considerations. Data cleanup policies and procedures need to be reviewed to ensure compliance with the Department's strategy and priorities. Finally, effort and resource estimates need to be created for performing the BIA data cleanup effort in line with these priorities.

VI.1 Clarify and communicate the Department's BIA Data Cleanup responsibilities and objectives.

The DOI needs to work with all stakeholders to clarify and communicate the impact that Departmental fiduciary responsibilities have on data cleanup objectives. The Department has a responsibility to produce and maintain a complete and accurate accounting of Trust assets, ownership and monies.

Its first objective, however, should be to identify and validate the information required to support ongoing Trust obligations. These ongoing obligations revolve around the DOI's ability to maintain ownership and accurately collect, distribute and report on the status of funds associated with the utilization of Trust assets in a timely manner. In order to meet these obligations, the Department must have integrated Title, Realty and Accounting business processes and information services. These services require:

- Only as much current and historical information needed to support the probating, re-probating and / or modification of estates as required by current legislation and judicial decisions (for example the history required to satisfy the departments responsibilities regarding ILCA and Youpee); and
- Sufficient current leasing and accounting information to calculate owner interest in the financial proceeds of Trust assets.

Once the first objective has been achieved, Reform efforts should be directed towards compliance with the overall fiduciary responsibility. As stated above, that responsibility requires a full and accurate accounting of Trust assets and the income and distribution derived from those assets. To meet this responsibility, the Department must obtain a complete set of historical Title, Realty and Accounting information.

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In order to achieve these objectives, the Department must define the scope and timing of specific data cleanup efforts, the strategies that will be employed to achieve data cleanup objectives and the key performance indicators that will be used to monitor the progress of data cleanup activities:

- The scope needs to clearly define the objectives that must be achieved in order for TAAMS and BIA Data Cleanup efforts to succeed.
- The strategies for achieving those objectives need to be defined and agreed by representatives of all major stakeholders (central organizations, Regions, Agencies, Tribal leaders and representatives) and adopted by all participating organizations.
- Specific, measurable metrics, or key performance indicators, need to be identified that will indicate the progress that has been achieved, and still remains, regarding each objective.

These objectives and strategies need to be consistently and repeatedly communicated to all internal and third-party stakeholders contributing to the data cleanup activities. These communications need to stress the progress that has been made to date, the anticipated effort required to complete each phase of the data cleanup initiative and the status of any issues that must be resolved in order for the data cleanup efforts to proceed smoothly.

VI.2 Conduct a statistically valid assessment of Title, Realty and Accounting data to accurately estimate the magnitude of data cleanup issues.

The Department needs to administer a statistically valid assessment of Title, Realty and Accounting data that stratifies records by location, age and subject area. This sample must incorporate records maintained in all Regions, Land Title Record Offices (LTROs) and Agencies. It should include all forms in which different data is maintained, e.g. automated records, microfilm and microfiche, stand-alone computers and hardcopy records. It should also address records maintained by Tribes that have assumed full or partial responsibility for administering Title, Realty or Accounting business processes.

Source documents must be obtained, where they exist, for all records included in the sample. Sample records are then compared with source documents to assess the nature and size of BIA Data Cleanup and conversion issues.

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VI.3 Adopt a balanced strategy for prioritizing data cleanup and conversion efforts.

The Department, working with stakeholder representatives, needs to define and adopt a balanced strategy for prioritizing data cleanup and conversion efforts. One method of balancing the interests and responsibilities of multiple stakeholders is to develop a series of factors that represent stakeholder interests. These factors can be used to weigh the impact and importance of data cleanup issues. At a minimum, these factors must address:

- Fiduciary responsibilities;
- Beneficiaries' interests;
- Business process requirements; and
- Technical considerations and constraints.

Each issue identified in the statistical assessment is then evaluated to determine the impact it has on stakeholder interests and the relative priority that should be assigned to corresponding data cleanup and conversion activities.

> Refer to *"VII.1 Accelerate the nation-wide deployment of TAAMS Title."* in the Detailed Recommendation section for more information regarding the impact of a balanced data cleanup strategy on the TAAMS deployment schedule.

The following detailed recommendations address the means by which the Department can develop, and estimate the effort and resources required to execute, policies and procedures that reflect stakeholder priorities and the nature and magnitude of the data cleanup and conversion issues.

VI.4 Refine the BIA Data Cleanup process.

The existing BIA Data Cleanup activities follow a rigorous process that enforces consistent business rules and incorporates extensive error reporting and resolution procedures. Current strategies divide data cleanup activities into phases. Initial cleanup activities are performed 'in place' – data integrity issues are corrected and the legacy system of record (LRIS, IRMS, etc.) is updated. Subsequent, or post-conversion, data cleanup activities result in updates directly into TAAMS. Due to the complex nature and the extent of the underlying issues, EDS recommends the following suggestions as improvements to an otherwise sound Data Cleanup and Conversion process.

BIA Data Cleanup efforts need to be prioritized based on Departmental objectives and the strategies discussed above. Existing legacy data needs to be segregated based on these priorities. Lower-priority data needs to be archived until the resources are available to validate and introduce that data into the integrated Title, Realty and Accounting software solution.

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Adopt a process that assures the ongoing quality of data that is cleaned "in place". The DOI needs to develop and adopt a process that assures the ongoing integrity of data that is corrected and returned to their legacy systems. This process needs to incorporate notification and confirmation tracking procedures to ensure that changes impacting both Title and Realty are applied in the Regions and in the Agencies.

Before data is introduced into production data stores, a reasonable and representative sample of Trust records should be validated against original source documents to assess the quality of initial conversion efforts. The incidence of error determined in the initial sampling process will determine the frequency with which electronic records will be verified against the original source documents. Manually entered records should be placed in an interim data store and validated with the same frequency as electronically converted records prior to their introduction into TAAMS.

Introduce measures that will assure only validated data is introduced into the production system. Based on the verification results, the Department needs to make a prudent decision as to whether the records, from which the sample was taken, should be introduced into the production environment.

Introduce a recurring audit function that ensures the ongoing quality of the data and the business processes. In addition to assuring the quality of data as it is introduced, the Department needs to adopt measures that will monitor the business processes and information services that are used to manage that data on an ongoing basis.

In addition to the suggestions identified above, the Department needs to develop comprehensive metrics that measure the quality and progress of the BIA Data Cleanup and Conversion tasks.

Refer to *"VII. Accelerate TAAMS Title and Defer Realty and Accounting Functionality."* in the Detailed Recommendation section for more information regarding audit policies and procedures.

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VI.5 Estimate the effort required to obtain complete and accurate Title, Realty and Accounting information.

The Department needs to develop a comprehensive estimate of the effort and resources that will be required to obtain complete and accurate Title, Realty and Accounting information. Data Cleanup and Conversion estimates need to include:

- Standard project management functions;
- Pre-conversion data cleanup activities;
- Business rule development;
- Modifications to existing conversion routines and the development, where necessary, of new conversion routines;
- Electronic data conversion;
- Manual data entry; and
- Validating the electronic records against source documents.

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VII. Accelerate TAAMS Title and Defer Realty and Accounting Functionality.

Implementing TAAMS Title nation-wide would simplify related business processes and reduce the risk of introducing errors and inconsistencies in business-critical data stores. It would establish a baseline of certified information against which accounting and distribution data from IRMS, MAD, LISLA and other Realty applications can be reconciled.

The introduction of TAAMS Title must be coordinated with relevant BIA Data Cleanup activities in order to ensure both the initial and ongoing quality of owner, realty and title information introduced into TAAMS.

Realty and Accounting development and deployment efforts, however, should be deferred until the revised Trust Operations Business Model has been developed and the acquisition strategy has been revisited. This will provide the Department with the opportunity to evaluate the extent to which information services support the revised business processes. It will also avoid any risk of reducing the integrity of current processes and services by introducing unverified functionality.

VII.1 Accelerate the nation-wide deployment of TAAMS Title.

Title and realty information is currently maintained in two primary applications: the legacy Land Records Information System (LRIS) and Artesia's TAAMS application. TAAMS has been implemented, to varying degrees, for four (4) regions (Alaska, Rocky Mountain, Southern Plains and Eastern Oklahoma) for over one (1) year. Having title and realty information segregated between two un-integrated applications has significantly increased the complexity of key business processes such as the generation of Title Status Reports (TSRs).

Accelerating the nation-wide deployment of TAAMS Title will simplify those business processes, reduce the risk of introducing errors and inconsistencies in business-critical data stores, and establish a baseline of certified information against which accounting and distribution data from IRMS, MAD, LISLA and other Realty applications can be reconciled.

In addition to the activities identified below, the Department should undertake an assessment to identify the steps must be taken in order to assure the integrity of Title-related data and business processes if the schedule is accelerated:

Existing Title functionality must be validated and approved.
A process must be defined to validate and obtain formal approval for existing title functionality. This will increase buy in and understanding for stakeholders, users and the technical community.

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Role-specific training materials need to be developed and the nation-wide training schedule needs to be revised.
TAAMS training and reference materials need to be tailored to the specific roles of individuals contributing to Title business processes. The nation-wide training schedule then needs to be revised to ensure all affected individual receive the necessary training.

An event-drive deployment schedule must be adopted.
A revised TAAMS Title deployment schedule must be developed that reflects the effort required to meet business objectives rather than arbitrary dates. This schedule must address development, testing, training, data conversion and ongoing support.

Data cleanup and conversion efforts must be reprioritized.
In order to coordinate the delivery of accurate Title information with the deployment of TAAMS Title functionality, data cleanup and conversion efforts must be prioritized to focus on the subset of Title information essential to the deployment efforts.

> Refer to *"VI.3 Adopt a balanced strategy for prioritizing data cleanup and conversion efforts."* in the Detailed Recommendations section for additional information on data cleanup strategies.

VII.2 Defer Realty and Accounting Functionality.

While Title business processes are reasonably consistent across the Regions and LTROs, Realty and accounting processes are far more diverse. Before committing additional resources to the development and deployment of Realty and Accounting functionality, the revised business processes need to be documented, verified and approved. Once the business model and process descriptions have been approved, available alternatives need to be evaluated using a consistent acquisition strategy.

> Refer to *"V.4 Develop a business case for evaluating and acquiring the information services"* in the Detailed Recommendation section for further insight into the application of a consistent information systems acquisition strategy.

In the interim, resources that would have otherwise been dedicated to Realty and Accounting should be dedicated to the nation-wide Title and BIA Data Cleanup deployment effort.

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VII.3 Defer changes in Agency responsibilities until Realty and Accounting functionality is deployed.

Defer changes in the organizational roles associated with Title business processes until an integrated Title, Realty and Accounting software solution is ready to be deployed. Regions and LTROs currently have the staff that maintains Title Related information. Agencies are staffed to manage the Realty related data. If TAAMS Title is deployed to the agencies, that staff must then maintain both Title (in TAAMS) and Realty (in IRMS, etc). Agencies do not have the staff to perform the duplicate business functions required to leverage disparate Title and Realty applications. In order to resolve this issue, TAAMS Title should be initially deployed to the Regions rather than the Agencies. Deferring changes in the organizational roles until an integrated solution is available aligns the workload with available resources. Once an integrated Title, Realty and Accounting solution is available, the Title maintenance workload can be transferred to the Agencies.

VII.4 Develop and execute a plan to integrate Title, Realty and Accounting and perform the associated data cleanup and conversion activities.

The Land Title Records System (LRIS), however, has not been – and cannot be – retired from any location until sufficient historical title information has been converted to enable TAAMS to assume the full responsibility of a system-of-record.

The Department should consider implementing TAAMS Title version 1.5 as the basis for a consistent, nation-wide Title application, without activating the Realty and Accounting functionality incorporated in that release. This decision should be made based on the costs associated with completing the 1.5 release and the benefits associated with incorporating the ability to review both current and historical Title information using a consistent tool.

In order to deploy TAAMS Title, the Department needs to develop a plan that incorporates both the Site Assessment strategy and the BIA Data Cleanup and Conversion strategy. Those strategies need to be revised to reflect stakeholder priorities rather than simply addressing technical cleanup and conversion issues.

Refer to *"VI. Immediately Assess the Nature and Magnitude of the BIA Data Cleanup Issue"* in the Detailed Recommendation section for more information regarding audit policies and procedures.

This plan must be accompanied by a detailed assessment of the computing and communications capabilities and capacities required to support Title-related business processes (see below) together with an estimate of the broader requirements of an integrated Title, Realty and Accounting solution.

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The plan must also account for the creation of complete and accurate requirements and design documentation reflecting current Title functionality. This documentation should then be compared with the Title business process descriptions to determine if any software modifications are warranted.

> Refer to *"VI.1 Clarify and communicate the Department's BIA Data Cleanup responsibilities and objectives"*, *"VI.3 Adopt a balanced strategy for prioritizing data cleanup and conversion efforts"*, and *"IX. Establish Required Computing and Communications Capabilities"* in the Detailed Recommendation Section for further information regarding the strategies that must be implemented in order to retire existing legacy systems.

The TAAMS and BIA Data Cleanup sub-project manager, with the assistance of the Trust Program Management Center (TPMC) needs to develop, execute and monitor an integrated TAAMS Title and BIA Data Cleanup implementation plan. That plan must be based on the priorities and estimates developed in the above activities. It needs to address the schedule of cleanup and conversion activities and the effort and resources required to execute those activities. It must also address the timing of TAAMS Title training and deployment activities.

> Refer to *"XI. Establish a Trust Program Management Center"* in the Detailed Recommendation section for more information regarding role and responsibilities of the sub-project managers and the TPMC.

VII.5 Comprehensively evaluate the quality and progress of initial cleanup and conversion activities.

The TAAMS and BIA Data Cleanup sub-project team needs to periodically create a comprehensive report on the progress towards Reform objectives. The Data Cleanup portions of this report should include both the progress made towards converting source documents into the electronic system of record and the incidence of error observed in the conversion process.

In order to evaluate the reliability of cleanup and conversion efforts, a Quality Control (QC) team needs to periodically obtain a statistically valid sample of the Title, Realty and Accounting information that has been introduced into the integrated data stores.

> In order to assure the validity of this process, the QC team needs to report to the Trust Reform Executive Sponsor and the QC sample needs to be re-administered for each reporting period.

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Source documents for the entire QC sample need to be retrieved from their respective physical storage locations and compared with the electronic representation of that data to obtain a rate of error.

The cleanup and conversion sub-project plan then needs to be amended to reflect any corrective actions required to address policies and procedures that resulted in the introduction of incorrect data.

VII.6 Develop and execute an integrated assurance and user acceptance test.

The DOI needs to develop and execute an integrated assurance and user acceptance test plan that combines all elements of the data cleanup, conversion, data entry and Title functionality. The objective of this test is to assure the Department's ability to support ongoing business processes with released functionality and converted data.

VII.7 Assess the quality of ongoing data cleanup and conversion efforts and monitor organizational performance and productivity.

Part of the process of ensuring the complete and accurate translation of information between source documents and the electronic system of record requires a continual process evaluation. An ongoing audit process will ensure that data contained in the system of record is consistent with the source documents. These audit reports can then provide the means to create the metrics to validate the data contained in the system of record.

Once the initial metrics are created and maintained, audit history is available. Audit history is an important aspect in evaluating the effectiveness of the Title, Realty and Accounting data introduction process over time. The metrics can be substantiated as long as a statistically valid sample is used in the selection of records for the audit process.

As with other aspects of data cleanup, a prioritization of audit failures needs to be created to allow for workflow assignment. The prioritization needs to reflect the magnitude of the failure, the effect on the Department's fiduciary responsibilities, and other factors deemed critical to the stakeholders.

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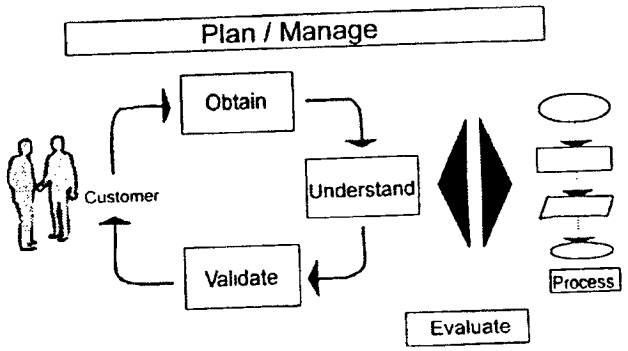
VIII. Implement Consistent Technology Frameworks, Methods and Tools.

Information technology support for Trust-related business processes will, of necessity, embrace disparate software architectures and solutions. In order to evaluate the fitness of proposed changes to individual components, the Department needs to adopt and enforce a consistent technology framework. Adopting a consistent framework will decrease the effort associated with managing information services that consistently and reliably support for business processes.

VIII.1 Implement a program-wide requirements determination process.

Implement a common requirements determination process to obtain, understand, validate and document business requirements. These requirements definitions are the basis for component designs and test cases that will verify the extent to which application components are fit for use. Complete, accurate requirements also facilitate training and education and serve as the basis for defining and implementing metrics that monitor overall business process performance.

Requirements determination, as described below, is an iterative, three (3) step process in which requirements are first obtained, then analyzed, verified and finally decomposed into logical groups that can be supported by specific information services components.



At each step of the determination process, requirements are cataloged together with the trace-ability and validation criteria required to establish a credible basis for the indicated information services. As requirements are validated, the stakeholder(s) responsible for supported and impacted business areas need to approve those requirements as complete and accurate.

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VIII.2 Define and implement an integrated testing process.

Testing software for conformance to requirements is an integral part of the software development process. Testing consists of documenting, validating and executing test plans based upon detailed business requirements, integration between system components and required system interfaces to achieve formal client acceptance.

By developing a requirements-based testing process all organizations have a unified view of how the system should act. By adhering to generally accepted testing procedures at all levels of testing you avoid implementation delays since everything is thoroughly tested prior to User Acceptance Testing.

The generally accepted different types of testing include:

- Unit testing – Individually testing each software component produced for the system. Unit testing is based upon detailed business requirements traced to each component and includes boundary testing and logical edits.

- Integration testing - Testing the integration between system modules, as well as the required system interfaces. The interfaces include both components within the same system as well as the interaction to outside systems. This includes boundary testing and error handling for invalid data from outside systems.

- System testing - Testing the system as an integrated whole. System testing is often viewed as an internal user acceptance test.

- Stress testing - Stress testing subjects the system to high volumes of input for a specified period of time. Testing a system under stress validates the capability of the system to allocate and share resources. A stress test will test several levels of transaction volume including the typical peak load, the predicted maximum peak load, and progressively greater loading until the system fails

- User acceptance testing - testing the system's compliance to formal acceptance criteria established during the detailed business requirements determination

- Regression testing – The process of testing changes to make sure that all previously tested features still work as required and no errors were introduced into the system.

For each type of testing you need to create detailed test plans that identify the test objectives, approach and environment. Test plans identify the test cases, test data, expected results and validation criteria for completing the test. The responsibility for executing test cases and approving test results should be identified for each type of test. Test cases should be reusable for use in regression testing. Change control should be implemented for test cases and whenever a system requirement is changed, the test plan needs to be examined and updated as appropriate. There should be an agreed upon single method or tracking the test and the anomalies.

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VIII.3 Adopt a common systems deployment framework.

Adopt a common systems deployment framework that ensures the system is delivered and installed in the production environment in a timely manner. The systems deployment framework needs to include an analysis of computing and communications infrastructure impacts, the acquisition and/or development of required infrastructure components and the integration of systems deployment activities with anticipated business process changes.

