



*Controls Need to Be Strengthened
to Ensure the Modernized e-File Project
Meets Its Expectations*

September 2005

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TREASURY INSPECTOR GENERAL
FOR TAX ADMINISTRATION

DEPARTMENT OF THE TREASURY

WASHINGTON, D.C. 20220

September 20, 2005

MEMORANDUM FOR CHIEF INFORMATION OFFICER

FROM: Pamela J. Gardiner
Deputy Inspector General for Audit

SUBJECT: Final Audit Report – Controls Need to Be Strengthened to Ensure the Modernized e-File Project Meets Its Expectations (Audit # 200520014)

This report presents the results of our review of the Modernized e-File (MeF) project. The overall objective of this review was to determine whether the MeF project sufficiently addressed issues to ensure successful deployment of future releases and accurately reported its expected benefits to external stakeholders. This review is part of the Treasury Inspector General for Tax Administration's Fiscal Year 2005 Information Systems Programs audit plan for reviews of the Internal Revenue Service's (IRS) modernization efforts.

Synopsis

Providing the capability for Internet-based filing of 330 tax return forms through the MeF system supports and facilitates the IRS' commitment to achieve the IRS Restructuring and Reform Act of 1998¹ goal of receiving "at least 80 percent of all tax returns in electronic form by the year of 2007." The MeF project currently has plans for seven releases² and is currently involved in completing development of Release 3.2. The first three releases provided an electronic filing system for forms filed by corporations and tax-exempt organizations. The remaining releases will add forms and schedules filed by partnerships, estates, trusts, and individuals.

Problems in meeting four performance requirements caused the project team to defer them from MeF Release 1 to Release 3.1. During development of Release 3.1, two of these performance requirements were met. The MeF team provided documentation showing that a third requirement subsequently passed testing. However, the remaining performance requirement has

¹ Pub. L. No. 105-206, 112 Stat. 685 (codified as amended in scattered sections of 2 U.S.C., 5 U.S.C. app., 16 U.S.C., 19 U.S.C., 22 U.S.C., 23 U.S.C., 26 U.S.C., 31 U.S.C., 38 U.S.C., and 49 U.S.C.).

² A release is a specific edition of software.



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not met the performance specifications to display tax and information returns within stipulated time periods. The ability to display returns within stipulated time periods will help ensure the efficiency of IRS personnel who access returns through the MeF system.

Further, the MeF project is dependent on software developers to provide the applications enabling the large file-size corporate return filers to use the MeF system. In January 2005, the Department of the Treasury issued regulations mandating further electronic filing requirements for corporations and exempt organizations.³ The corporate community expressed a negative response by claiming the mandate presumes a level of uniformity and technological sophistication taxpayers and the IRS may not yet have achieved. The MeF Release 3.2 includes requirements to support increased return volumes based on projections due to the mandate. If the MeF project is unable to meet the increased return volumes, the corporations will be unable to meet the Department of the Treasury electronic filing requirements.

The MeF Release 3 also included the requirement to develop the Federal/State Single Point Filing System which will permit taxpayers or practitioners to submit multiple Federal and State return types within one transmission through the MeF system. The MeF project team realized the scope of the Federal/State Single Point Filing System requirement and determined it could not be supported by the existing IRS processing systems. The project split Release 3 into Releases 3.1 and 3.2, deferring the Federal/State Single Point Filing System for delivery as part of Release 3.2 in January 2006. The Business Systems Modernization Office (BSMO) estimates MeF Release 3.2 deployment will cost an additional \$16.3 million to include development of the Federal/State Single Point Filing System requirement.

Although the MeF project has provided value to taxpayers and IRS processes, the project team did not follow control processes to ensure all project requirements were developed. In addition, system requirements were not adequately controlled, making it difficult to assess whether all requirements were tested and delivered.

Processes to manage change requests⁴ do not provide reliable information to monitor project development. Additionally, the MeF project's Work Breakdown Structure⁵ does not reflect all change request activities. Without adequate controls to implement change requests, the project team will have difficulty allocating available resources to efficiently and effectively implement all necessary requirements.

³ Corporations filing at least 250 returns and with assets of \$50 million or more and exempt organizations filing at least 250 returns with assets of \$100 million or more with taxable years ending on or after December 31, 2005, must file electronically. Corporations and exempt organizations filing at least 250 returns with assets of \$10 million or more with taxable years ending on or after December 31, 2006, must file electronically.

⁴ A change request is a documented request to assess the impact of a proposed change to a project's defined requirement or process.

⁵ A work breakdown structure is a deliverable-oriented grouping of project elements that organizes and defines the total scope of the project.



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Finally, the MeF project team did not establish a target submission date for mandatory change requests from its IRS customers. The MeF project team is initiating plans to work with its customers to anticipate future mandatory change requests that would affect the MeF project.

Recommendations

To help ensure the efficient and effective development of modernization projects, we recommended the Chief Information Officer (CIO) ensure project teams follow established guidance for managing requirements. To help manage the implementation of change requests, the CIO should assign the Associate CIO, Enterprise Services, to update and formalize the process to monitor change requests for use throughout the Modernization and Information Technology Services organization. Further, guidance should be established to include change requests into the related work breakdown structure. Additionally, to ensure the project teams are aware of all anticipated changes affecting current system development activities, the CIO should establish a communications process with the Legislative Analysis, Tracking, and Implementation Services office and the business operating divisions. The BSMO should also establish deadlines for submitting mandatory change requests to ensure it can plan for their delivery.

Response

IRS management generally agreed to four of the five report recommendations. The CIO agreed to document implementation of all project requirements throughout the project life cycle in the System Requirements Report and to update all requirements traceability verification matrices beginning with MeF Release 4. The CIO agreed there were inaccuracies resulting from the process to control change requests to the MeF project applications and has since corrected those inaccuracies as well as provided direction to projects responsible for the maintenance and tracking of the change requests.

The CIO agreed with the recommendation to help ensure the project team is aware of all anticipated changes affecting current system development activities. The Electronic Tax Administration (ETA) organization, acting as the MeF Business Requirements Director, has a process in place to monitor the Legislative Implementation Tracking System for pending and enacted legislation and to reflect those changes as updated business requirements. Through the Reverse Request for Information Services process, the ETA organization reviews requests from other projects to determine if there is an impact on the MeF project. Monitoring the possible legislative changes as well as reviewing in-process Requests for Information Services enables the ETA organization to help determine the prioritization schedule for delivery of business requirements to the BSMO.

The CIO agreed with the recommendation about anticipating change requests by stating the ETA organization follows the established Business System Development Request for Information



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Services schedule, as outlined in the Internal Revenue Manual, for projects being developed by contractors to help ensure timely implementation of change requests. The MeF project is not explicitly listed in the Internal Revenue Manual exhibit, but the ETA organization applies this schedule for MeF project change requests. Further, the ETA organization is establishing a Forms Change Committee to gain management control over the annual forms change process. This Committee expects to convene the kick-off meeting in September 2005.

The CIO disagreed with the recommendation to control change requests in the work breakdown structure, stating the work breakdown structure is a planning tool to identify the tasks that need to be accomplished and the relationships between those tasks. In lieu of the work breakdown structure, the MeF project team relies on the build schedules, change request impact assessments, and change request status sheets maintained by the project to track the implementation of change requests and the subsequent impact on the overall project development. We are concerned these practices may not adequately consider the effect of change requests with major staffing implications. Additional Office of Audit comments are contained in the report. Management's complete response to the draft report is included as Appendix VI.

Copies of this report are also being sent to the IRS managers affected by the report recommendations. Please contact me at (202) 622-6510 if you have questions or Margaret E. Begg, Assistant Inspector General for Audit (Information Systems Program), at (202) 622-8510.