Implement project level data center and network impact analysis procedures as part of the initial project planning process.

Every project, whether it is a implementing a new service or a changing an existing computer application, has some implications to the current infrastructure. The implications could be anything from shutting down a system or office and reducing network traffic to adding new servers and databases that require set-up, maintenance and upgraded communication lines. The purpose of an impact analysis is to capture this information early in the process so appropriate business decisions can be made. Incremental costs are often not factored into the cost benefit analysis for the project.

The recommendation to perform a network impact analysis on all changes as part of the standard change control process for Trust Reform. The analysis should capture changes to data stores, transaction volume, numbers of users, expected network traffic, security implications, help desk volume, data recovery plans, operational processes, training needs and computer configurations. The costs associated with these changes can be used in both the business case for the change and the operations budget process.

Develop and execute a system deployment plan to procure and install any required hardware and software. The deployment plan also needs to address the development and introduction of user's guides and reference materials, operations and procedures. These guidelines and procedures need to reflect the service levels required to provide consistent and reliable support for the revised business procedures.

> Refer to *"IX.2 Adopt a standard for core Information Technology services and service levels"* in the Detailed Recommendation section for additional insight into the characteristics of qualified IT services.

Integrate systems deployment efforts with planned changes in Title, Realty and Accounting business policies, procedures. Systems deployment efforts need to be coordinated with organizational changes and revisions to business policies and procedures. Measurement and monitoring systems need to be in place prior to the deployment of revised policies and procedures in order for the Department to evaluate the effect of planned changes.

> Refer to *"Organization and People"* in the Detailed Recommendation section for additional insight into the organizational issues that need to be addressed in order to implement reformed Title, Realty and Accounting business processes.

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VIII.4 Adopt consistent lifecycle methodologies for development and maintenance efforts.

ATS, as well as other contractors, have a role in supporting the Department's effort to adopt consistent lifecycle methodologies. Third-party contractors should apply sound and consistent lifecycle methodologies to both development and maintenance efforts throughout the life of their contracts. This is the only means by which the Department can ensure that current, complete and accurate definitions of the business requirements, and supporting components, are maintained as the systems mature. Without these definitions, the Department risks introducing systemic failures into core business operations as a result changes in business objectives, strategies or processes.

The key elements of robust lifecycle methodologies, together with high-level deliverables essential to maintaining a complete, accurate description of business process support are identified below.

- Define – establishes the scope and objectives for a information systems project and needs to be updated whenever proposed changes fundamentally impact business direction and goals.

- Analyze – describes the high- and low-level business requirements supported by information systems. These requirements are the basis for validation and verification testing and must be updated whenever business process changes affect underlying information systems.

Refer to *"VIII.1 Implement a program-wide requirements determination process."* in the Detailed Recommendation section for more information regarding high- and low-level requirements management.

- Design – business and technical descriptions of the individual components that comprise an information technology application. Design documentation augments high- and low-level requirements as the basis for component-specific technical testing. These designs need to be updated whenever business changes require modifications to the logical or physical component definitions.

- Produce – operating platform-compliant implementations of the components defined and designed above.

- Test – the process of ensuring that information systems consistently and reliably support business procedures within the scope, and according to the requirements defined above.

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> Refer to *"VIII.2 Define and implement an integrated testing process."* in the Detailed Recommendation section for more information regarding test formats, objectives and requirements.

- Implement – the process of delivering verified and validated information technology components to the organizations that will leverage those components to support business processes.

> Refer to *"VIII.3 Adopt a consistent systems deployment framework."* in the Detailed Recommendation section for more information regarding implementation policies and procedures.

- Support – an iterative process consisting of the activities defined above, support is the mechanism by which existing information systems components are kept consistent with changes in business objectives, strategies and processes.

IX. Establish Required Computing and Communications Capabilities.

The result of this assessment should be an agreed set of service level requirements addressing local- and wide-area network availability and capacity, client- and server-based computing capabilities and information technology (IT) operations policies and services. The results of this assessment may require the Department to acquire significant computing and communications assets or services to meet business needs.

IX.1 Assess the Network Infrastructure Requirements and Capabilities.

No factual data to measure existing infrastructure loads on the network are available. No estimates have been developed to determine the capabilities and capacities required to support future business operations. The Department needs to perform a Network Infrastructure Assessment to evaluate whether existing capabilities are sufficient to meet ongoing business requirements.

Network Infrastructure Assessments measure and analyze network traffic to identify average and peak network utilization and assess the bandwidth available to support new information services. Specific assessment results need to include measures of:

- Current network traffic load by application.
- Current network traffic load by network node.
- The number of network hops (how many routers to a destination)
- Anticipated traffic for new implementations.
- Business transaction times by node.

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The assessment needs to address a comprehensive cross-section of network characteristics including line speeds, line configurations, and transaction types. Enough data is collected to determine available capacity and to enable analysts to confidently predict behavior of parts of the network not directly measured.

With this information, the effect of new Title, Realty and Accounting information services on general network performance can be assessed and the Department will be able to determine if, and where, additional network resources might be required. Existing and potential network bottlenecks can be identified and remedied before core business operations are impacted.

The results of this assessment may require the Department to acquire significant computing and communications assets or services to meet business needs.

IX.2 Adopt a standard for core Information Technology services and service levels.

Ensure that internal and external IT service providers adhere to at least the minimum service levels required to assure consistent and reliable support for business processes.

- Introduce a Service Level Agreement (SLA) between Data Center as a service provider and agencies.

  A Service Level Agreement (SLA) is a contract between service provider and a service receiver that specifies, in measurable terms, what services the provider will furnish. Services can be measured, justified, and compared with other available options. Typical service level metrics include:

  - What percentage of the time services will be available
  - The number of users that can be served simultaneously
  - Specific performance benchmarks to which actual performance will be periodically compared
  - The schedule for notification in advance of network changes that may affect users
  - Help desk response time for various classes of problems
  - Dial-in access availability

- Develop and implement daily performance measurements.

  A list of performance measurement performed daily should be established. The metrics should support the information described in the SLAs. Typically it would be lower level or more detailed information than the service level agreements. The information would be used to identify areas that need attention. When aggregated, the daily information should reflect metrics in the service level agreements.

  These could include:

  - Server memory and space utilization statistics
  - Server application response times

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- Overall network response times collected in 15 minute or 30 minute increments

IX.3 Standardize BIA information technology operations and processes.

Adopt a standard for IT Operations services and service levels. Ensure that internal and external IT service providers adhere to at least the minimum service levels required to assure the available of IT assets and capabilities.

A data center needs to perform many tasks to ensure they provide an acceptable level of service. The BIA Data Center in Reston needs to perform these additional standard operational processes and practices. The operational processes that should be implemented include:

- Establish a Capacity Planning Process
  The Department needs to adopt a capacity planning process that includes network design modeling techniques as well as organizational and cost considerations. The formulas must take into account the fact that different variables change at different rates as the number of users and system loads increase. Some of the relationships are not linear.

  The network topology and the cost of bandwidth must be taken into consideration when specifying the number and location of compute resources. It is necessary to calculate the bandwidth requirements and to work with the network supplier to determine the costs involved in different deployment scenarios.

- Establish a Network Management Center.

  A Network Management Center (NMC) monitors, administers and controls the Wide- and Local-Area Network resources that comprise the BIA's communications infrastructure. It includes backup and restore, scheduling, and virus protection functions and procedures.

  The objective of the Network Management Center is to ensure the availability and responsiveness of computing and communication resources to the end-user community. The NMC includes a help desk as discussed below.

- Publicize and use the existing help desk.

  In a business enterprise, a help desks enable end-users to obtain assistance in solving general and specific technology-related issues. In larger companies, a help desk may consist of a group of experts using software to help track the status of problems and other special software to help analyze problems (for example, the status of a company's telecommunications network).

  The World Wide Web offers the possibility of a relatively inexpensive, standard user interface to help desks and facilitates automated help desk services.

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- Develop escalation procedures for problem reporting.

  Escalation procedures describe the general protocol for problem resolution. Escalation procedures should be defined for errors and should be included in service level agreements with each service provider. The escalation procedures as well as the hours of support and system maintenance windows should be communicated to users, help desk personnel and system support personnel. All problems should be logged and tracked through resolution. The metrics captured should be tracked against the service level agreements for compliance and metrics reporting.

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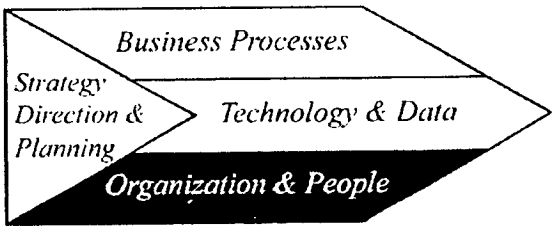
Organization & People



In a healthy system of change, organizational roles and responsibilities will be aligned to establish and / or reinforce accountability for achieving enterprise objectives. Steps will then be taken to ensure all organizations are appropriately staffed, trained and prepared to embrace required changes.

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X. Immediately Appoint One Individual Accountable for TAAMS and BIA Data Cleanup.

Investing both the authority and responsibility for achieving planned objectives for TAAMS and BIA Data Cleanup in one individual creates accountability for sub-project objectives.

> Refer to *"I. Immediately Appoint a Single Trust Reform Executive Sponsor."* and *"XI. Establish a Trust Program Management Center"* in the Detailed Recommendation section for additional insight into the roles and responsibilities of the Trust Reform Executive Sponsor and a Trust Program Management Center.

X.1 Define sub-project manager objectives, roles and responsibilities.

The DOI needs to define the specific objectives against which the sub-project managers' performance will be measured. These objectives need to be considered as the Department defines roles and responsibilities that integrate the responsibility for achieving sub-project goals with the authority to control sub-project activities.

As with the Trust Reform Executive Sponsor, the Department needs to establish the key qualifications of the TAAMS / BIA Data Cleanup sub-project manager. These should include extensive project management experience in an Information Technology environment and a Trust background.

The role of that individual will be to direct and control all sub-project elements, and sufficient staff, ensuring critical-path activities proceed according to schedule. Where additional resources are required to support non-critical activities, the sub-project manager coordinates with other Departmental leaders to staff and control those efforts.

X.2 Define sub-project manager reporting and communication lines.

The sub-project manager needs to report to, and take direction from, the overall Trust Reform Executive Sponsor. In this capacity, the sub-project manager will coordinate efforts with other sub-projects via the Trust Program Management Center and the Trust Reform Executive Sponsor.

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X.3 Appoint an acting TAAMS / BIA Data Cleanup sub-project manager.

The office of the TAAMS and BIA Data Cleanup sub-project manager needs to be immediately established and filled, to provide the authority required to pursue essential activities. If an extended period of time is required to fill this position with a permanent sub-project manager, an acting manager should be appointed in the interim.

X.4 Appoint the permanent TAAMS / BIA Data Cleanup sub-project manager.

The individual appointed as TAAMS and BIA Data Cleanup sub-project manager must be capable of fulfilling each of the roles and assuming all responsibilities and the authority required to achieve all sub-project goals and objectives.

XI. Establish a Trust Program Management Center (TPMC).

Consistent project management practices and artifacts need to be adopted by all Reform-related sub-projects and initiatives. All sub-projects need to adopt consistent methods and artifacts for managing schedules, resources, risks, communications and other project management disciplines. These practices and artifacts will be developed and consolidated by the TPMC.

The sections that follow describe major functions and responsibilities of a Program Management Center. TAAMS and BIA Data Cleanup project management efforts need to be driven by policies, procedures and tools defined and adopted across all Trust Reform initiatives. Specific recommendations regarding TPMC roles, responsibilities and resources will be addressed in EDS' assessment of the overall Trust Reform initiative.

XI.1 Establish an interim Program Management Center.

It will take several months to fully develop and implement the Trust Program Management Center. In the interim, sufficient program management functions and tools need to be implemented to support initial Trust Reform coordination activities.

XI.2 Implement standard program management functions and roles.

Standard program management functions typically provide policies, procedures and tools that assist project leaders as they manage issues related to scope and objectives, project integration, risk and quality management and communications. Program management activities typically revolve around the consolidating and reporting of information related to the above activities in addition to project schedules and resource plans, time management and vendor relations (cost/procurement management).

Program management centers typically develop policies and procedures, evaluate and select tools that facilitate key program management activities and provide project leaders with the training and mentorship required to integrate project-specific efforts into overall program initiatives.

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XI.3 Identify and develop/acquire the TPMC infrastructure, templates and tools.

Once the Trust Program Management Center functions and roles have been established, the interim PMC staff needs to identify and develop / acquire the templates and tools required to fulfill those functions.

XI.4 Develop and execute a staffing and training plan for TPMC staff and sub-project managers.

After tool selection and acquisition is complete, staffing plans for the TPMC need to be updated, tool- and role-specific training materials need to be created and TPMC and sub-project training plans need to be developed and executed.

XI.5 Implement consistent scope and change management practices.

Implement a consistent Change Control Framework for managing changes in scope, objectives, strategies and requirements across all Trust Reform initiatives. The framework is the starting point for program specific implementations. This will allow DOI to manage changes within a controlled process and it will provide an audit trail for all changes.

The framework will allow the appropriate stakeholders to assess the impact of changes on cost, schedule, and resources. This in turn ensures that all modifications introduced into business models and processes are fully understood and all system changes are planned, scheduled and released with the appropriate priority.

> Additional details addressing Scope and Change Management will be included in the overall Trust Reform assessment.

XI.6 Implement an Automated Trust Program Performance Reporting Tool.

One of the key responsibilities of the TPMC is to regularly report on the progress made, and resources expended, toward overall program objectives. These reports also typically include estimates of the effort and time remaining to achieve sub-project milestones and objectives. A common means of enabling stakeholders to quickly identify areas requiring executive attention is to develop an automated performance-reporting tool that summarizes the status of individual initiatives and the relationships and dependencies between initiatives. Individuals can then view those components of overall performance appropriate for their roles and responsibilities. A TAAMS / BIA Data Cleanup project reporting tool, or dashboard, subsequently integrated with a dashboard that reflects all Trust Reform initiatives to create a Automated Trust Program Performance Reporting Tool, would enable leaders to identify and address issues before they impact overall progress towards Reform objectives.

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XII. Improve Stakeholder Involvement in TAAMS and BIA Data Cleanup.

The changes inherent in a revised Trust Operations Business Model, and specifically in reformed Title, Realty and Accounting business processes, must be accepted and adopted by all Regions, Land Title Record Offices, Agencies, Tribes (and Tribal representatives) and DOI Bureaus and Agencies. In order to gain the required acceptance, the Department needs to take steps to improve stakeholder participation in the direction and prioritization of Reform-related initiatives. This will ensure the business model reflects DOI objectives and the unique trust characteristics imposed by federal and local statutes, treaties and tribal needs.

> Specific recommendations for improving stakeholder participation will be included in the overall Trust Reform assessment.

XIII. Execute Comprehensive Staffing Plans for All Participating Organizations.

Sufficient, qualified resources need to be available to all participating organizations based on defined roles and responsibilities.

Regional offices are already understaffed in key areas. Further reduction in regional staff will be required to dedicate resources to key trust reform responsibilities. Many of these resources will have to come from existing operation teams. These reductions will jeopardize the Department's ability to comply with ongoing Trust responsibilities. All participating organizations need to plan for, hire and train appropriate numbers of personnel to ensure adequate support for Reform initiatives and ongoing Title, Realty and Accounting business operations.

XIII.1 Establish an interim workforce plan for all participating organizations.

The revised Trust Enterprise Model and associated changes to business processes will take some time to complete. In the interim, the Department needs to develop a staffing plan that ensures all participating organizations have the staff required to support ongoing Trust obligations while the new business environment is being defined.

XIII.2 Develop a comprehensive sub-project staffing plan.

The staff required to support Title, Realty and Accounting sub-project efforts must address the needs of several organizations. Comprehensive staffing plans need to be developed and executed that reflect those organizations' contributions to sub-project

efforts. Major organizations, their fundamental roles and the basis for their staffing requirements are identified below:

- The Sub-Project Team – the sub-project team is ultimately responsible for defining, developing and deploying reformed Title, Realty and Accounting business policies, procedures and information services. This team must have the subject matter expertise and capacity to perform, at a minimum, all critical-path project activities that are not contracted to a third party. Critical-path activities, as defined by the Project Management Body of Knowledge, are those activities that cannot be delayed without impacting the overall project schedule.

- Other Departmental Organizations – other Departmental organizations need to understand the roles and responsibilities they will have regarding the execution of sub-project tasks. Central, Regional and Agency staff may be called upon to provide subject matter expertise over an extended period of time. This staff may also be required to perform project-specific tasks for which the schedule provides some flexibility (this will permit the Department to minimize the number of additional resources required to define and deploy required changes).

XIII.3 Develop a comprehensive business process staffing plan.

As described above, business processes will be impacted during the definition and deployment of revised policies, procedures and tools. All Departmental organizations need to develop comprehensive staffing plans that ensure core business processes are adequately staffed during these key periods of change as well as once the required changes have been implemented.

Staffing plans need to reflect the decrease in productivity that will occur during and immediately following the introduction of revised policies, procedures and tools. In addition to the direct effects of a comprehensive training program (see below), individual productivity will decrease until the central, Regional and Agency-based staff are familiar with the new policies and procedures.

XIII.4 Develop and execute a comprehensive, role-based training plan.

The Department needs to define and execute a comprehensive training plan for all central, Regional and Agency-based staff that is driven by individual Trust roles and responsibilities. Training curricula will need to be defined and adopted. General and curriculum-specific training materials will need to be published and distributed to relevant staff. These training materials need to address relevant statutes and regulations, Departmental policies and procedures in addition to the revised information services.

A well-planned, and executed, comprehensive training program will minimize the productivity issues that inevitably result from large-scale change programs. This, in turn, will minimize the impact of these changes on internal organizations, third-party providers and beneficiary services.

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Roadmap

The TAAMS and BIA Data Cleanup Roadmap identifies the activities, together with their timing and dependencies, required to implement the recommendations described throughout the "*Detailed Recommendations*" section above.

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Roadmap

The Roadmap section in this report reviews the following topics:

- Overview
- Roadmap Activities

Overview

The high-level and detailed recommendations described in the report above address each of the major highlights and concerns identified during EDS' assessment of the TAAMS and BIA Data Cleanup subprojects. They do not, however, describe the sequence in which each activity (recommendation) should be executed, nor do they describe interdependencies, effort or performance considerations that must be monitored in order to ensure smooth progress towards Trust Reform objectives. Each of these issues is described in the roadmap section below.

Rather than being presented in numerical order, high-level recommendations are presented in execution sequence, together with EDS' assessment of:

- The duration of that activity;
- Key interdependencies representing relationships with other high-level recommendations;
- Detailed recommendations, or tasks, that identify specific steps required to implement the recommendation;
- Detailed interdependencies representing relationships between activities within the same high-level recommendation. These dependencies are identified to provide sub-project managers with an appropriate view of the anticipated contribution that each task makes to the overall effort; and
- Performance considerations that provide both Trust executives and sub-project managers with insight into the key issues, measures, decision points and/or milestones that must be monitored in order to assure a successful implementation.

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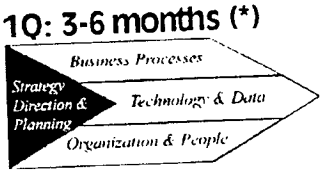
It must be noted that the completion dates and efforts associated with BIA Data Cleanup and the implementation of an integrated Title, Realty and Accounting software solution cannot yet be estimated. These dates depend completely on the results of the recommended assessment into the nature and magnitude of the data errors that must be resolved in order to assure the integrity of Trust business processes. Similarly, the duration required for successful introduction of an effective Title, Realty and Accounting software solution depends on the outcome of the "make vs. buy" evaluations and other related factors.