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Background

The Modernized e-File (MeF) project's goal is to replace the current technology for filing Internal Revenue Service (IRS) tax return forms with modernized, Internet-based electronic filing applications. The MeF project aims to increase electronic filing use through a system that is efficient and easy to access, use, and maintain. This project serves to streamline filing processes and reduce the costs associated with the paper-based technology. Providing the capability for Internet-based filing of 330 tax return forms through the MeF system supports and facilitates the IRS' commitment to achieve the IRS Restructuring and Reform Act of 1998¹ goal of receiving "at least 80 percent of all tax returns in electronic form by the year of 2007."

The MeF project currently has plans for seven releases² and is currently involved in completing development of Release 3.2. The first three releases provided an electronic filing system for forms filed by corporations and tax-exempt organizations. The remaining releases will add forms and schedules filed by partnerships, estates, trusts, and individuals. Although forms for partnerships, estates, trusts, and individuals can be electronically filed now, the current process has file size and standardization limitations that hinder achieving an 80 percent submission rate.

This audit is the second³ in a series of reviews of the MeF project development and deployment activities. This review was performed at the Business Systems Modernization Office (BSMO) facilities in New Carrollton, Maryland, during the period January through April 2005. The audit was conducted in accordance with *Government Auditing Standards*. Detailed information on our audit objective, scope, and methodology is presented in Appendix I. Major contributors to the report are listed in Appendix II. Appendix V presents an overview of the components of the Enterprise Life Cycle.⁴

¹ Pub. L. No. 105-206, 112 Stat. 685 (codified as amended in scattered sections of 2 U.S.C., 5 U.S.C. app., 16 U.S.C., 19 U.S.C., 22 U.S.C., 23 U.S.C., 26 U.S.C., 31 U.S.C., 38 U.S.C., and 49 U.S.C.).

² A release is a specific edition of software.

³ *Modernized e-File Project Integration Difficulties Have Delayed Its Deployment* (Reference Number 2004-20-072, dated March 2004).

⁴ The Enterprise Life Cycle establishes a set of repeatable processes and a system of reviews, checkpoints, and milestones that reduce the risks of systems development and ensures alignment with the overall business strategy.



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Results of Review

The Modernized e-File Project Is Providing Value to Taxpayers

The MeF project has made progress in developing the modernized, web-based platform for electronically filing IRS tax return forms. The MeF project currently consists of several releases.

- Release 1 developed the infrastructure, application base, and support for 53 forms filed by corporations and 6 forms filed by exempt organizations. This Release became operational in February 2004.
- Release 2 added the remaining 44 forms associated with corporations and the public disclosure capabilities required by the Tax Exempt and Government Entities Division. This Release became operational in August 2004.
- Release 3.1 incorporated Return of Private Foundation or Section 4947(a)(1) Nonexempt Charitable Trust Treated as a Private Foundation (Form 990-PF) and the ability to file extensions for U.S. Corporation Income Tax Return (Form 1120) and U.S. Income Tax Return for an S Corporation (Form 1120S). This Release became operational in January 2005.
- Release 3.2 will add the Federal/State Single Point Filing System⁵ platform and the Federal/State components for Form 1120, Form 1120S, and Return of Organization Exempt From Income Tax (Form 990). This Release is planned to be operational in January 2006.

As of April 24, 2005, the MeF project had received and processed the following documents:

- A total of 229,245 corporate income tax returns and related applications for extensions of time to file these returns.
- A total of 1,903 tax-exempt organization returns and related applications for extensions of time to file these returns.

The value of the MeF project extends beyond providing taxpayers the ability to file returns electronically via the Internet. The IRS also receives benefits from this electronic filing capability. The IRS has realized processing efficiencies with the MeF project and has generally met all processing and resource performance goals. For example, in Fiscal Year 2004 the MeF

⁵ The Federal/State Single Point Filing System will permit transmitters to submit multiple Federal and State return types within one transmission.