The start dates and durations identified in the graphical roadmap reflect the complexity of the current Trust environment and the need to incorporate objectives and priorities of all stakeholders: Departmental organizations and other governmental agencies, tribes and representatives of the Native American beneficiaries. Start dates are considered accurate to within the quarter specified, assuming all prerequisite recommendations have been implemented on schedule. Durations are estimated in three-month increments. More precise estimates and schedules can be produced as specific scopes-of-work are defined.



The graphic on the right illustrates the relationship between each recommendation and the core change components and the means by which activity start dates and duration are indicated throughout the body of the roadmap. The '1Q' to the left of the colon indicates that this activity is expected to commence in the first (1st) quarter of the Reform program. The '3-6 months' indicates that this activity is anticipated to require from three (3) to six (6) months to complete. An asterisk (*) indicates that the completion date cannot be estimated at this time.

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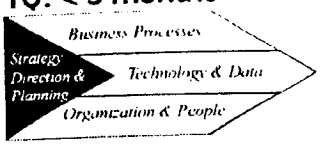
Roadmap Activities

I. Immediately Appoint a Single Trust Reform Executive Sponsor.

10: < 3 months



The Trust Reform sub-projects and breach efforts need to be directed by a single, Executive Sponsor. The emphasis of this recommendation is on aligning responsibility with line of authority. The Executive Sponsor should set strategy and direction for all Trust reform initiatives. This leader must have the authority and responsibility to direct all Reform initiatives, setting scope and priorities. This Sponsor must have line authority and control over the budget, subject matter expertise and the staffing required to keep program initiatives on schedule.

The Executive Sponsor's organization should include a Trust Program Management Center (TPMC) providing metrics and progress assessments. The Sponsor needs to ensure that meaningful metrics are being monitored and reported with confidence on a regular basis. The metrics plan should include performance measures on high-level strategies as well as basic sub-project activities.

Scope and Duration

Task(s)	*Task Duration*
I.1 Define the objectives, roles and responsibilities of the Trust Reform Executive Sponsor.	**< 3 months**

I.2 Appoint the permanent Trust Reform Executive Sponsor. **Milestone**

Depends Upon	*In the Following Manner*
I.1 Define the objectives, roles and responsibilities of the Trust Reform Executive Sponsor.	The selection of a permanent Trust Reform Executive Sponsor should be based in part on the roles and responsibilities that individual will assume.

I3 Define the Executive Sponsor's reporting and communication lines and the office structure. **< 3 months**

Depends Upon	*In the Following Manner*
I.1 Define the objectives, roles and responsibilities of the Trust Reform Executive Sponsor	The permanent Trust Reform Executive Sponsor, however, should not be appointed until the roles, responsibilities and lines of control have been established. .

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Performance Considerations

- Appoint an executive sponsor. (Milestone)
- Establish the Trust Program Management Center to support the Executive Sponsor's efforts.

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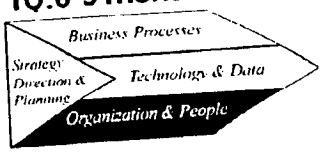
XI. Establish a Trust Program Management Center

10:6-9 months



Consistent project management practices and artifacts need to be adopted by all Reform-related sub-projects and initiatives. All sub-projects need to adopt consistent methods and artifacts for managing schedules, resources, risks, communications and other project management disciplines. These practices and artifacts will be developed and consolidated by the TPMC.

This activity depends upon

I.2 Appoint the permanent Trust Reform Executive Sponsor.

In the following manner

The office of the Trust Reform Executive Sponsor must be created and filled, at least on an acting basis, to provide the authority required to create a Trust Program Management Center.

Scope and Duration

Task(s)	*Task Duration*
XI.1 Establish an interim Program Management Center.	**<3 months**

XI.2 Implement standard program management functions and roles. **<3 months**

Depends Upon	*In the Following Manner*
XI.1 Establish an interim Program Management Center.	The interim PMC staff, in conjunction with the Trust Reform Executive Sponsor, will define the TPMC organization, roles and responsibilities.

XI.3 Identify and develop/ acquire the TPMC infrastructure, templates and tools. **<3 months**

Depends Upon	*In the Following Manner*
XI.2 Implement standard Program Management Center functions and roles.	The infrastructure requirements, templates and tools will be based on TPMC functions and roles.

XI.4 Develop and execute a staffing and training plan for TPMC staff and sub-project managers. **<3 months**

Depends Upon	*In the Following Manner*
XI.3 Identify and develop/ acquire the TPMC infrastructure, templates and tools.	The training program needs to be tailored to the specific TPMC roles and the templates and tools that will be used to support those roles.

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Tasks (Continued)	*Task Duration*
XI.5 Implement consistent scope and change management practices.	**3-6 months**
Depends Upon	*In the Following Manner*
XI.2 Implement standard Program Management Center functions and roles.	Scope and change management practices must be consistent with TPMC polices and procedures.
XI.6 Implement an Automated Trust Program Performance Reporting Tool.	**3-6 months**
Depends Upon	*In the Following Manner*
XI.2 Implement standard Program Management Center functions and roles.	The types of metrics (performance, cost, etc.) that will be captured and the means that will be used to present those metrics will be defined as part of the metrics plan.

Performance Considerations

- A metrics plan that captures all key performance indicators needs to be defined and implemented. These metrics should, at a minimum, evaluate data cleanup and conversion progress, data integrity and business process quality and productivity.
- An experienced Program Management Center development and implementation manager is essential if the Department is to adhere to the timeframes identified above.
- The Trust Program Management Center charter must be communicated to all sub-project leaders and stakeholders.
- TPMC staff and sub-project managers are trained on processes, templates and tools (Milestone)

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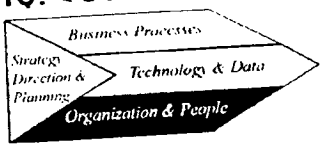
X. Immediately Appoint One Individual Accountable for TAAMS and BIA Data Cleanup

10: < 3 months



The DOI needs to immediately take steps to establish and fill, at least on an acting basis, the office of TAAMS and BIA Data Cleanup sub-project manager. The role of that individual will be to direct and control all sub-project elements and staff ensuring critical-path activities proceed according to schedule. Where additional resources are required to support non-critical activities, the sub-project manager will coordinate with other Departmental leaders to staff and control those efforts.

Scope and Duration

Task(s)	*Task Duration*
X.1 Define sub-project manager objectives, roles and responsibilities.	**< 3 months**
X.2 Define sub-project manager reporting and communication lines.	**< 3 months**
Depends Upon: X.1 Define sub-project manager roles and responsibilities.	*In the Following Manner*: The lines of reporting and communication need to reflect specific roles and responsibilities.
X.3 Appoint an acting TAAMS / BIA Data Cleanup sub-project manager.	**Milestone**
Depends Upon: X.2 Define sub-project manager reporting and communication lines.	*In the Following Manner*: In order to be effective, any individual appointed to lead TAAMS and BIA Data Cleanup efforts must be comfortable with expected roles and responsibilities, sub-project objectives and anticipated reporting and communication lines.
X.4 Appoint a permanent TAAMS and BIA Data Cleanup sub-project manager.	**< 3 months**
Depends Upon: X.2 Define sub-project manager reporting and communication lines.	*In the Following Manner*: In order to be effective, any individual appointed to lead TAAMS and BIA Data Cleanup efforts must be comfortable with expected roles and responsibilities, sub-project objectives and anticipated reporting and communication lines.
I.2 Appoint the permanent Trust Reform Executive Sponsor.	The Executive Sponsor will want input into key staffing positions in the Trust organizations.

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Performance Considerations

- The objectives, responsibilities and authority of the TAAMS and BIA Data Cleanup sub-project manager must be communicated to all affected organizations. (Consideration)
- The sub-project manager must have effective, timely support from the Trust Reform Executive Sponsor. (Consideration)
- The sub-project manager must, eventually, be supported by a Trust Program Management Office to reduce the effort required to consolidate and report on sub-project status. (Consideration)
- Appoint one individual accountable for TAAMS and BIA Data Cleanup (Milestone)

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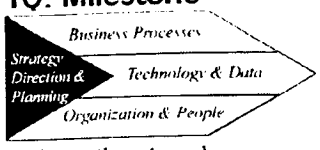
III. Integrate the TAAMS and BIA Data Cleanup Sub-projects.

10: Milestone



The TAAMS and BIA Data Cleanup sub-projects are heavily interdependent. TAAMS objectives cannot be fully achieved until complete and accurate Title, Realty and Accounting information is available. Likewise, the quality of that information will continue to degrade until it resides in an integrated data store and is supported by coherent business processes. The nature and extent of these dependencies make sub-project integration necessary.

This activity depends upon	*In the following manner*
I.2 Appoint the permanent Trust Reform Executive Sponsor.	The office of the Trust Reform Executive Sponsor must be created and filled to provide the authority required to coordinate the efforts of the various Trust stakeholders.

Scope and Duration

Task(s)	*Task Duration*
III.3 Adopt event-driven project schedules rather than the previous date-driven schedules.	**Milestone**

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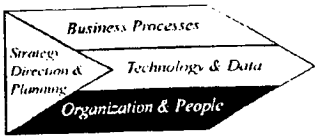
XII. Improve Stakeholder Involvement in TAAMS and BIA Data Cleanup.

1Q: < 3 months



The changes inherent in a revised Trust Operations Business Model, and specifically in reformed Title, Realty and Accounting business processes, must be accepted and adopted by all Regions, Land Title Record Offices, Agencies, Tribes (and Tribal representatives) and DOI Bureaus and Agencies. In order to gain the required acceptance, the Department needs to take steps to improve stakeholder participation in the direction and prioritization of Reform-related initiatives. This will ensure the business model reflects DOI objectives and the unique trust characteristics imposed by federal and local statutes, treaties and tribal needs.

This activity depends upon	***In the following manner***
I.2 Appoint the permanent Trust Reform Executive Sponsor.	The office of the Trust Reform Executive Sponsor must be created and filled to provide the authority required to coordinate the efforts of the various Trust stakeholders.

Scope and Duration

Task(s)	*Task Duration*
XII.1 Engage stakeholders to establish TAAMS / BIA Data Cleanup objectives and priorities.	**<3 months**
XII.2 Maintain stakeholder involvement in sub-project direction and priorities.	**Ongoing**

As noted in the *"Detailed Recommendations"*, further insight into improving stakeholder participation in Reform-related initiatives will be provided in the overall Trust Reform assessment.

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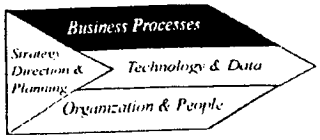
IV. Develop an Overarching Trust Operations Business Model

10: 9-12 months



The first component of a Trust Operations Business model is a statement of the objectives, core business areas, policies and procedures that reflect the Department's Trust responsibilities. As core business areas and procedures are identified and defined, they need to be compared with industry trust standards to identify applicable commercial standards and performance indicators.

This activity depends upon	*In the following manner*
XII. Improve Stakeholder Involvement in TAAMS and BIA Data Cleanup.	The Trust Operations Business Model must reflect the objectives and priorities of all stakeholders. Those stakeholders, therefore, must participate in the development of that model.
X.3 Appoint an acting TAAMS / BIA Data Cleanup sub-project manager.	The TAAMS and BIA Data Cleanup sub-project manager will ensure that sufficient subject matter expertise is available to document the existing and revised business processes.
VII.2 Defer Realty and Accounting functionality.	The decision to defer further development and deployment activities on Realty and Accounting functionality will free resources, some of which can be leveraged to revise the Trust Operations Business Model.

Scope and Duration

Each of the activities identified below should be performed twice. The first iteration should be to develop the Title-related business policies, processes and data requirements. The second iteration should address Realty and Accounting related components.

Task(s)	*Task Duration*
IV.1 Define and communicate objectives, core business policies and key performance indicators (metrics).	3-6 months
IV.2 Diagram the existing Trust Enterprise Model	3-6 months

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Tasks (Continued) ***Task Duration***

IV.3 Develop and communicate the revised Trust Enterprise Model. **3-6 months**

Depends Upon	*In the Following Manner:*
IV.1 Define and communicate objectives, core business policies and key performance indicators.	The revised business model must reflect overall trust obligations and objectives.
IV.2 Diagram the existing Trust Enterprise Model.	Existing business processes must be mapped to the revised business model to determine what types of changes (organizational, operational, etc.) will be required in order to implement the revised model.

IV.4 Approve and adopt the revised Trust Enterprise Model. **<3 months**

Depends Upon	*In the Following Manner:*
IV.3 Develop and communicate the revised Trust Enterprise Model.	The revised Trust Enterprise Model must be documented and published for review and approval.

Performance Considerations

- The Department must ensure adequate stakeholder involvement in the development of the revised Trust Enterprise Model.
- Define key performance key performance indicators must be identified for each core business area and process.
- Once developed, the revised Trust Enterprise Model must be approved and adopted by all contributing organizations to ensure that all Reform-related initiatives are directed by consistent objectives, strategies, policies and procedures.

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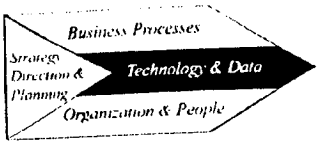
VI. Immediately Assess the Nature and Magnitude of the BIA Data Cleanup Issues

1Q: 6-9 months



The DOI needs to move immediately to accurately estimate the nature and magnitude of the BIA data cleanup issues affecting Title, Realty and Accounting business processes. This will require the Department to conduct a statistically valid assessment of data-related issues. It then requires the DOI to develop a strategy and establish priorities that balance its fiduciary responsibilities with stakeholder interests and technical considerations. Data cleanup policies and procedures need to be reviewed to ensure compliance with the Department's strategy and priorities. Finally, effort and resource estimates need to be created for performing the BIA data cleanup effort in line with these priorities.

Scope and Duration

Task(s)	*Task Duration*
VI.1 Clarify and communicate the DOI's BIA Data Cleanup responsibilities and objectives.	**<3 months**

VI.2 Conduct a statistically valid assessment of Title, Realty and Accounting data to accurately assess the magnitude of data cleanup issues. — **3-6 months**

Depends Upon	*In the Following Manner*
VI.1 Clarify and communicate the DOI's BIA Data Cleanup	The stratified random sample must reflect the DOI's overall Trust Reform objectives responsibilities and objectives

VI.3 Adopt a balanced strategy for prioritizing data cleanup and conversion efforts. — **<3 months**

Depends Upon	*In the Following Manner*
VI.1 Clarify and communicate the DOI's BIA Data Cleanup	The strategy and priorities must balance the DOI's overall objectives as well as responsibilities and the needs of other stakeholders.

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Tasks (Continued)	*Task Duration*
VI.4 Refine the BIA Data Cleanup process.	**< 3 months**
Depends Upon	*In the Following Manner*
IV.3 Develop and communicate the revised Trust Enterprise Model.	The data cleanup process needs to ensure that all data required to support the revised Trust Enterprise Model has been accurately identified and accounted for.
VI.2 Conduct a statistically valid assessment of Title, Realty and Accounting data to accurately estimate the magnitude of data cleanup issues.	The frequency and scope of quality assurance checkpoints built into the data cleanup process need to reflect the nature and magnitude of the issues identified in the statistical assessment.
VI.3 Adopt a balanced strategy for prioritizing data cleanup and conversion efforts.	The process used to establish the integrity of data entered into an integrated Title, Realty and Accounting data store needs to reflect the priorities adopted as part of a balanced strategy.

VI.5 Estimate the effort required to obtain, complete and accurate Title, Realty and Accounting information.	**< 3 months**
Depends Upon	*In the Following Manner*
VI.4 Refine the BIA Data Cleanup and Conversion process.	The effort, time and resource estimates for BIA Data Cleanup and conversion must be based on the nature and magnitude of the data cleanup issues, and the process defined to remedy those issues.

Performance Considerations

- Organizational, stakeholder and technical interests must be considered when refining the BIA Data Cleanup and Conversion process (Consideration)
- Communicate the magnitude, extent and effort of the data cleanup issues.
- Communicate the strategy for refining data cleanup efforts to all contractors or individuals responsible for this effort (Consideration)
- The sample needs to reflect a true representation of all Title, Realty, and Accounting records (ex. LTROs, Agencies, Regions. Compacted tribes)
- The incidence of error for each type of issue identified (Metric)
- A root cause analysis needs to developed for each type of issue identified
- The Department must be able to maintain a comprehensive accounting of data cleanup efforts across all participating organizations (Consideration)

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VII. Accelerate TAAMS Title and Defer Realty and Accounting Functionality

10: 27-30 months (*)

Implementing TAAMS Title nation-wide would simplify business processes, reduce the risk of introducing errors and inconsistencies in business-critical data stores, and establish a baseline of certified information against which accounting and distribution data from IRMS, MAD, LISLA and other Realty applications can be reconciled.

The introduction of TAAMS Title must be coordinated with relevant BIA Data Cleanup activities in order to ensure both the initial and ongoing quality of Title information.

This activity depends upon	***In the following manner***
VI.1 Clarify and communicate the Department's BIA Data Cleanup responsibilities and objectives.	The strategy, direction and goals for BIA Data Cleanup will be driven by the integrated TAAMS and BIA Data Cleanup TAAMS / BIA Data Cleanup strategy and goals.
VI.5 Estimate the effort required to obtain complete and accurate Title, Realty and Accounting information	The effort, time and resource estimates for BIA Data Cleanup and conversion must be based on the nature and magnitude of the data cleanup issues, and the process defined to remedy those issues.
V. Adopt a Consistent Information Systems Acquisition Strategy.	The IT solution used to assure the integrity of business processes and data must be based on the revised business process descriptions.

Scope and Duration

Task(s)	***Task Duration***
VII.2 Defer Realty and Accounting Functionality	**Milestone**
Depends Upon	*In the Following Manner*
V.5 Revise Title, Realty and Accounting business processes to incorporate solution requirements	Realty and Accounting information systems development and deployment must be based on the revised business processes.

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Tasks (Continued)		*Task Duration*
VII.3 Defer changes in Agency responsibilities until Realty and Accounting functionality is deployed		**Milestone**
Depends Upon	*In the Following Manner*	
VII.2 Defer Realty and Accounting Functionality	The decision to defer realty and accounting functionality must be made. Changes in Agency responsibilities need to be deferred until revised business processes have been defined and adopted and the resources are available to deploy an integrated information services solution.	
VII.1 Accelerate the nation-wide deployment of TAAMS Title.		**3-6 months**
Depends Upon	*In the Following Manner*	
VI.1 Clarify and communicate the Department's BIA Data Cleanup responsibilities and objectives.	(see above)	
VII.2 Defer Realty and Accounting Functionality	The decision to defer Realty and Accounting functionality will allow additional staff to focus on the deployment of TAAMS Title.	
VII.4 Develop and execute a plan to integrate Title, Realty and Accounting and perform the associated data cleanup and conversion activities.		**9-12 months**
Depends Upon	*In the Following Manner*	
V.4 Develop a business case for evaluating and acquiring information services.	The plan to incorporate data conversion activities cannot be finalized until the Title-related computing requirements have been finalized and an appropriate solution adopted.	
VI.5 Estimate the effort required to obtain complete and accurate Title, Realty and Accounting information	The effort, time and resource estimates for BIA Data Cleanup and conversion must be based on the nature and magnitude of the data cleanup issues, and the process defined to remedy those issues.	
VII.1 Accelerate the nation-wide deployment of TAAMS Title	The introduction of Title data must be coordinated with the planned introduction of Title functionality in each region.	