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project planned to reduce its commitment from 364.86 to 364.73 Full-Time Equivalents (FTE)⁶ for processing the following returns: Form 990, Short Form Return of Organization Exempt From Income Tax (Form 990-EZ), and U.S. Income Tax Return for Certain Political Organizations (1120-POL). It was able to realize a reduction in processing to require only 240.27 FTEs.

MeF project development activities and applications are still being refined

In our previous audit of the MeF project, we recommended the project team deliver a project's physical design documentation prior to project development activities and certify the design is in compliance with the Enterprise Architecture. Currently, the Enterprise Architecture Office does not have a procedure for conducting engineering reviews to certify a project's physical design. This procedure is under development because of changes in the Enterprise Architecture Office's personnel.

In addition, the MeF Release 1 deferred four performance requirements. Problems in meeting these requirements caused the project team to defer them to MeF Release 2 and then to Release 3.1. During development of Release 3.1, two of these performance requirements were met.

The two remaining performance requirements were deferred for completion during the deployment of Release 3.1. The MeF team provided documentation showing that one of these requirements passed testing during release deployment. However, the remaining performance requirement has not met the performance specifications to display tax and information returns within stipulated time periods. The ability to display returns within stipulated time periods will help ensure the efficiency of IRS personnel who access returns through the MeF system.

Further, the MeF project is dependent on software developers to provide the applications enabling the large file-size corporate return filers to use the MeF system. The MeF project team stated the software developers were aware of the MeF Release schedule but did not develop the software applications to facilitate electronic filing of large file-size corporate returns.

In January 2005, the Department of the Treasury issued regulations mandating further electronic filing requirements for corporations and exempt organizations.⁷ There have been negative responses to the mandate by the corporate community claiming the mandate presumes a level of

⁶ An FTE is a measure of labor hours in which 1 FTE is equal to 8 hours multiplied by the number of compensable days in a particular fiscal year. For Fiscal Year 2004, 1 FTE was equal to 2,096 staff hours. For Fiscal Year 2005, 1 FTE is equal to 2,088 hours.

⁷ Corporations filing at least 250 returns and with assets of \$50 million or more and exempt organizations filing at least 250 returns with assets of \$100 million or more with taxable years ending on or after December 31, 2005, must file electronically. Corporations and exempt organizations filing at least 250 returns with assets of \$10 million or more with taxable years ending on or after December 31, 2006, must file electronically.



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uniformity and technological sophistication taxpayers and the IRS may not yet have achieved. The corporate community also believes the mandate fails to account for the wide variety of computer software and technology used to prepare large businesses' tax returns.

The IRS Commissioner stated the IRS is giving the private sector adequate time to ready itself for the new requirements. The Commissioner also stated the Department of the Treasury had to make the new requirement mandatory, rather than giving taxpayers an option to file electronically, so companies would not "drag their feet."

The MeF project team is developing requirements for Release 3.2 to support increased return volumes based on projections due to the mandate. For corporations to meet the Department of the Treasury electronic filing requirements, the MeF system will need to support increased return volumes.

Originally, the MeF Release 3 included the requirement to develop the Federal/State Single Point Filing System which will permit taxpayers and practitioners to submit multiple Federal and State return types within one transmission through the MeF system. The MeF system will make State submissions available for retrieval by registered State agencies.

However, the MeF project team realized the scope of the Federal/State Single Point Filing System requirement and determined it could not be supported by the existing IRS processing systems. Subsequently, in June 2004, the BSMO split MeF Release 3 into Releases 3.1 and 3.2, deferring the Federal/State Single Point Filing System for delivery as part of Release 3.2 in January 2006.

In May 2004, the BSMO reported deployment of the MeF Release 3 would cost approximately \$20 million. In February 2005, the BSMO reported the MeF Release 3.2 deployment will cost an additional \$16.3 million to include development of the Federal/State Single Point Filing System requirement.

The Project Team Did Not Follow Control Processes to Ensure All Modernized e-File Project Requirements Are Developed

Although the MeF project has provided value to taxpayers and efficiencies to the IRS processes, the project team did not follow control processes to ensure all project requirements were developed. We reviewed requirements documentation in the MeF project's System Requirements Report. The System Requirements Report documents a feasible, quantified, verifiable set of requirements that define and scope the business system being developed by the project. These requirements form the basis for the business system design, development, integration, and deployment. The project System Requirements Report is the primary reference for all project requirements needed to complete design and development of the business system.



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We also reviewed the System Integration and Testing⁸ reports, which include the requirements traceability verification matrices that document the specific test cases and test results for each requirement. We compared the System Requirements Report with the System Integration and Testing report results to determine the status of the project's requirements.

The Enterprise Life Cycle directs project teams to verify the project requirements have been baselined, are accounted for, and are consistent among requirement source databases and documents. This includes matching and comparing the requirements text in the System Requirements Report with the requirements text in the requirements traceability verification matrices and ensuring requirements quantities are consistent among all sources. Further, the Enterprise Life Cycle directs project teams to verify the contractor is maintaining the traceability of project requirements for applications developed throughout the project life cycle.

From our review of the requirements traceability verification matrices, we could not determine which requirements in the System Requirements Report were successfully tested. The MeF project team stated requirements in the System Requirements Report are high-level requirements and requirements in the requirements traceability verification matrices are low-level requirements. The high-level requirements are general and further decomposed into low-level requirements. There is not a one-to-one relationship between the requirements in the two documents.

The project team did not have documentation tracing the high-level to the low-level requirements. Our attempt to reconcile the requirements in the System Requirements Report to the requirements in the requirements traceability verification matrices was unsuccessful. For example, Table 1 presents differences in the descriptions of performance requirements⁹ between the System Requirements Report and the requirements traceability verification matrices.

⁸ Integration testing ensures all system components (hardware and software) are working correctly and collectively with other related or dependent systems.

⁹ A performance requirement is based on current business processing time and is considered when the technical requirements of performance are defined.



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Table 1: Descriptions of Performance Requirements

Requirement Report	Requirement Description
System Requirements Report	Display 1 to 10 documents within 6 seconds, 95 percent of the time, under sustained peak hour loads of 30 concurrent users.
Requirements Traceability Verification Matrices	Display up to 10 documents within 3 seconds plus infrastructure time.

Source: MeF System Requirements Report, requirement MeFP.3.1 and System Integration and Testing Reports' Requirements Traceability Verification Matrices, requirement NF1.3.9.

These differences occurred because the project team did not trace the System Requirements Report to the requirements traceability verification matrices during the project testing process and throughout the project life cycle. Further, the MeF project team did not update the System Requirements Report with the requirements changes it made to the requirements traceability verification matrices. A detailed description of the performance requirements in the System Requirements Report and requirements traceability verification matrices is presented in Appendix IV.

Because the project team did not ensure the requirements specified in the project's System Requirements Report were traceable to the requirements in the requirements traceability verification matrices, the adequacy of requirements development and testing activities is difficult to assess. Further, there is no assurance the requirements expected to be deployed are the requirements that were actually deployed.

Recommendation

Recommendation 1: To help ensure the efficient and effective development of modernization projects, the Chief Information Officer (CIO) should ensure project teams follow the Enterprise Life Cycle provisions for managing requirements by tracing System Requirements Report requirements to the requirements traceability verification matrices. In addition, the project team should document implementation of all requirements throughout the project life cycle in the System Requirements Report. This control will provide assurance about the development of all requirements.

Management's Response: The CIO agreed with this recommendation, stating traceability matrices tie the detailed requirements to the test cases. The missing backwards/upwards traceability to the high-level requirements does not represent a significant risk factor to MeF Release 3.2. Therefore, since MeF Release 3.2 is already in flight and well into its life cycle development, and there are limited MeF project



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resources available, the CIO will begin to update all requirements traceability verification matrices starting with MeF Release 4. Further, the CIO agreed to document implementation of all requirements throughout the project life cycle in the System Requirements Report. The CIO stated the project recognized the weakness of not capturing this information during MeF Release 3.1 and implemented the change prior to completing MeF Release 3.1 in March 2005. The MeF project team is now working to complete the Report column for all requirements.