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Tasks (Continued)		*Task Duration*
VII.5 Comprehensively evaluate the quality and progress of initial cleanup and conversion activities.		**> 12 months (*)**
Depends Upon	*In the Following Manner*	
VII.1 Accelerate the nation-wide deployment of TAAMS Title.	A comprehensive quality assurance program needs to evaluate the extent to which the applications and data are capable of supporting ongoing business processes before approving the cut-over to new information services.	
VII.4 Develop and execute a plan to integrate Title, Realty and Accounting and perform the associated data cleanup and conversion activities.	Quality assurance processes need to address the full scope of data integrity issues and must be timed to support the plan for remedying those issues.	
VII.6 Develop and execute an integrated Assurance and User Acceptance Test.		**> 12 months (*)**
Depends Upon	*In the Following Manner*	
VII.5 Comprehensively evaluate the quality and progress of initial cleanup and conversion activities	The assurance test must evaluate both the released functionality and the reliability of the data upon which that functionality relies.	
VII.7 Assess the quality of ongoing data cleanup and conversion efforts and monitor organizational performance and productivity.		**> 12 months (*)**
Depends Upon	*In the Following Manner*	
V.1 Document and adopt reformed Title, Realty and Accounting business processes	The procedures used to monitor ongoing performance must ensure that the reformed business processes assure the ongoing quality of the data required to meet the DOI's fiduciary responsibilities. These procedures must also evaluate the efficiency of the process.	
VII.5 Comprehensively evaluate the quality and progress of initial cleanup and conversion activities	The procedures used to monitor ongoing organization performance, and the quality of reformed business processes will be partially derived from the processes and tools used to evaluate the quality of initial data introduction procedures.	

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Performance Considerations

- Develop a process to keep TAAMS Title and other non-TAAMS systems of record (LRIS, IRMS, etc) synchronized until the deployment of a combined Title, Realty, and Accounting system.
- User's guides and reference materials created and distributed. (Milestone)
- Incorporate performance metrics and management reporting
- Cutover from LRIS to TAAMS should be based on a successful assurance test.

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IX. Establish Required Computing and Communication Capabilities

2Q: 6-9 months

The result of this assessment should be an agreed set of service level requirements addressing local- and wide-area network availability and capacity, client- and server-based computing capabilities and information technology (IT) operations policies and services. The results of this assessment may require the Department to acquire significant computing and communications assets or services to meet business needs.

This activity depends upon	*In the following manner*
VIII.3 Adopt a common systems deployment framework.	The network infrastructure assessment must address the computing and communications requirements associated with deploying information services to the business community.
XI.2 Implement a consistent scope and change management control process.	The network impact analysis, completed for each change to a system, must be an integral part of the change control and approval process.

Scope and Duration

Task(s)	*Task Duration*
IX.1.1 Assess current network infrastructure capabilities.	**3-6 months**

IX.2 Adopt a standard for core Information Technology services and service levels. — **3-6 months**

Depends Upon	*In the Following Manner*
II. Adopt an Overall Business and Computer Systems Architecture.	Information Technology services, and the operating platforms on which those services are delivered, will be established as part of the Business and Computer Systems Architecture. This architecture, therefore, needs to be in place before service levels are finalized. In the meantime, interim services and service levels can be adopted.

IX.3 Standardize BIA Information Technology operations and processes. — **3-6 months**

Depends Upon	*In the Following Manner*
IX.1.1 Assess the network infrastructure capabilities.	Information Technology processes chosen must reflect the current capabilities and future requirements.

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Tasks (Continued)	*Task Duration*
IX.1.2 Assess network infrastructure requirements.	**< 3 months**

Depends Upon	*In the Following Manner*
IX.2 Adopt a standard for core Information Technology services and service levels.	Network infrastructure requirements must be based, in part, on the services and service levels needed to support business operations, as well as the current network capabilities.
IX.3 Standardize BIA Information Technology operations and processes.	IT capacity planning policies and procedures must be in place to provide guidelines for assessing the impact of new information services and requirements.

Performance Considerations

- Common change control process implemented (Milestone)
- Network impact analysis completed for TAAMS, overall Trust Reform, other current Departmental systems and future projects (Milestone)
- Capacity planning process in place (Milestone)
- Network Management Center established (Milestone)
- Current network traffic load by application and network node. (Metric)
- Anticipated traffic for new implementations (Metric)
- Track service level metrics (Metric)
- Track daily performance measures (Metric)
- The Department must determine whether to acquire assets or services to provide the network infrastructure capabilities required to support business needs.

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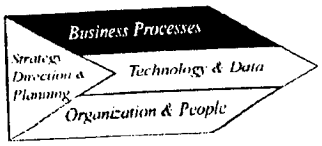
II. Adopt an Overall Business and Computer Systems Architecture

2Q: 6-9 months



The overall business and systems architecture needs to be validated, approved and adopted by both the trust business and technical communities. This will provide the needed common language for data and processes across the organization. It should provide a clear definition of the TAAMS interfaces. TAAMS needs to coordinate and integrate with the focus and purpose of the architecture.

This activity depends upon

IV. Develop an Overarching Trust Operations Business Model.

In the Following Manner

The business and computer systems architecture must support the overarching Trust operations business model.

Detailed recommendations concerning the Department's computer and business systems architecture will be provided in overall Trust Reform assessment.

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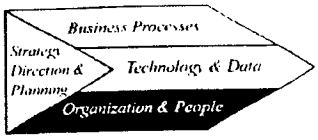
XIII. Execute Comprehensive Staffing Plans for All Participating Organizations.

2Q: 6-9 months



Sufficient, qualified resources need to be available to all participating organizations based on defined roles and responsibilities.

Regional offices are already understaffed in key areas. Further reduction in regional staff will be required to dedicate resources to key trust reform responsibilities. Many of these resources will have to come from existing operation teams. These reductions will jeopardize the Department's ability to comply with ongoing Trust responsibilities. All participating organizations need to plan for, hire and train appropriate numbers of personnel to ensure adequate support for Reform initiatives and ongoing Title, Realty and Accounting operations.

This activity depends upon	***In the following manner***
IV.3 Develop and communicate the revised Trust Enterprise Model	The revised Trust Enterprise Model will identify functions kept in-house, demarcate functions performed by different agencies and identify functions to be outsourced. This will change the staffing requirements for both the sub-projects and the business processes.
V.2 Define, communicate and benchmark performance against objective standards.	When the new Realty and Accounting functions are deployed, there will be changes to the staffing requirements at both the Region and Agency level. These changes must be based on overall organizational performance and productivity.
VII. Accelerate TAAMS Title and Defer Realty and Accounting Functionality.	The sub-project and business process staffing and training plans must accommodate the frequency and timing of Title, Realty and Accounting functional distributions and data cleanup activities.
XI.2 Implement standard Program Management Center functions and roles.	The sub-project and business process staffing plans must be consistent with TPMC policies and procedures.

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Scope and Duration

Task(s)		*Task Duration*
XIII.1 Establish an interim staffing plan for all participating organizations.		**<3 months**
Depends Upon	*In the Following Manner*	
XI.2 Implement standard Program Management Center functions and roles.	(see above)	
XIII.2 Develop a comprehensive sub-project staffing plan		**<3 months**
Depends Upon	*In the Following Manner*	
IV.3 Develop and communicate the revised Trust Enterprise Model.	(see above)	
VII. Accelerate TAAMS Title and Defer Realty and Accounting Functionality.	(see above)	
XI.2 Implement standard Program Management Center functions and roles.	(see above)	
XIII.3 Develop a comprehensive business process staffing plan		**<3 months**
Depends Upon	*In the Following Manner*	
IV.3 Develop and communicate the revised Trust Enterprise Model.	(see above)	
V.2 Define, communicate and benchmark performance against objective standards.	(see above)	
VII. Accelerate TAAMS Title and Defer Realty and Accounting Functionality.	(see above)	
XI.2 Implement standard Program Management Center functions and roles	(see above)	
XIII.4 Develop and execute a comprehensive, role based training plan.		**6-9 months**
Depends Upon	*In the Following Manner*	
XIII.2 Develop a comprehensive business process staffing plan.	The training plan must reflect the revised business model and processes. All staff with Trust-related responsibilities (see the staffing plan) must receive training tailored to their roles and responsibilities.	

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Performance Considerations

- The revised Trust Enterprise Model is completed and approved.
- The plan to accelerate the nation-wide deployment of TAAMS Title is approved.
- A training plan must be developed and executed to support the nation-wide deployment of TAAMS Title.
- An integrated Title, Realty and Accounting software solution has been identified and acquired.

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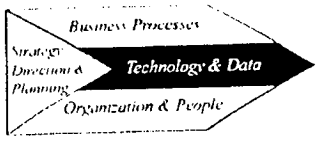
VIII. Implement Consistent Technology Frameworks, Methods and Tools

2Q: 6-9 months



Information technology support for Trust-related business processes will, of necessity, embrace disparate software architectures and solutions. In order to evaluate the fitness of proposed changes to individual components, the Department needs to adopt and enforce a consistent technology framework. Adopting a consistent framework will decrease the effort associated with managing information services that consistently and reliably support for business processes.

This activity depends upon	*In the following manner*
II. Adopt an Overall Business and Computer Systems Architecture.	The system deployment framework must be consistent the overall business and computer systems architecture.

Scope and Duration

Task(s)	*Task Duration*
VIII.1 Implement a program-wide requirements determination process.	**3-6 months**

VIII.2 Define and implement an integrated testing process. — **3-6 months**

Depends Upon	*In the Following Manner*
VIII.1 Implement a program-wide requirements determination process.	Test cases and plans should address all functional requirements. Hence, the testing process needs to be integrated with the requirements determination process.

VIII.3 Adopt a common systems deployment framework. — **3-6 months**

Depends Upon	*In the Following Manner*
II. Adopt an Overall Business and Computer Systems Architecture.	(see above)
VIII.2 Define and implement an integrated testing process.	The systems deployment framework must be integrated with the adopted testing process to ensure that only validated changes are introduced into the production environment.

VIII.4 Adopt consistent lifecycle methodologies for development and maintenance efforts. — **6-9 months**

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Performance Considerations

- Identify metrics that will be used to track system changes, test results and production defects. (Metric)
- Approve integrated systems testing process, including roles, responsibilities, and metrics. (Milestone)
- Network impact analysis procedures implemented as part of the initial project planning process. (Milestone)
- Roles and responsibilities are defined between DOI and third party contractors. (Milestone)
- Deliverables, metrics, formats, and approval procedures are defined between DOI and third party contractors. (Milestone)
- Systems deployment efforts are coordinated with organizational changes and revisions to business policies and procedures. (Consideration)
- Measurement and monitoring systems are in place for deployment. (Milestone)
- Operations and Procedure manuals created and distributed. (Milestone)
- Help desk is trained and prepared for each new deployment. (Milestone)

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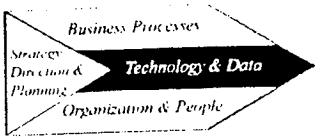
V. Adopt a Consistent Information Systems Acquisition Strategy.

3Q: 12-15 months (*)



Once the Trust Operations Business Model has been approved, a consistent Information Systems Acquisition Strategy needs to be adopted. The acquisition strategy, together with complete and accurate descriptions of the reformed business processes, will become the basis for evaluating integrated Title, Realty and Accounting software solutions. Eventually, once an integrated solution has been chosen, that solution will drive subsequent changes to relevant business policies and procedures.

This activity depends upon	*In the following manner*
IV.3 Develop and communicate the Revised Trust Enterprise Model.	The reformed Title, Realty and Accounting business process descriptions must support the revised Trust Operations Business Model.

Scope and Duration

Detailed recommendations *"V.1 Document and adopt reformed business processes."*, *"V.2 Define, communicate and benchmark performance against objective standards."* and *"V.3 Define the computing and communications requirements for each core business process."* describe the process by which the revised Trust Enterprise Model will be decomposed into business processes and functional requirements. Each of these steps will be repeated twice, once for Title business processes and a second time for Realty and Accounting business processes. Each iteration of the core activities will take approximately 3-6 months.

Task(s)	*Task Duration*
V.1 Document and adopt reformed Title, Realty and Accounting business processes.	**6-9 months**

Depends Upon	*In the Following Manner*
IV.3 Develop and communicate the revised Trust Enterprise Model.	(see above)

V.2 Define, communicate and benchmark performance against objective standards for Title, Realty and Accounting business processes.	**6-9 months**

Depends Upon	*In the Following Manner*
V.1 Document and adopt reformed Title, Realty and Accounting business processes.	The performance metrics and benchmarks required to assess organizational productivity and quality must be developed as the Title, Realty and Accounting business processes are being revised.

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Tasks (Continued)	*Task Duration*

V.3 Define the computing and communications requirements for each core business area. — 6-9 months

Depends Upon	*In the Following Manner*
V.2 Define, communicate and benchmark performance against objective standards for Title, Realty and Accounting business processes.	Some of the gaps identified when benchmarking organizational performance against objective standards will be closed by defining information services that reduce the effort/time required to complete core activities.

V.4 Develop a business case for evaluating and acquiring information services. — 3-6 months

Depends Upon	*In the Following Manner*
V.3 Define the computing and communications requirements for each core business area.	Core business requirements should be used to develop objective evaluation criteria. These criteria will be used to evaluate available IT solutions to determine the extent to which they can be leveraged to support the revised Trust Operations Business Model.

V.5 Revise Title, Realty and Accounting business processes to incorporate solution requirements. — 3-6 months

Depends Upon	*In the Following Manner*
V.4 Develop a business case for evaluating and acquiring information services.	After a business case has been developed and a solution adopted, the Title, Realty and Accounting business processes must be revised to reflect constraints imposed by that solution.

V.6 Perform required software modifications and implement the integrated Title, Realty and Accounting solution. — 3-6 months (*)

Depends Upon	*In the Following Manner*
V.5 Revise Title, Realty and Accounting business processes to incorporate solutions requirements.	Once the business processes have been revised to reflect any incremental solution capabilities or constraints, the solution then needs to be modified to support all revised functionality requirements.

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Performance Considerations

- Revised business processes must be adopted.
- Computing and communications requirements must be finalized and approved.
- Network and communications impact analysis must be completed.
- Create benchmark performance on industry standard metrics.
- Suitable commercial alternatives need to be identified and evaluated against the Department's other options for obtaining an integrated Title, Realty and Accounting software solution.
- Once the package has been identified, the software must be acquired / developed and, if necessary, modified to meet business needs.

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Appendix A – Detailed Findings

The information contained in the sections that follow detailed findings identified in the *TAAMS / BIA Data Cleanup Observations: Highlights and Concerns* report.

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Scope & Objectives

In a healthy program of change, the objectives and scope of the change program(s) are agreed and will remain consistent with the political agenda.

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Scope & Objectives

Scope and Objectives in this report reviews the following topics:

- TAAMS/Data Cleanup Scope and Objectives
- Stakeholder Participation

TAAMS/Data Cleanup Scope and Objectives

> Definition – To define the breath, depth and the desired outcome of both the BIA Data Cleanup and the TAAMS projects, and how they relate to each other.
>
> Goal – To ensure that these programs are clearly defined, understood, and acknowledged within DOI.

Extracts from DOI Interviews

Current planning is done in the dark. We do not have a clear picture of what is required, how it will impact Data Cleanup, possible impact on the current staff, or what is required to fulfill information needs.

EDS Observations and Findings

The general objectives of the BIA Data Cleanup sub-project are identified in the Amended High Level Implementation Plan (HLIP)(2000). However, the magnitude or scope of this effort is not well defined. The scope for TAAMS is also identified in the Amended HLIP. TAAMS objectives. However, the scope is left to be inferred by the reader and is not clearly understood throughout the Department. The core of these objectives is found in the Policies and Procedures sub-project.

The objectives of Data Cleanup activities are not widely and consistently understood at lower levels of the organization. In addition, the specific objectives, the means for accomplishing those objectives, and the standards against which cleanup efforts will be assessed and measured have not been developed or communicated throughout the Department.

The objectives of Data Cleanup are stated in the HLIP as follows:

> "The ultimate goal of Data Cleanup and Management is to ensure correct and updated data such that Indian trust records are accurate, meeting management and operational standards, and establish permanent data integrity at all BIA levels."

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> The project's scope is broadly stated as: "The proper administration of BIA's data consists of three major functions: 1) the cleanup of existing data in BIA's automated systems, 2) initial entry of data not previously automated into an electronic format and 3) the continuous, comprehensive management and care of data after the initial Data Cleanup is accomplished."

The HLIP identifies the scope for TAAMS as follows:

> "The TAAMS system will include master lease, billing and accounts receivable, collection subsystems, and land title functions."

The Amended HLIP focuses on shortcomings of the current systems (from which TAAMS' objectives might be derived) and an explanation of the current status of the TAAMS implementation and deployment efforts. While other sub-projects highlight the need to manage trust assets and distribute trust proceeds using consistent policies and procedures, that objective is not reinforced as it relates to TAAMS and BIA Data Cleanup.

Impact and Importance

The scope and objectives of Data Cleanup and TAAMS are not universally known or established. The lack of clarity causes regions and agencies to pursue diverging priorities, jeopardizing both current Trust obligations and the Department's ability to pursue Reform-related initiatives.

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Stakeholder Participation

Definition – The involvement of all concerned parties in each important step of a program, but especially during program definitions and program acceptance.

Goal – To ensure proper definition acceptance and use of the products of the program.

Extracts from DOI Interviews

Sometimes I wonder whether we are including necessary requirements or simply reflecting different ways of doing the same thing.

The tribes must be allowed to participate in so that they will buy in to the eventual policies and procedures.

EDS Observations and Findings

The challenge of stakeholder participation in a systems development project is to obtain input from all affected parties, allow for genuinely important regional and local distinctions, and explain why accommodating other desires would not be in the best overall interest of the endeavor. The highly decentralized operational and decision making tradition of the BIA has led in the past to highly customized systems development, such as the current LRIS. This tradition has continued with TAAMS. No core business model for the Title, Realty and Accounting functions of TAAMS has been developed. Extensive customization and variation of TAAMS is underway to accommodate wide variation in local processes and approaches.

At the same time, participation and inclusion of all-important stakeholders is key to the success of process change. The complex and diverse nature of the BIA's trust management activities is real, and must be captured. Furthermore, the tribes and individual Indian beneficiaries have not felt included in the systems development effort. The benefits of TAAMS and Data Cleanup have not been sufficiently discussed with the tribes and individual Indian beneficiaries. This disbursement of information would assist in building a clearer understanding and support for change.

Impact and Importance

Buy in from all of the internal and external stakeholders is essential to achieving the objectives of TAAMS. The regions and agencies need to feel they are involved in the decisions regarding TAAMS; otherwise it will meet with resistance. The Tribes, as beneficiaries and stakeholders, need to feel their voice is being heard in order to support its deployment.

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Project Governance

In a healthy program of change, the current governance structure, processes, and plans will be adequate to successfully deliver the program(s).

Project Governance

Project Governance in this report reviews the following topics:

- Introduction
- Project Integration Management
- Human Resource Management
- Scope Management
- Communications Management
- Time Management
- Cost / Procurement Management
- Quality Management
- Risk Management

Definition – The establishment of clear roles, responsibilities, and accountabilities for the program.

Goal – To run the program in an organized and efficient manner.

Introduction

Governance establishes clear roles, responsibilities, and accountabilities for all organizational constituents, including executive leadership and program managers. Industry best practices include the use of a governance process to oversee and manage spending and to ensure there is an acceptable return on investment. The Value Management discipline enables a program to monitor benefit realization and validate return on investment.

The key to governance is the identification of the program prime sponsor. The program sponsor is a senior executive who fully endorses the program charter and has the authority to control the allocation and retention of required resources, enforce the priority established for the program, and obtain the timely cooperation of all participants. To set direction for the program, the program sponsor must understand the business drivers, organizational hierarchies, and high-level business processes.

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Governance provides a shared understanding and agreement among all participants as to what will be delivered, how it will be completed, and the commitment required.

Governance ensures a unified view that supports achieving the following desired business benefits:

- Ensure programs are delivered on time and within budget
- Ensure issues and risks are identified, managed and appropriately escalated
- Ensure money is not spent on initiatives that will not be implemented
- Address the need for alignment of programs to enterprise goals
- Provide executives with access to information about programs in a consistent format so they will be able to compare various options and make better informed decisions
- Ensure that the change process is managed effectively to minimize the potential negative impact on our employees, organization, and clients
- Ensure that expected benefits of the program are achieved.

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Project Integration Management

Definition – Project Integration Management includes the implementation of the tools and processes required to ensure that the various elements of the project are properly coordinated. These include the Project Management Information System, Integrated Change Control, Work Authorization System, and organizational procedures.

Goal – To run the program in an organized and efficient manner.

Extracts from DOI Interviews

One of the biggest problems is the lack of project management tools, skills, and practices. BIA doesn't have appropriate controls for project management, nor do they possess the skills for project management.

How one sub-project impacts other sub-projects are not being coordinated or communicated.

BIA and OST do not have a change process, which allows changes to be timely processed. It is not clear who will approve changes and new requirements, resolve issues, or make decisions.

EDS Observations and Findings

The TAAMS project is not an integrated effort. TAAMS interfaces, conversions, and data readiness do not share the same organization structure, tools, processes, and project schedule. There is not a program office in place to coordinate the various efforts.

There is no collaborative electronic capability for all project team members to share project management and product information.

A project charter, which lays out the goals and expectations of participants, does not exist.

A consolidated baseline project schedule with responsibility assignments for all project team members, including the contractors, vendors, committees, and work groups with all dependencies, does not exist. Some contractors do not have a schedule with milestones, while others maintain their own schedules and do not share these with the TAAMS project office.

The only issues tracked are the problems encountered during user acceptance testing. There is no integrated change control process and tracking tool, which addresses scope changes, schedule changes, cost changes, quality plan changes, and communication plan changes.

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Project status meetings are not held consistently. There is no reporting on project management activities.

Impact and Importance

Without the project charter and an overall project director setting priorities as well as shared goals and objectives, there is confusion and a lack of trust.

Project measurement and timely, accurate status reporting are necessary to track progress, control and report on the work and to provide confidence to the affected organizations. To provide project coordination requires standard tools, documented processes, and information stored in a collaborative workspace that all team members can share.

Without consistent status meetings with all the key players of the project the actual status of the project, issue resolution, and decisions are not timely and often not shared.

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Human Resource Management

Definition – Human Resources Management consists of the processes required to make the most effective use of all of the people involved with the project. It includes organizational planning, staff acquisition, and team development.

Goal – To make the most effective use of the people assigned to work on the project.

Extracts from DOI Interviews

The lack of adequate governance is a critical problem. The OTFM organization was extracted from the BIA and placed under the authority of OST. Subsequently, the relationship between the BIA and OTFM has been somewhat adversarial.

The BIA Data Cleanup effort is hindered by delays caused by reviews of information or information requests of the Title Plant that can take over a year for BIA to respond, due to resource constraints.

The TAAMS project impacts many organizations. The lack of defined roles and responsibilities is a hindrance. The fragmented oversights in multiple organizations are not conducive to managing a project. It is not clear who will approve changes and new requirements, resolve issues or make decisions.

It is not always clear who is accountable for the success or failure. There is a problem with the delegation of authority throughout. People without responsibility are in positions of authority and people with responsibility do not have authority. The Project Manager needs to have full authority to run the project.

The TAAMS project manager does not have a full-time staff. The project suffers as some of the key people have multiple roles and are not dedicated to TAAMS.

EDS Observations and Findings

The management of the TAAMS project is disbursed across the DOI organization and its contractors. It is unclear who the prime sponsor of TAAMS or BIA Data Cleanup is. The TAAMS Project Manager does not have full responsibility and authority for TAAMS and BIA Data Cleanup. Coordination, communication, and timely information exchange among these entities has not been fully satisfactory.

Some of the Title Plants are not fully staffed.

The TAAMS project lacks organizational planning. We were unable to obtain a project organizational chart. Project stakeholders do not have roles and responsibilities defined. Accordingly, those roles and responsibilities have not been communicated to the team

members. However, we were able to find some roles documented in the *Draft Project Management Plan*, *Data Cleanup Summary Report*, *Deployment and Implementation Plan*, but these are not synchronized. Membership of committees and work groups were not clearly defined. The BIA central office did not commit full-time resources to the TAAMS project.

The TAAMS Project Manager does not have authority to manage the project. The TAAMS Project Manager's position description limits his oversight to the establishment of long-range goals and objectives within the BIA program. The TAAMS Project Manager works with the CIO and the Director of OIRM to develop program direction and priorities.

We were unable to determine who has responsibility for Data Cleanup in the field (TROC, Title Plant Manager, or Data Administrator).

There have been repeated complaints by TAAMS project oversight personnel, as well as OST, that there is poor financial management and tracking. Timely reports on status, allocation of expenditures to task, and related information is not available.

Impact and Importance

An organization chart shows the lines of authority which helps identify and communicate who does what which will reduce the project risk. The organization chart is the basis for developing roles and responsibilities. A responsibility assignment matrix defines who does what and who decides what. Without it, there is confusion about authority and responsibility. These documents are necessary for developing the project schedule and the project communication plan.

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Scope Management

Definition – The processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully. The scope statement forms the basis for an agreement between the project team and the project customer by identifying both the project objectives and the major project deliverables. A change control process should be part of this process.

Goal – To ensure that initial scope and subsequent changes are defined and prioritized, and the project efficiently delivers what has been agreed upon.

Extracts from DOI Interviews

There is not an effective change process, which would allow changes to be processed on a timely basis. It is not clear who will approve changes and new requirements.

For requirements gathering, we need to remove the middleman and work directly with the customer to gather requirements. Currently NAID, BIA, and ATS are sharing the responsibility for requirements.

When the project scope increases but the targeted end date does not change, the project becomes difficult to manage.

EDS Observations and Findings

The scope of both the TAAMS and BIA Data Cleanup projects are ill defined. Changes to the TAAMS project schedule have been incomplete and not baselined. There is not an integrated change control process that is agreed upon by the Change Control Board, which is communicated, and tracked to completion in a re-baselined schedule. Some of the contractors were not even aware that there is a Change Control Board. ATS and BIA negotiate on prioritization, not the Change Control Board. Approved change requests cannot be recognized in the project schedule.

Impact and Importance

If scope is not managed, the project will never meet agreed upon satisfactory results within the time and budget allotted.

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Communications Management

Definition – The processes required to ensure timely and appropriate generation, collection, dissemination, storage, and ultimate disposition of project information. This includes determining the information needs of the stakeholders: who needs what information, when they will need it, how it will be given to them, and by whom. Status reporting and forecasting provides stakeholders with information about how resources are being used to achieve project objectives.

Goal – To ensure everyone concerned has the information needed to carry out their work on the project.

Extracts from DOI Interviews

Communication is very poor. There are almost no horizontal communications. There is no TAAMS Communication Plan. Feedback loops are nearly non-existent. One interviewee said, "BIA and OST don't like, trust, or communicate with each other. There isn't even common courtesy communication between the groups and both organizations are of equal blame."

Plans that were developed were not communicated or followed.

EDS Observations and Findings

A communication plan has not been developed with the stakeholders. A project workbook does not exist where the project team shares all the project management and project work products.

TAAMS issue tracking database is limited to tracking only problems associated with testing. There is a much greater set of issues to acknowledge and discuss.

We were unable to obtain documented processes that explain how to deploy and implement project management deliverables. Meeting minutes from key committees and workgroups were not available.

Well-planned project schedules, which have been baselined, are neither available nor updated weekly. A shared understanding of the project status was not known.

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Impact and Importance

Communication management should provide the critical links among the team members, ideas, and information necessary for success. To gain support and effective progress, everyone involved should be sending and receiving appropriate and effective communications required for performing their function.

Communications are also vital for informing management of the status and progress of the work.

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Time Management

Definition – the processes required to ensure timely completion of the project. To effect this specific activities that must be performed to produce the deliverables are identified and decomposed into smaller, more manageable components to provide better management control. These activities are sequenced, and estimated; then resources are assigned before the schedule is developed, validated, and approved.

Goal – to ensure the project is completed on time.

Extracts from DOI Interviews

The Schedule (Project Plan) is date driven, not event driven.

One of the major problems is that the DOI has never been able to properly coordinate the work that must be performed.

TAAMS scheduling is too aggressive in that the planners have not taken into consideration input from the people working in the field.

When the scope increases and the targeted end date does not change, the project becomes difficult to manage.

In the past, milestones were arbitrarily set for TAAMS and were unrealistic. The priorities are set at the Deputy / Assistant Secretary level and above.

A schedule isn't needed for Data Cleanup. These are defined tasks that reoccur each day until work runs out, which so far hasn't happened.

EDS Observations and Findings

There is an obvious weakness and a lack of discipline in planning, reporting, and forecasting.

There is no TAAMS and BIA Data Cleanup Project Schedule, decomposed to a level manageable with resources and dependencies identified.

The TAAMS Project Office does not integrate ATS's schedule into the Integrated Schedule.

Many tasks have estimates of 66 days.

ATS baselines their project schedule when it is approved by the Project Manager.

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There are no documented standards for using project management tools including MS Project.

The Project Schedule is neither baselined nor approved by BIA and OST.

None of the schedules reviewed, including the *TAAMS Draft Integrated Schedule 07-03-2001* contained an adequate work breakdown structure to complete the TAAMS and BIA Data Cleanup work. The BIA Data Cleanup activities do not match the phases and activities in the process used by Datacom Sciences, Incorporated. ATS tasks do not match the TAAMS Software Release for May 2001 schedule. All of the activities necessary to complete TAAMS and BIA Data Cleanup are not identified in the integrated schedule. Activities for BIA, TROCs, Data Administrator's, Title Plant Managers, Design Team Leaders, Data Administrators, Business Process Trainers, System Trainers, and Project Management are not incorporated into the schedule. The Resources are not consistently identified. (Some resource names are COMPLETED, "J", 445, Super-Users, or no resources are assigned at all.) Various activities are missing.

Dependencies between the activities that are in the schedule are also often missing. Estimates based on duration of more than 5 days do not provide timely insight to the project, (examples of durations in the schedule: 18 weeks, 26 weeks, 12 weeks, 622 days.) Detection of missed completion dates would only occur after the 18 weeks and 26 weeks, which makes it too late to take preventative action.

Effort variance (planned effort compared to actual effort) has not been tracked in the project schedule, which would provide feedback for schedule refinement.

Impact and Importance

Without a schedule the status of the project, neither corrective actions that need to be taken, nor forecasting (time, resources, and costs) can be accomplished.

A schedule must include all the activities in the Work Breakdown Structure, correct dependencies, estimates that can be measured at the end of each week, and resources assigned. It is essential that these components be included in order to have an accurate schedule.

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Cost / Procurement Management

Definition – Cost Management includes the processes required to ensure the project is completed within the approved budget and is primarily concerned with the cost of the resources. Procurement includes the processes required to acquire goods and services from outside organizations

Goal – to ensure the project is completed within budget.

Extracts from DOI Interviews

The constraint on staffing is the money and the availability of people.

Temporary stop work orders on TAAMS because of funding approval delays are having an adverse effect on the project.

EDS Observations and Findings

Financial tracking is a huge problem and there have not been adequate resources assigned to this work.

There are no direct line accounts for Indian related affairs, so money is usually allotted from other accounts.

TAAMS, funded through OST appropriations, has difficulty getting resources and funds.

TAAMS is not receiving timely funding from the OST.

The primary problems identified- in the area of cost and procurement- are the lack of manpower and timeliness of funding.

Human Resource and Procurement costs are not tracked in the Project Schedule.

Impact and Importance

Tracking actual costs and projected costs in the schedule by activity provides the ability to report on the project status, make accurate forecasts and take corrective action.

A well defined Work Breakdown Structure allows variances and forecasting to be performed based on similar activities, type of work to be performed, Regions/Agencies, or across the entire project.

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Quality Management

Definition – The process by which standards are set, communicated and used.

Goal – To ensure the end product complies with the applicable standards and is sufficient and effective.

Extracts from DOI Interviews

We need to define, measure, and track metrics to get an accurate measure of where we are.

The current process is reactive rather than a thought out process. GAO has faulted TAAMS development with these issues.

EDS Observations and Findings

There is a definite and perceived lack of quality metrics by which project and program performance can be tracked.

For the overall TAAMS effort we could not identify a metrics plan, quality plan, nor documented project management processes. There are no methods for gathering meaningful metrics on a project wide basis, or adequate measurement systems to use them.

The TAAMS project team does not manage issues and has no issue aging report.

We did find quality procedures and metrics associated with the BIA Data Cleanup tasks, which was performed by the contractor, and for individual segments of the TAAMS system development process.

There are no documented standards that have been developed and deployed for project management tools.

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Impact and Importance

The absence of adequate quality management exposes projects to risks of cost overruns, missed deadlines and unfulfilled requirements. The absence of a metrics plan means the project leaders are not able to determine the status of the project. It also identifies who will collect the information, how to collect it, the granularity, the frequency to collect, and the method to distribute the information. The metrics plan needs to be approved by the prime sponsor and key stakeholders.

Standards for using project management tools should be developed to support the metrics plan. Without standards there is no basis for accurately determining the status of the project.

Documented plans and processes are of no value if they are not approved by management, communicated to the correct participants, training provided, and implemented.

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Risk Management

Definition - The process by which threats to the success of a project are identified, quantified, communicated and mitigated to the extent possible.

Goal – To ensure that the threats to the success of a project are mitigated and eliminated.

Extracts from DOI Interviews

Presumably, the risks and priorities have been identified, but they are not properly managed, nor have the responsible individuals been identified.

EDS Observations and Findings

The risk management plan created by the TAAMS project Office covers TAAMS only. A similar document covering BIA data cleanup has not been identified. The *Risk Response Plan (Risk Handling)* does not contain the actions to be taken. The project schedule does not contain the actions to be taken and therefore they are not tracked in the schedule. Since the work breakdown structure (work to be done) in the project schedule is not robust, using the existing project schedule is not a valid source of risk identification.

The TAAMS project office, rather than a risk management team, performs risk assessments. A risk management team has not been identified.

As mentioned in earlier discussions (above), the TAAMS effort does not have some of the building blocks to provide for effective risk management. These include the absence of a project charter, work breakdown structure (association of discrete tasks with responsible units and resources) and a comprehensive project schedule.

Impact and Importance

Risk monitoring and control processes provide information that assists with making effective decisions in advance of the risks being realized. It is necessary to identify the actions that are to be taken to mitigate the risk and to ensure that the appropriate actions have taken place.

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Executive Alignment and Commitment

In a healthy program of change, senior management and project sponsors will remain committed to, and engaged in, all key aspects of the program(s).

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Executive Alignment and Commitment

Executive Alignment and Commitment is reviewed in this section using the following topics:

Sponsorship – TAAMS and BIA Data Cleanup

Commitment

Sponsorship - TAAMS / Data Cleanup

Definition – The overall responsibility for defining, supporting, allocating resources and ensuring accountability.

Goal – To ensure the work is completed on time and on budget.

Extracts from DOI Interviews

The Southern Plains Regional Realty Director has been designated as the TAAMS Software Design Manager. His priorities and direction, however, are perceived to originate from the Deputy Commissioner for Indian Affairs, rather than the TAAMS Project Manager.

Key external contributors are unsure as to who has project management responsibility for BIA Data Cleanup.

EDS Observations and Findings

The individuals responsible for establishing program and sub-project direction and priorities have no (or little) authority over the resources dedicated to project activities. Individuals controlling the application of program and project resources have little input into overall direction and responsibilities.

According to the formal job description, the TAAMS Project Manager, is responsible only for long-term direction and high-level goals. At the same time, and with no authority over contributing organizations, he is expected to be creative in the resolution of project-related issues.

The Director of the BIA Office of Trust Responsibilities has recently been named program owner for BIA Data Cleanup. Under the Director there is an acting day-to-day Project Lead. Similarly, with the TAAMS Project Manager, the BIA Data Cleanup Project

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Lead has no direct control or authority over the resources and priorities assigned to Data Cleanup activities.

Impact and Importance

TAAMS and BIA Data Cleanup are two of the cornerstone sub-projects upon which the Trust Reform initiative is founded. Departmental, other governmental and external agencies need to know from whom to obtain information regarding program direction and the status of changes to both business processes and technology services.

Without direct control over the resources committed to sub-project activities, project managers and program owners are unable to ensure that methods and tools are consistently applied, or that metrics designed to baseline current performance – or monitor future performance - are consistently and objectively captured and evaluated.

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Commitment

> Definition – Being convinced that the program is correct and providing whole-hearted support to it.
>
> Goal – To ensure the work is properly supported in order to achieve the programs goal.

Extracts from DOI Interviews

Senior management is knowledgeable as to what has to be achieved and is very committed to achieving the goals.

Trust Reform receives a high level of attention and visibility.

While senior leaders are individually committed to Trust Reform, their efforts are not aligned.

When you get to the upper levels of management, reform is not their primary focus.

EDS Observations and Findings

While committed to TAAMS and BIA Data Cleanup goals, the DOI leadership is not always in agreement as to the status and the priorities. However, the recent efforts on the part of the Special Trustee and the Assistant Secretary - Indian Affairs of Indian Affairs, indicate an intent for the BIA and OST to work more closely together.

The joint BIA/OST memorandum, published by the Special Trustee and the Assistant Secretary - Indian Affairs for Indian Affairs, announcing and identifying an Executive Director of Trust Systems and Projects indicates that the BIA and OST leadership team recognize the impact and importance of working together.

Further evidence of this recognition, and executive commitment to results, can be found in the results of the October 2nd and 3rd sub-project managers meeting jointly hosted by OST and BIA. The common objective for this meeting was to establish unified mechanisms for monitoring and controlling sub-project and reporting on sub-project status.

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Impact and Importance

Executive alignment and commitment is required to ensure that consistent objectives and priorities are communicated and that both business processes and technical services are aligned to Departmental goals.

Commitment also is manifest in the proper allocation of resources and ensuring these resources are assigned and used in an organized fashion.

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Organizational Alignment

In a healthy program of change, the goals and status of the program(s) are understood and communicated.

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Organizational Alignment

Definition – Ensuring there is a correspondence between the business and its processes, and the people who are called upon to use them.

Goal – To ensure that its people using its business processes can effectively run the business.

Extracts from DOI Interviews

Trust reform objectives are not clearly understood throughout the organization. People don't understand their role and the need for change.

Because of the litigation, people are afraid to speak directly. As a result communications get filtered through a prism and some light gets through but not all.

The objectives are not completely understood or shared by all organizations.

A primary source of TAAMS information is a non-DOI public Internet site.

EDS Observations and Findings

The broader OST, BIA, and other stakeholder organizations do not understand the objectives, goals, priorities, or status of TAAMS and BIA Data Cleanup. The "what, where, when, and how" regarding the activities and changes that must take place for successful implementation have not been adequately communicated. Generally, stakeholders do not understand their role in the process, how the implementation will impact them, and what changes will be required in their skills.

There is not an adequate mechanism for ongoing communication regarding TAAMS and BIA Data Cleanup projects throughout the stakeholder organizations.

Impact and Importance

Organizational alignment is critical to running any business or organization. It is important that the staff understand Trust Reform and how their roles supports Trust Reform objectives. Without aligning an organization to its business and processes, the business will be inefficient at best and fail to operate at worst.

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Allocation of Resources

In a healthy system of change, sufficient and appropriate resources will be available to be applied to the program(s).

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Allocation of Resources

Allocation of Resources is reviewed in this section using the following topics:

- TAAMS and BIA Data Cleanup Resources
- Feedback Loop
- Resistance to Change

> Definition – Assigning people, time, equipment, and money.
>
> Goal – To ensure appropriate people, time, equipment and money are provided to complete the work.

TAAMS and BIA Data Cleanup

Extracts from DOI Interviews

There is a conflict for time and resources between the TAAMS and BIA Data Cleanup efforts and current operations. Also, the resources that are available are not properly trained; thus, qualified staff is difficult to obtain.

EDS Observations and Findings

There is no central management with statutory authority to set the priorities and hold people accountable. The field managers do not always have a full understanding of the big picture and what has to be done.

Impact and Importance

Dedicated, focused and trained human resources are required for projects to meet aggressive schedules. They must be engaged. Without dedicated human resources, continuity and "institutional memory" is virtually impossible to obtain. The resources do not have to be fulltime, just dedicated, focused, and trained to perform the tasks required of the plan. Without these resources, the schedule is almost certain to slip. Without the resources, any project is at risk of failure.

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Feedback Loop

Definition – The return flow of information from those who have received a communiqué.

Goal – To validate a common understanding of information.

Extracts from DOI Interviews

Feedback loops are nearly nonexistent within these projects. Those that do exist are very roundabout. Often the feedback loop relies on field personnel calling a very senior individual not directly related to their particular area. They then wait for the information to filter down through the chain of command to the team leader.

EDS Observations and Findings

Staff in the field does not always receive messages, which makes it difficult to grasp the "big picture." Feedback loops are not being used effectively to create change and determine understanding of key messages.

There is little bottom up feedback happening. Therefore, it is not clear if messages being provided are fully understood.

Impact and Importance

The feedback is critical for senior management to understand the communications they provide are correctly understood. It is also critical that communication from the bottom to the top is understood and goes through a minimum of filters. The risk is that the executive team is getting an inaccurate picture of projects and their progress and the project team is getting conflicting priorities.

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Resistance to Change

Definition – Not wanting to move from a current position to some other position.

Goal – To ensure that changes can be made as necessary by using the appropriate means of facilitation.

Extracts from DOI Interviews

The organization is resistant to change. There has to be a major cultural change to achieve project success. Education is a major requirement.

BIA is committed to TAAMS. TAAMS is of major impact and importance of to DOI and BIA executives.

EDS Observations and Findings

TAAMS should change the way the BIA, OST, and the Regional Offices work by adding new functionality and creating a standard way of doing business across all of the BIA Regions. Trust Reform is not top priority to all Regional Directors who are likely to be more focused on local issues. In addition, there is a sense of "protecting my area" and this approach has an affect on priorities. The field has had very little input into the direction and pace of these sub-projects. This causes unnecessary tension and confusion as changes are introduced.

Impact and Importance

Individuals and organizations generally are comfortable with, and have emotional attachment to, the status quo, or the existing state of affairs. This condition, in its least effective form, is called complacency. Although aware that moving away from the present state is the right choice, and perhaps the only choice for survival, individuals and organizations fear the unknown more than the known. Therefore, the motivation to leave the present state—their comfort zone—must be sufficiently strong to move them through the states of transition—denial, resistance, exploration, and renewal. Recognizing and dealing with the resistance to change will help to ensure success in organizational, technology and process changes.

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Measurement Systems

In a healthy program of change, suitable measurement systems will be established to ensure that program benefits are realized and sustained.

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Measurement Systems

Definition – Quantitative status and forecasts that provides a shared understanding of the current program performance among all stakeholders.

Goal – To ensure the program is being run properly and is attaining its goals.

Extracts from DOI Interviews

We do not know where we stand. There is no one office that has a comprehensive handle on the status. There are no measurement systems in place. We need to define, measure, and track metrics to get an accurate measure of where we are.

Measurement milestones exist but they do not monitor the effectiveness of the system. More metrics and quantitative data are necessary. Unrealistic timeframes have been set.

The only measurement for TAAMS is whether it has been deployed

It is tough to have a measurement system when there are no clearly defined business practices that measure that progress.

Effective measurement systems are difficult to establish and have not been well defined. As a result, proper metrics are not in place, making it difficult to monitor and measure accomplishments.

We need to improve how we measure the quality on cleaning up our information.

EDS Observations and Findings

There are no adequate measurement systems in place to measure the progress, forecast the effort, schedule, or cost to complete the TAAMS and BIA Data Cleanup projects. Progress to date compared to the remaining effort, schedule, and cost needs to be communicated.

TAAMS has never stabilized the requirements nor baselined the TAAMS project schedule. This reduces the possibility of measuring the project and makes it impossible to identify and control variance to the schedule, effort, and cost.

BIA never defined the size of the BIA Data Cleanup Project, therefore making it impossible to forecast the cost, effort, and schedule to complete the cleanup activities. There is not an agreed upon position on the status of TAAMS and BIA Data Cleanup.

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Program-level planning has been ineffective; an effort to produce a manageable, integrated schedule that encompasses the tasks for all affected parties, including the Department's tasks, is not underway. Managing the schedule has been neither robust nor proactive. The failure to plan effectively has in turn resulted in deficient program tracking and forecasting. Trends cannot be tracked nor corrective actions taken to maintain project momentum.

The HLIP and Quarterly Report are the main measurement tools used to evaluate Reform-related efforts. They are not granular enough, however, to truly measure progress. Milestones identified in the HLIP frequently indicate the beginning of reform efforts rather than the completion of those efforts. This leaves the Department with no objective means of evaluating the results of efforts to date. Without this information, it is difficult to assess the remaining effort, time and resources that will be required to achieve HLIP objectives.

There is a definite and perceived lack of quality metrics by which project performance can be monitored. The responsibility for metrics is divided across the vendors. A metrics plan was not developed with the prime sponsor(s) and the key stakeholders agreement upon which metrics would be used to measure the project. Therefore, the project is not successfully measured. Consequently, responsibility for project measurement is not understood.

Measurement of the BIA Data Cleanup effort cannot be processed timely when reviews of information to be changed or information requested from the Title Plant sometimes takes over a year to get resolved.

MS Project is used as the scheduling tool. The project status is conducted every two weeks through meetings and conference calls. However, the schedule is not always updated at this time. NAID maintains the TAAMS schedule. All measurements are schedule related. A schedule with activities defined, correct dependencies, weekly measurable estimates, and resources assignments has not been developed. As a result, the primary metrics of effort; cost and schedule cannot be captured. A schedule without dependencies and resources is simply a list of tasks and not a schedule.

All of the activities (work) to be accomplished to complete TAAMS and BIA Data Cleanup have not been identified in the integrated project schedule for TAAMS and BIA Data Cleanup. The BIA Data Cleanup activities do not match the phases and activities in the process used. ATS tasks in the integrated schedule do not match the ATS schedule. All of the resources to perform the activities have not been incorporated in the schedule. The resources are not consistently identified. Dependencies between the activities that are in the schedule are also often missing. This prevents scheduling and baselining the project, which must occur prior to tracking effort, cost, and schedule measurements.

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Impact and Importance

Measuring the performance of a project is critical in determining the current status of the project, identifying trends, taking corrective actions, and forecasting. This is critical in meeting the needs of the stakeholders.

A metrics plan which defines how to measure, report, and monitor the status of the project has not been developed and agreed upon by the prime sponsor and the key stakeholders. Trends cannot be tracked nor corrective actions taken to maintain project momentum.

The benefits of measurement systems are to provide project status and forecasts to the prime sponsor and stakeholders as well as provide direction for corrective actions to keep the project on schedule within budget.

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Methods & Processes

In a healthy program of change, one key ingredient to a successful project implementation is the use of a proven repeatable methodology.

Methods & Processes

Methods & Processes in this report reviews the following topics:

- Overview
- Development Methodology
- Scope
- Requirements Determination
- Change Control
- Integration
- Testing
- Configuration Management

Overview

One of the key ingredients to any successful project implementation is the use of a proven repeatable methodology. A logical methodology will include requirements determination, system development, system deployment, training, project management, metrics, and other components necessary for successful project scoping, implementation and control.

There are many different methodologies for system development, each with its own set of terminology. All methodologies include performing basic processes. The design process documents, develops, maintains and verifies the system design. It provides a solid framework for producing the individual system components that meet the stated requirements.

Deploying hardware and software throughout an organization can be standardized into a repeatable set of actions, resulting in reduced risk, improved efficiency and improved cost effectiveness. The deployment process should be driven by events rather than pre-selected dates. Through the use of after-action reviews and communication of lessons learned, the deployment teams can further streamline their approach and decrease the difficulty and complexity of large rollouts.

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Development Methodologies

Definition – A set of processes that integrate requirements determination, system development, system deployment, training, project management, metrics, and other components necessary for successful project implementation.

Goal – To use processes that provide a framework within which a project can proceed in an organized and structured manner.

EDS Observations and Findings

In the initial stages of the TAAMS development process, it appears that there was not a rigorous development methodology being used. More recently Rational Software's Unified Process (RUP) has been used. Although this methodology is a frequently used industry standard, its application has been less optimal on the TAAMS Title and Realty modules. The RUP methodology is based upon and starts with the development of a redesigned business model from which requirements are developed. Since BIA started the TAAMS development with a COTS software product, redesigned business models and overall systems requirements were never developed. Rather a series of incremental requirement development processes were used. Therefore, the RUP methodology is highly dependent on the business model design and systems requirement, it becomes difficult to have confidence in the whole process down to user testing and user acceptance. For new modules, such as probate, this methodology could be successful if it is followed from start to finish.

ATS is trying to accommodate all of the new requirements into the existing software. The main concern is that there needs to be significant changes to the internal system organization once the requirements are finalized. The development methodology that ATS follows to produce physical and logical component designs appears to be sound. Without detailed requirements, however, those designs cannot be fully validated.

The difference between newly specified and existing components is significant. ATS' methodologies for newly specified and developed functions are based on RUP. RUP provides a well-coordinated set of methods for defining requirements, designing, producing and testing components. However, the RUP methods currently leveraged to modify existing COTS components do not incorporate the robust requirements and design procedures found in ATS' development process. As a result, there is no current, comprehensive documentation describing the requirements or the designs for Title (current or historical) and key Realty components.

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Impact and Importance

Using a development methodology is the only way to deliver a product that consistently meets the expectations of a client. Scope, requirements, change control, development, integration, testing and configuration management are all accommodated in the development methodology to ensure timely and cost effective delivery of the correct system.

Various system life cycle methodologies exist and the choice of one depends on the individual project circumstances. The nature of the particular project, coupled with project management experience play an important role in determining the appropriate methodology to utilize.

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Scope

> Definition – Sets the goals and objectives for what is to be included and excluded in the project.
>
> Goal – To define the boundaries and the parameters of the project.

EDS Observations and Findings

DOI made a decision to purchase a COTS system and make minor modifications to suit their needs.

A COTS solution was chosen in order to force consistent business practices across the regions. About 90 percent of the COTS system was redesigned.

Although a decision was made to use a COTS approach to leverage consistent processes, the extensive system modifications that were required did not result in the quick implementation and standardization that the DOI had hoped for. The lack of applied system development lifecycle processes and methods have caused an unplanned expansion of scope. Extensive customization may have subverted the benefits of standardization. Reprogramming costs may have exceeded the expected benefits of the effort. As a result of all the changes the final outcome far exceeds the original scope of the project. Business and system risks have been injected during the extensive modification to COTS.

Impact and Importance

Writing a definitive scope document and functional specifications define the scope of a project. This is fundamental to planning and executing the project.

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Requirements Determination

Definition --Obtaining, understanding, validating and documenting what is required of the end result of the project.

Goal – To ensure that the product produced satisfies and performs as required.

EDS Observations and Findings

DOI still does not have a complete set of requirements for TAAMS Title and Realty. The decision to use a COTS solution was, in part, based on the hope that it would force a standardization of business practices across the Regions. It would have been better to gather requirements up front and at least gain a greater certainty that the COTS would meet the general needs before going ahead.

ATS used a number of different requirements gathering techniques. While ATS and NAID have decided to use the RUP, they are not utilizing it in the same way. NAID is using context diagrams to build a set of requirements that meets the original RFP. This will be used as a starting point for requirements. The context diagrams are being converted into IDEF0 models using BPWIN. They will be fed into a RUP when complete. ATS is creating process models, and UML Use Cases. The ATS and NAID efforts are being done independently. This allows inconsistencies between the data model, design process and the test cases. Therefore, modules are not designed to match test cases or functionality. Without this standardization success is unlikely.

For TAAMS Title and Realty, the RFP was used as the initial system requirements specification. There were no formal requirements gathered for the project. Modifications were made to the COTS software to meet the general specifications of the RFP. After the initial pilot test, there were major features identified that were missing from the software and a gap analysis was performed to rectify the situation. The original gap analysis generated a list of TAAMS Control Numbers (TCN) that were then used as requirements to modify the software. When these changes were made, the system was to be complete. The IUAT generated another set of TCNs which were used as requirements for changes to the TAAMS system. Without a detailed list of verified, prioritized, validated and signed off requirements there is no accurate way to control the scope of the project.

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Impact and Importance

Using a standard methodology to gather requirements for a complex software application is as important as having a blueprint prior to beginning construction or renovation of a large building. The reason requirements are so critical is they are used during several stages of software development including planning, validating design, testing, creating on-line help, and developing user guides. Documented requirements allow trace ability of specifications to modules. It also helps in developing test cases and serves as input to measurements systems. Due to the original direction of the TAAMS project, forcing consistency through the use of a proven commercially available software package: ArtesiaLand, detailed requirements were never gathered, documented, validated or approved. The lack of requirements has caused delays not only in the deployment schedule of the pilot and acceptance of TAAMS, but with the rollout of other projects in the HLIP. The different directions being taken on requirements determination by NAID and ATS will cause further erosion to a common set of agreed upon requirements.

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Change Control

Definition – A means to manage alterations from the original requirements.

Goal – To ensure alterations are approved, planned, scheduled and carried out in an organized and controlled manner.

EDS Observations and Findings

The TAAMS project is not leveraging an effective change control process. Requested changes are not tied to business requirements. The different contractors use separate change control databases. As a result, no one understands the complete scope of required changes. This has caused delays in development and implementation.

EDS was unable to obtain a published or documented process for change control.

Impact and Importance

Change control is a necessary component to manage the scope of a project. Even with the incomplete set of requirements for TAAMS, an agreed upon change control process is paramount to implementing the product. All prospective changes must be categorized, prioritized and approved by all significant parties before they can be scheduled for development. This is the only way to make sure that the appropriate items are being worked on and in an orderly manner. One or two people cannot develop the priorities for a project of this scope. There is no way to understand the implications of a single change to the system. The approval and prioritization will allow the developer to work on the most important changes.

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Integration

Definition – The process in which separately produced systems are combined and their interactions are defined, developed, tested, and deployed.

Goal – To ensure all connections to TAAMS from other DOI systems operate as required.

EDS Observations and Findings

The integration of TAAMS with the other projects in the HLIP was not well defined in the RFP. Other teams responsible for systems to which TAAMS interface have not been as thoroughly involved, as they should have been. Since there is no clear overall project manager, the individual project team leads did not have direction to integrate their systems with each other.

Impact and Importance

It is very important to determine which systems must be interfaced and integrated with each other. This should be done early in the project and be documented in the functional specifications. By not doing this, risks are introduced which can cause delays and cost overruns and detracts from the overall architecture and integrity of the resulting system(s).

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Testing

> Definition – A means by which a system is compared and verified to perform against its written requirements.
>
> Goal – To systematically prove the system delivers the agreed upon features and functions defined by the requirements.

EDS Observations and Findings

No consistant methodology has been used for testing. There is no clear ownership of the testing processes. Test methods and tools are largely un-integrated, and provide no means of identifying the source or means by which errors are introduced into the software. Without these capabilities, it is difficult to determine where design, development need to change to reduce the likelihood and impact of software failures.

Unit Intergration and System Testing

While current unit testing is performed manually, ATS is deploying an automated testing tool to assist in identifying any other system features that may have been affected by a coding change. As a result, this will help reduce defects.

ATS adds modifications to the pre-existing system or integration test plans as appropriate when modifications are made to the system. The changes to the test scripts are not tied back to the modifications and BIA has never approved the integration test plans as a complete test of the systems.

Without an automated testing tool, system tests are only using test scripts deemed appropriate for the changes made to the system. This process risks introducing errors in other parts of the system not thought to be relevant to the changes.

Integrated User Acceptance Testing

NAID served as the most recent of three Independent Verification and Validation (IV & V) contractors for IUAT. The three vendors used distinct IV & V test strategies, making it difficult to assess the extent to which TAAMS software has stabilized over time.

NAID is developing test cases from live data (documents) and using those test cases to evaluate specific functionality. The candidate live data is entered into the LRIS or IRMS legacy system depending on whether it is Title or Realty data respectively. The legacy data reports are then compared to the TAAMS' equivalent reports to identify inconsistencies. These inconsistencies are then marked as issues that must be

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evaluated and resolved. Reports with no inconsistencies are also identified in the test results.

IUAT test cases attempt to evaluate all possible business conditions. With the absence of approved business requirements, however, there is no means of either tying test cases to specifications or ensuring that all business requirements have been evaluated.

Since the system requirements are unclear and not well documented, it follows that there will be problems testing. All tests, except ad-hoc, should directly tie back to system requirements. Test cases and test scripts need to be designed around each requirement and placed under configuration control. A direct correlation between a requirement and test cases and test scripts that exercise potential variations is needed. If there is a direct correlation, each requirement can be measured and deemed acceptable or not. Without the direct correlation the test cases are at risk of not completely exercising the variables. The test may pass with one document, but fail with another that has a different set of variables. This condition increases the risk that the system will have latent defects that are not discovered until there is damage to the underlying information.

ATS recognizes the need for a more structured test environment that would test all functionality and also provide "suspect" areas that are not clearly defined. There has been significant progress in this area.

Impact and Importance

The testing process validates and verifies components as independent units, as an integrated system, and as a complete system. The four testing scenarios are unit test, integration test, system test and user acceptance test. These four testing scenarios reduce the risk of failures. For each of these scenarios there should be a set of test specifications that includes the test plan, test cases and test data strategy. Each of the testing scenarios builds upon one another and serves as a checkpoint along the way for user acceptance testing. If there is a failure at any step, it is fixed when it is in its most simple form. It is easier to fix a failure at the unit test level than at integration testing. It is easier to fix a failure at integration testing than at user testing. Finally it is easier to fix a failure during user acceptance testing than months later after a system is in production. There should be no surprises along the way. All parties should be well aware of the testing process and expected results prior to each test. The only area where there is any uncertainty is during the final portion of IUAT where the customer has the opportunity for ad-hoc testing.

If the testing scenario described is not followed the risk is increased. There is no way to tell if latent defects are corrupting production information. Any delays in testing affect the roll out of TAAMS and thus other projects in the HLIP.

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Configuration Management

Definition – A methodology to keep track of source code, documentation, problems, changes requested, and changes made to a system as well as control the release into the production environment.

Goal – To have the processes and controls in place to minimize disruption when introducing changes into the production environment.

EDS Observations and Findings

ATS does a good job with configuration management. Configuration management tools and processes varied by development environment. Configuration management in the TAAMS Smalltalk development environment is much more rigorous than that used in the database, reports and conversion environment. The same configuration management tools cannot be used in both environments due to platform differences.

ATS used IBM Visual Age Smalltalk for developing TAAMS. It includes an integrated configuration management tool to control and package releases. It is a very robust development environment.

ATS uses policies and procedures to control and package the releases for the database, reports and conversion environment.

The backbone for the procedural portion of configuration management is the common ATS Job Status Database. This internal control application along with a stringent set of standards is very adequate for guiding the mechanics of configuration management.

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Impact and Importance

Software and hardware deployment is a very complex process. Configuration management helps guide and control the mechanics of the process to reduce the potential for human error. Configuration management allows developers to keep track of the source code, documentation, problems, changes requested, and changes made to a system. If it does not directly link to the change control process it needs to be tightly integrated through processes and procedures.

A good configuration management process will allow multiple developers to work on the same system without risk of interfering with each other. It will also have the capability of creating "builds" or versions of the software that can be thoroughly tested, packaged and deployed. Through the use of good configuration management practices, previous builds of the software can be reproduced even if the original developers are no longer available. The processes associated with configuration management allow for the verification of related activities such as system and user documentation, test case modifications; unit and integration testing and all appropriate reviews are completed.

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Organizational Readiness

In a healthy program of change, all participating organizations will be trained and equipped to ensure that business benefits are achieved and sustained.

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Organizational Readiness

Organizational Readiness is in this report reviews the following topics:

- Requirements for Change
- Transformation Strategies

Requirements for Change

> Definition – Where all concerned understand and can accommodate the necessity of carrying out their work in a new way.
>
> Goal – To ensure everyone can make the changes necessary in the way they carry out their work.

Extracts from DOI Interviews

There has never been a comprehensive effort to convey to the organization what needs to change nor why the change is taking place. There are pockets of people that understand the transformation taking place but those are mostly limited to senior people. Only a few understand the full spectrum.

People in the field are not knowledgeable about the required steps to successfully implement TAAMS at their location. This includes the processes, conversion, data cleanup, and implementation.

EDS Observations and Findings

The high level requirements for change were originally established in 1997, have not been reinforced since the original Strategic Plan was replaced by a series of HLIPs. Detailed change requirements have not been developed for the TAAMS system.

The Trust Reform Act of 1994, outlines the Department's trust responsibilities and, in creating the Office of Special Trustee for American Indians, establishes a mechanism by which reform requirements are to be identified and prioritized. In 1997, the Special Trustee published a Strategic Plan to implement reforms required by the *American Indian Trust Fund Management Reform Act of 1994*. The Strategic Plan clearly identified issues that needed to be resolved in order for the Department to fulfill its trust responsibilities.

The Special Trustee developed a set of individual initiatives, or sub-projects, that must be completed in order to fulfill the obligations set forth in the *Trust Reform Act of 1994*. These elements were addressed in the HLIP (1998) and the amended HLIP (2000). There have

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been no subsequent publications that describe a new approach, or strategy, for implementing mandated reforms.

These plans envision moving Trust Reform activities from individual field and regional business models to a standardized business model. Some Regional leaders appear willing to change (standardize) title and realty business practices in order to implement information technology systems that will improve overall productivity and reduce the effort required to manage trust responsibilities.

The changes required to effectively manage title and realty data stores are not clearly defined nor is the magnitude of the effort associated with clearing existing backlogs understood. Regions do not yet understand what cleanup issues need to be resolved in order to successfully convert existing electronic, filmed and paper documents into the new system. In addition, the relative impact and importance of these issues have not been defined to enable the regions to prioritize local activities.

The *Implementation Plans, 1998 and 2000*, identify 13 Reform-related sub-projects. The plans highlight the need for current, accurate information and integrated information technology support for that information. The need for "consistent, up-to-date ... policies and procedures covering ... management of trust assets to distribution of trust income" is described in the policies and procedures sub-project. Until September 2001, there has been little effort to integrate and coordinate the project.

Impact and Importance

Understanding the requirements for, and the impact and importance of change is essential if departmental and other governmental organizations are to commit scarce resources to change initiatives. This understanding enables contributing organizations to assess the impact of proposed changes on current and future business operations and information technology services.

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Transformation Strategies

Definition – A means to enable people to change their way of thinking and working from one-way to another.

Goal – To help people make the changes necessary to think and work in new ways.

Extract from DOI Interviews

One interviewee noted: "A transformation strategy is not complete." There is no single document on Trust Reform, however, there are pieces, but all of the organization issues are not resolved. No transformation strategy has been developed. There are more than 550 Indian tribes in the country and they all may do things differently. It is not understood what needs to be done at the local levels to bring about the required change. The current model is to put a system into place and then adapt procedures rather than putting the procedures into place first and then adding the system. New ideas and people are needed to change the organization and move the organization."

EDS Observations and Findings

There is not an overall big picture transformation strategy in place. There is a somewhat limited project plan but not an overall strategy of all of the components that are needed to effect the change from the old to the new business model, processes and systems.

There are no tactical plans in place describing how TAAMS and BIA Data Cleanup will change the processes, responsibility, and duties of DOI employees as well as Tribal or individual Indian responsibilities.

Impact and Importance

There needs to be an overall plan established so that everyone has an understanding of the events that will take place, the impact and importance of those events and the part that they play and the impact on them. Once this is in place, operating units can then develop tactical plans.

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Pages 161 through 166 filed under seal.

Workload Backlog

Definition – Work waiting to be done.

Goal – To have as small a list of work waiting attention as appropriate.

EDS Observations and Findings

BIA staff at the Title Plants have a significant backlog of Data Cleanup recommendations to process. Data Cleanup activities are started based on an anomaly report generated by BIA or its subcontractors. The reports highlight errors and other conditions that are not clear enough to categorize. These uncategorized conditions are not always clear-cut errors; therefore, the reports are called anomaly reports. The anomalies are provided by reports run from legacy databases.

Anomalies can be categorized as duplicates, edit failures, or trace ability failures. There are a series of reports that identify duplicates at the field level. There are anomaly reports that identify edit failures. This encompasses data that has the wrong data characteristics such as a number present in an alphabetic field. The third type of anomaly is the tracing of records through the system. An anomaly occurs when the trace ability is broken. Every anomaly report identifies records with one of these anomaly conditions.

When contractor work is finished on an anomaly, a set of documentation is collected. The documentation supports a recommended action. BIA staff then performs a QA review before it is finalized and data entered into the system. The recommendation and the supporting documentation are combined in a set for BIA review. The task can be delayed based on staffing levels and competing task priorities.

At the time of this report about 10% of the workload was awaiting BIA or Agency actions. There were not enough reviewers to keep up with the contractor output. As a result, the backlog was growing.

Impact and Importance

It is important to take action on an anomaly recommendation quickly. If there is a prolonged lag between anomaly clarifications to entering data in the system, the risk is that another action has taken place and the underlying data has changed. If data change occurs it may nullify the recommended course of action. This adds risk that corrected data will still be incorrect.

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Common Processes

Definition – A processes in the same way to resolve common problems.

Goal – To have common solutions to common problems.

EDS Observations and Findings

Data Cleanup processes are customized for each region. Data Cleanup activities are driven by the local processes. Different processes in different regions make the data cleanup activities more complex. This reflects the separate methods used in each region to respond to unique requirements

An example of a procedure used for essentially the same task is shown with Alaska and Anadarko, OK. Alaska is so new that all data was entered on a first time basis with all documentation available for entry. Anadarko has gaps in their information because they are trying to trace 100 years of documentation.

Impact and Importance

The multiple processes used to capture and report data add unnecessary complexity to the overall process. The reasons for the complexities are understood and effectively dealt with in the local Title Plant. The standardization on a single system would help simplify the processes and standardize the information in the systems.

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Appendix B – Executive & Director Interview Results

The information contained in the sections that follow detailed findings identified in the *TAAMS / BIA Data Cleanup Observations: Highlights and Concerns* report.

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Appendix B – Executive & Director Interview Results

This appendix contains the results of the ABCD Change Assessment interviews conducted with Departmental executives and directors.

Many of the key DOI messages were obtained during interviews with key Department executives and directors involved in the Trust Reform initiatives. A structured framework, based on A.T. Kearney's ABCD Change Assessment template, enabled interviewees to examine eight characteristics of the TAAMS / BIA Data Cleanup projects, and of the Trust Reform initiative:

1. **Scope and Objectives**. The scope and objectives of the program (or projects) are agreed and will remain consistent with the legislative and judicial agenda for Trust Reform.

2. **Governance**. The current governance structure, processes and plans will be adequate to successfully deliver the program.

3. **Management and Sponsorship**. Senior management and project sponsors will remain committed to, and engaged in, all key aspects of the program.

4a. **Goals**. The goals and status of the program(s) are understood throughout the organization.

4b. **Resources**. Sufficient and appropriate resources will be available to be applied to the program.

5. **Measurement**. Suitable measurement systems will be established to ensure that program benefits are realized and sustained.

6. **Processes**. Development and delivery teams will successfully leverage consistent processes and approaches to deliver Trust Reform.

7. **Training**. All participating organizations will be trained and equipped to ensure that business benefits are achieved and sustained.

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Understanding the Scoring Summaries

Each of the above assumptions is expected to be true if an organization is experiencing healthy, constructive change. As participants addressed each assumption, they were asked to evaluate:

- Likelihood: the extent to which the assumption was currently, and was likely to remain, true (an A for likelihood indicates that the assumption is, and is likely to remain true; a D indicates that the assumption is currently, or is likely to become false); and

- Sensitivity: the importance, in terms of overall success, that should be assigned to ensuring that the assumption remained true (an A for sensitivity indicates that the project will, in all likelihood, be successful regardless of whether this assumption is true; a D indicates that it is critical to the success of the program that the assumption remain true).

The engagement team has graphed a scoring summary for each major program assumption identified above. The scoring summary illustrates the perceptions of all participating organizations relative to each program characteristic. Small turquoise circles represent individual responses, grouped as follows:

- Executive perceptions – Assistant Secretary level and their direct reports.

- Director perceptions – Regional and Deputy Regional Directors and their direct reports, Program Managers, Sub-Project Managers and key representatives from third party contractors.

- Bureau of Indian Affairs (BIA) perceptions

- Office of Special Trustee for American Indians (OST) perceptions

- Other perceptions - Non-BIA and non-OST participants, such as BLM, MMS and third-party contractors.

In addition, each Scoring Summary includes EDS' observed status (plotted using EDS' corporate logo) and each group's summary evaluation – the arithmetic average – (plotted using a large, pale blue circle).

Plotting the summary perceptions of each group enables EDS' engagement team to determine the extent to which information relevant to key program characteristics is being consistently shared within and across all participating organizations. This information is then included in EDS' observations.

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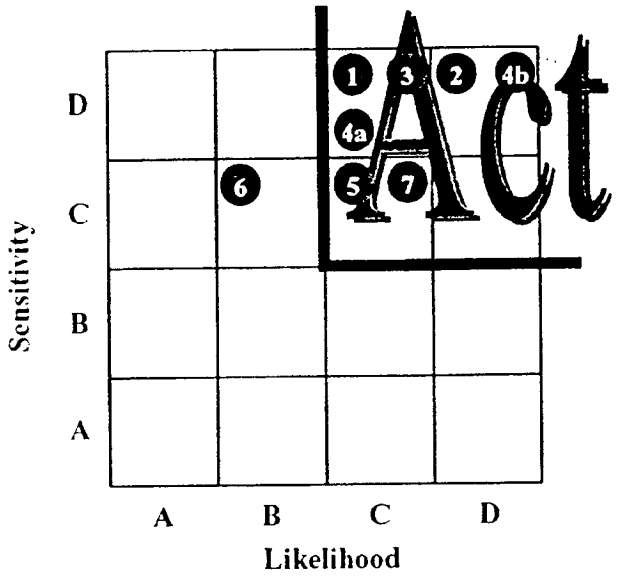
Interpreting the Assessments

Program characteristics that were described, or observed, to be in the upper right hand quadrant need to be acted upon immediately in order to assure a reasonable likelihood of success.

Characteristics observed to be in the lower half of the chart are generally accepted to be less important to program success; characteristics found on the left side of the chart are generally accepted to be contributing to, rather than detracting from program success.

Summary Assessments for TAAMS BIA Data Cleanup

The ABCD Assessment Diagram below summarizes EDS' observed status of the TAAMS and BIA Data Cleanup efforts and their current contributions to Trust Reform.



ABCD Assessment Diagram

The assessment diagrams for each of the eight ABCD categories are found in the sections that follow.

EDS - EDS Observed Status

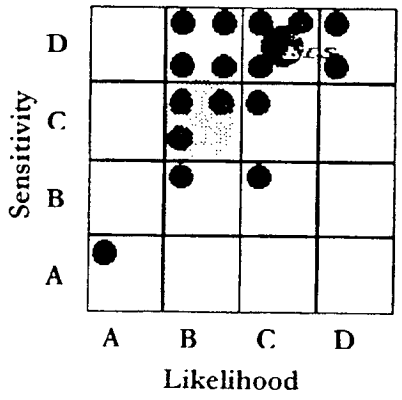
3 - Individual response

- Group's Summary Response

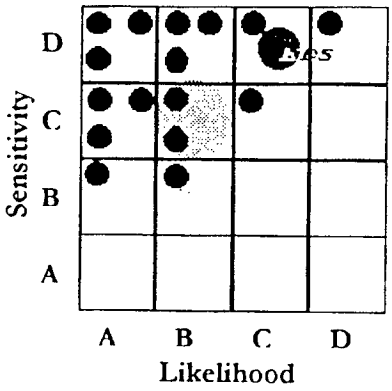
Characteristic #1 - Scope and Objectives

The objectives and scope of the program(s) are agreed and will remain consistent with the political agenda.

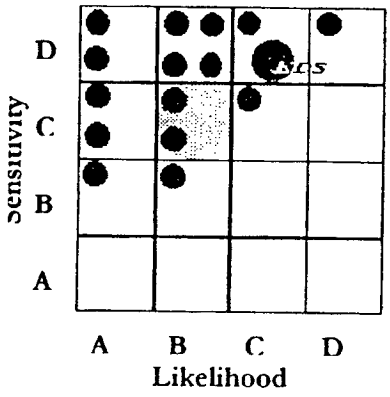
Executive Scoring



Director Scoring



BIA Scoring



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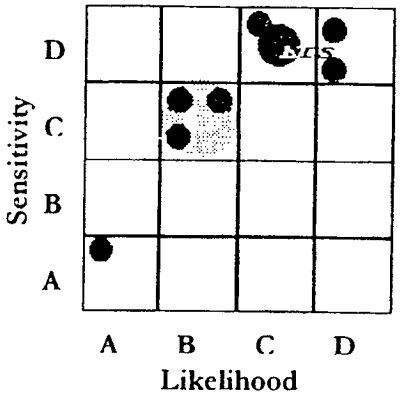

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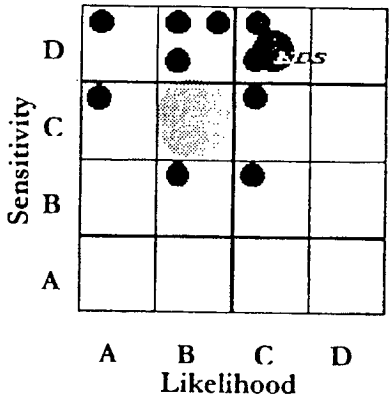

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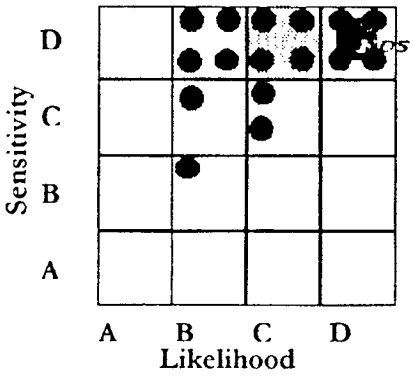
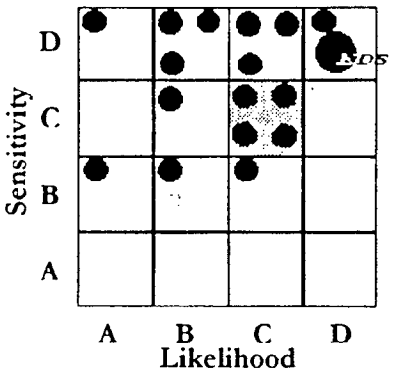
Characteristic #2 - Project Governance

The current governance structure, processes and plans will be adequate to successfully deliver the program(s).

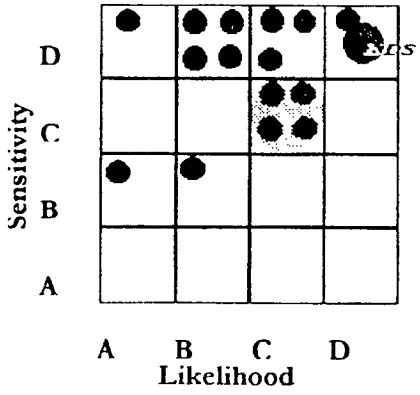
Executive Scoring



Director Scoring



BIA Scoring



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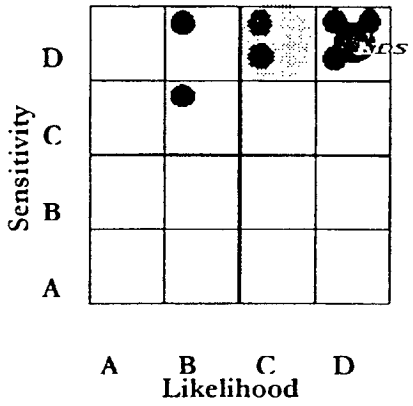

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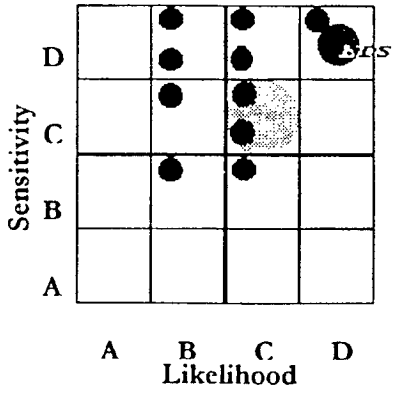

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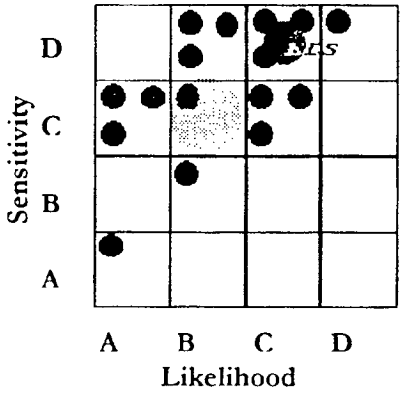
Characteristic #3 - Executive Alignment & Commitment

Senior management and project sponsors will remain committed to, and engaged in all key aspects of the change program(s).

Executive Scoring



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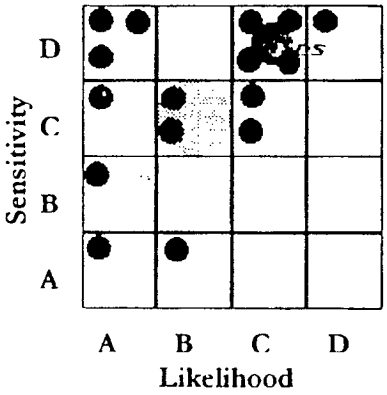

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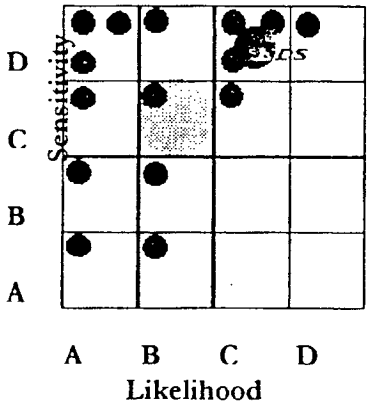

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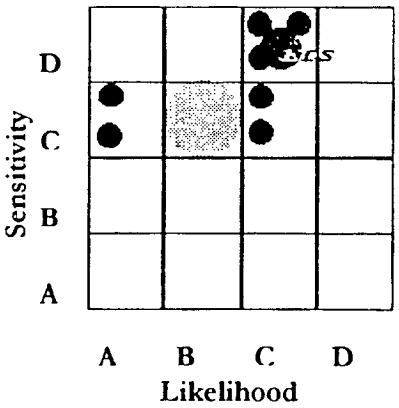

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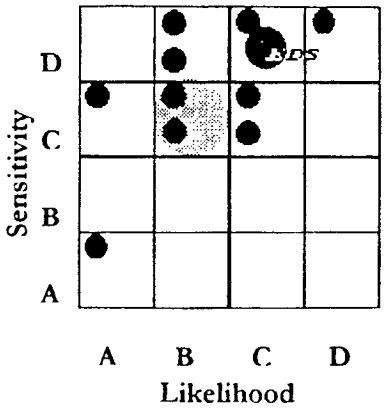

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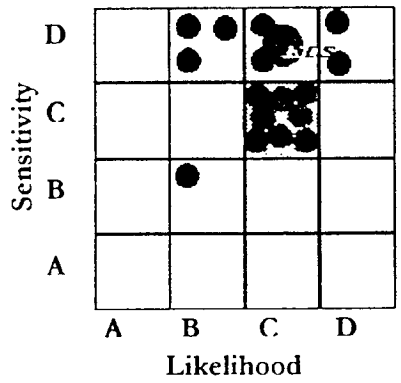
Characteristic #4a - Organizational Alignment

The goals and status of the program are understood and communicated.

Executive Scoring



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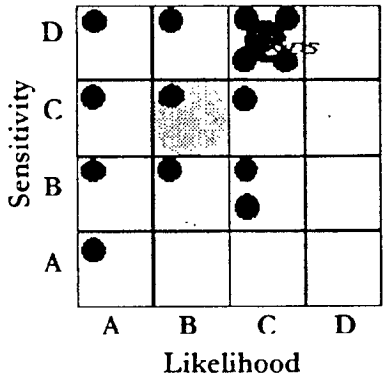

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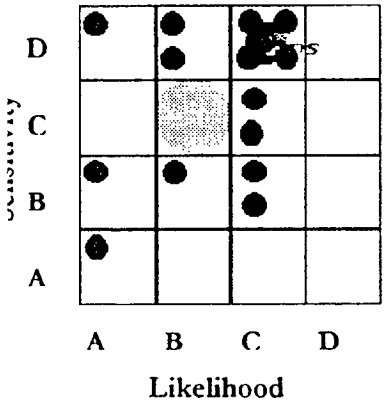

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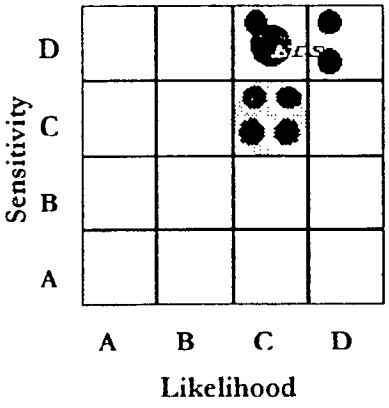

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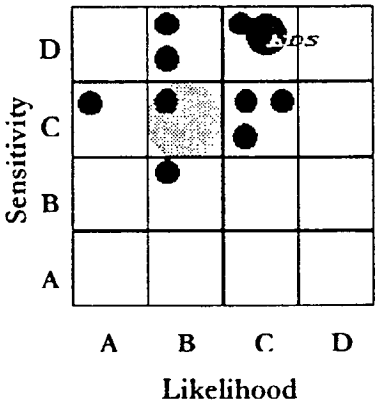

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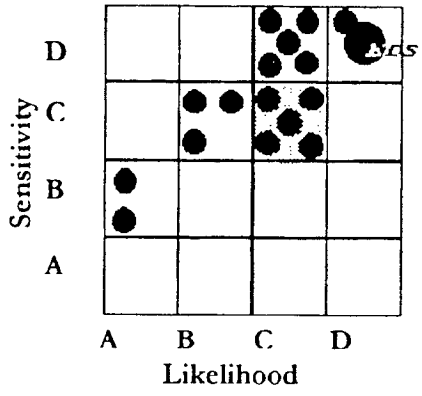
Characteristic #4b - Resource Alignment

Sufficient and appropriate resources will be available to the program(s).

Executive Scoring



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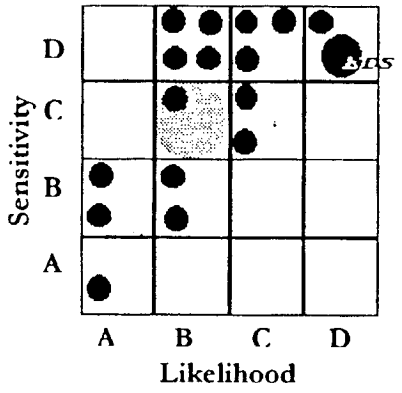

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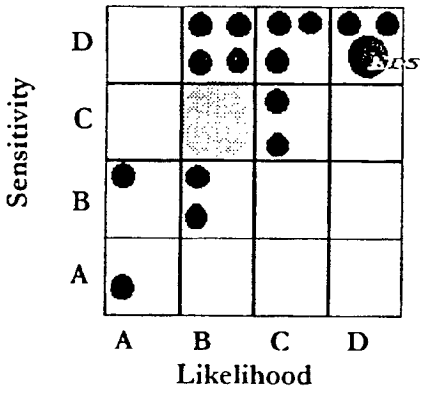

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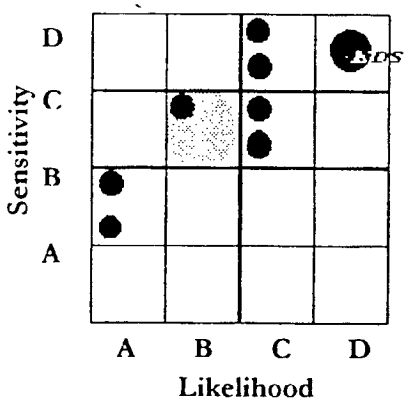

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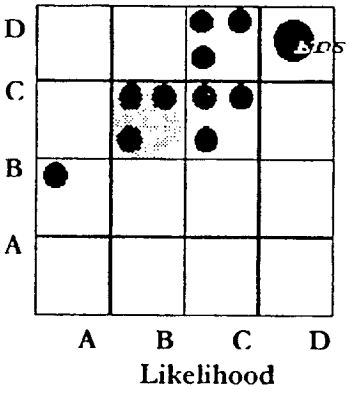

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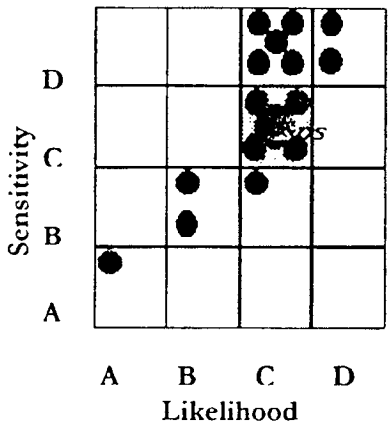
Characteristic #5 - Measurement Systems

Suitable measurement systems will be established to ensure that program benefits will be realized and sustained.

Executive Scoring



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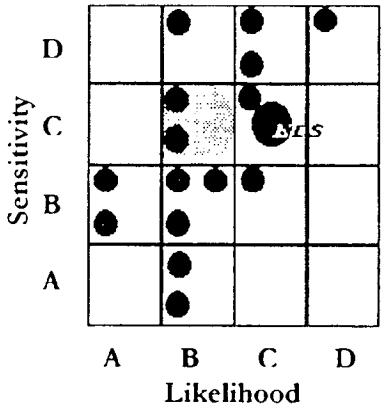

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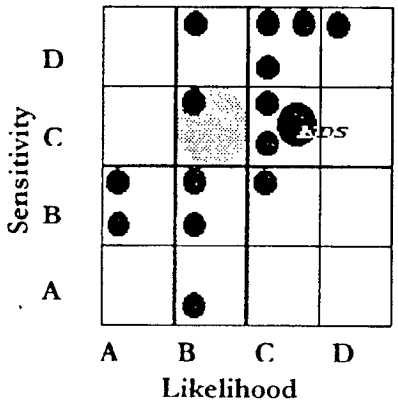

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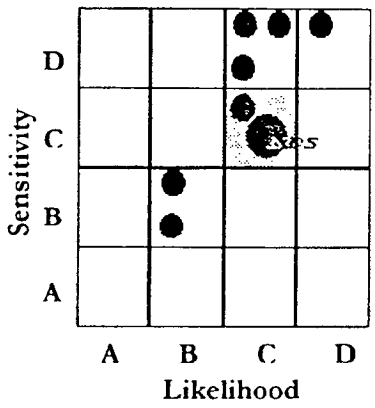

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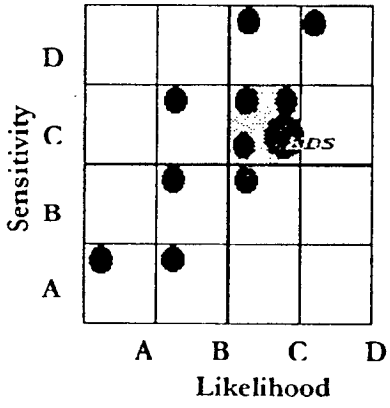

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Characteristic #6 - Methods & Processes

Development and delivery teams will successfully leverage consistent methods / approaches to deliver Trust Reform.

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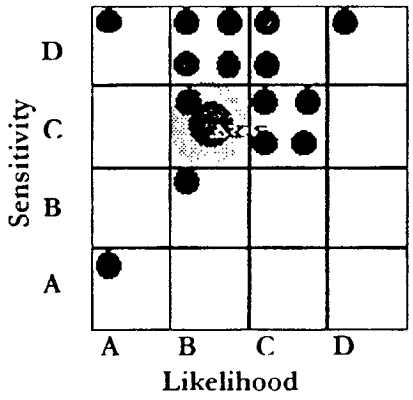

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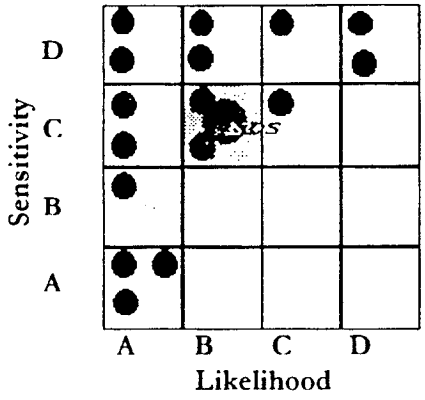

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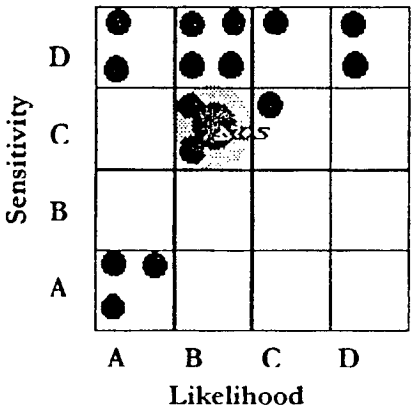

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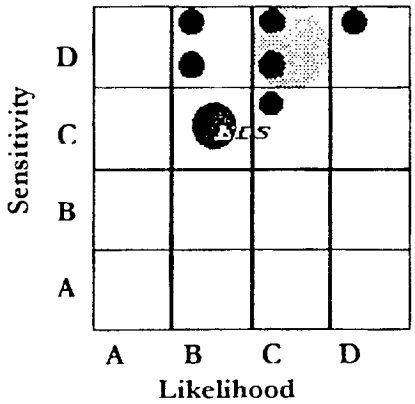

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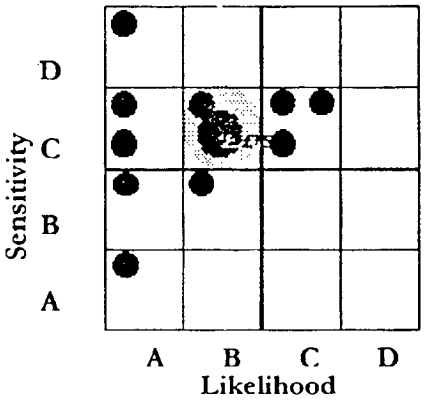

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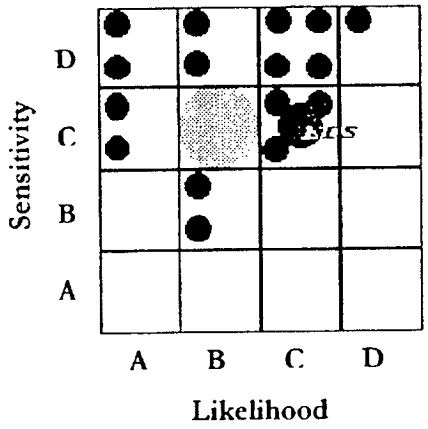
Characteristic #7 - Organizational Readiness

All participating organizations will be trained / equipped to ensure that business benefits are achieved and sustained.

Executive Scoring



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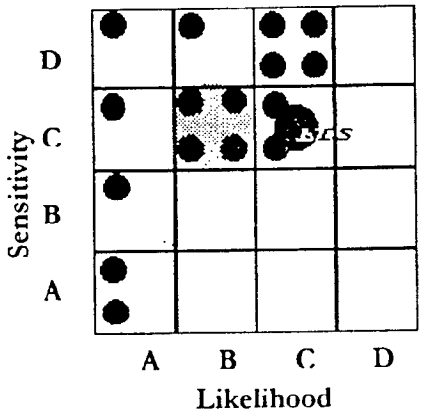

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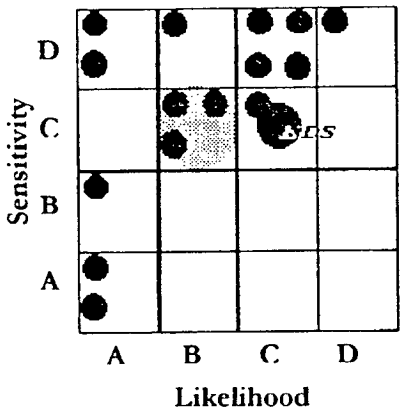

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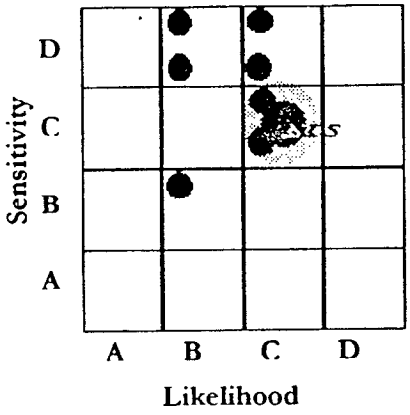

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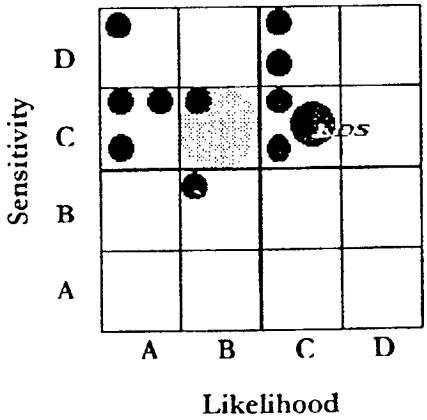

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Appendix C – Glossary and Acronyms

The information contained in the sections that follow detailed findings identified in the *TAAMS / BIA Data Cleanup Observations: Highlights and Concerns* report.

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Appendix C - Glossary and Acronyms

Term	Definition
ATS	Applied Terravision Systems, Incorporated
Beneficiary	Any Native American tribe or individual on whose behalf trust properties are being managed by the Department of the Interior.
BIA	Bureau of Indian Affairs
CCB	Change Control Board
Communication Plan	A document which identifies the information and communications needs of the project stakeholders.
COTS	Commercial Off-the-Shelf
Development Plan	A document which addresses the development needs of individual team members.
DOI	Department of the Interior
HLIP	High Level Implementation Plan
IIM	Individual Indian Monies
IRMS	Integrated Records Management System
IT	Information Technology
ITMA	Inter-Tribal Monitoring Association
IUAT	Integrated User Acceptance Test
LISLA	Land Information System for Leasing and Accounting
LRIS	Land Record Information System
LTRO	Land Title Records Office
MAD	Management Accounting Distribution
Metrics Plan	A document that identifies the measurements necessary to be collected to satisfy the needs of the project sponsor and key stakeholders.
MMS	Mineral Management System
NAID	Native American Industrial Distributors
NARA	National Archives and Records Administration
NMC	Network Management Center
OIRM	Office of Information Resource Management
OST	Office of Special Trustee for American Indians
OTFM	Office of Trust Funds Management
OTR	Office of Trust Responsibilities
PMBOK	Project Management Body of Knowledge
PMC	Program Management Center
PMI	Project Management Institute
Project Charter	A document issued by senior management that provides the project manager with the authority to apply organizational.
Project Workbook	Collaborative workspace for all project team members to share project documents.
Quality Plan	A document that identifies the quality standards that is relevant to the project and determining how to satisfy them.
RDRS	Royalty Distribution and Reporting System

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Term	Definition
SLA	Service Level Agreement
SME	Subject Matter Expert (Expertise)
TAAMS	Trust Asset and Accounting Management System
TAIP	Task Approval & Implementation Proposal
TFAS	Trust Fund Accounting System
TIME	TAAMS Information Migration Evaluation
TMIP	Trust Management Improvement Project
TPPD	Trust Program Performance Dashboard
TPMC	Trust Program Management Center
TPMT	TAAMS Project Management Team
TROC	TAAMS Regional Office Coordinator
WBS	Work Breakdown Structure
Work Breakdown Structure	Project elements which organizes and defines the total scope of the project. Each descending level represents an increasingly detailed definition of a project components.

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