Processes to Manage Change Requests Do Not Provide Reliable Information to Monitor Project Development

Change request processing is used to manage proposed changes affecting modernization products. The Modernization and Information Technology Services (MITS) organization has a procedure for processing change requests.¹⁰ This procedure specifies change requests should be submitted for control to the appropriate Configuration Management Office¹¹ which uses the PRIME contractor's¹² Change Request Tracking System. The project team's configuration management representative is responsible for monitoring the Change Request Tracking System for change requests that may affect their project.

The MeF project team is unable to use the Change Request Tracking System to its full potential to monitor change requests

The change request procedure involves full use of the PRIME contractor's Change Request Tracking System and assumes the PRIME contractor is the modernization program manager. Because the BSMO is the program manager for the MeF project, it is unable to use the Change Request Tracking System to its full potential to monitor and control its change requests. In addition, access to the Change Request Tracking System was limited, causing the MeF project team to monitor the change requests using a manual system.

¹⁰ A change request is a documented request to assess the impact of a proposed change to a project's defined requirement or process.

¹¹ Configuration management involves establishing proper control over approved project documentation, hardware, and software and assuring changes are authorized, controlled, and tracked. The Business Systems Modernization (BSM) project teams work with configuration management offices staffed by the BSMO, PRIME contractor, and the MITS organization's Information Technology Services office. The BSM project teams also work with a non-PRIME contractor configuration management office.

¹² To facilitate success of its modernization efforts, the IRS hired the Computer Sciences Corporation as the PRIME contractor and integrator for the BSM program and created the BSMO to guide and oversee the work of the PRIME contractor.



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The manual system involves maintaining hardcopies of the change requests, related impact statements, and other supporting documentation in folders. When a change request is approved, changes to the Change Request Tracking System are submitted via email from the MeF project configuration management representative to the BSMO configuration management staff. The configuration management staff updates the Change Request Tracking System with the approval date.

Based on our comparison of dates in the MeF change request folders and the Change Request Tracking System, we determined the dates in the Change Request Tracking System were not always accurate. Because the change request folders do not include documentation about when the change request was implemented by the contractor, we had to rely on other project development documents to estimate when the change request was implemented.

Of the 27 Release 3.1 mandatory change requests¹³ submitted in Calendar Year 2004, only 22 included approval and implementation dates on the Change Request Tracking System. The Change Request Tracking System status shows the remaining five mandatory change requests as pending approval, although project development documentation shows they were approved and implemented.

We found discrepancies in approval dates for 8 of 22 mandatory change requests. The discrepancies in approval dates ranged from 5 days to almost 2 months, with an average difference of 33 days. We also found discrepancies in the implementation dates for all 22 mandatory change requests. The discrepancies in implementation dates ranged from 4 days to 3 months, with an average difference of 52 days.

The BSMO's configuration management staff was reassigned on March 20, 2005, to work in the Associate CIO, Enterprise Services, organization. In this capacity and in response to a prior Treasury Inspector General for Tax Administration report,¹⁴ the configuration management staff is working to develop a MITS-wide configuration management process that will include controls for change requests. Until this process is in place, the MeF project configuration management activities will be coordinated between the project team and the configuration management staff.

As the BSMO assumes the program manager role for more modernization projects, it needs to update the configuration management processes to reflect this role. Without an effective process to monitor whether change requests are timely approved and implemented, there is a potential the project capabilities will not be effectively delivered.

¹³ Mandatory change requests involve changes to the MeF system applications that must be made to accept the tax return filings. The changes generally involve updates to tax forms for the current tax year.

¹⁴ *Additional Actions Are Needed to Establish and Maintain Controls Over Computer Hardware and Software Changes* (Reference Number 2004-20-026, dated December 2003).



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The MeF project's Work Breakdown Structure does not reflect all change request activities

The work breakdown structure¹⁵ is a tool to manage project development plans and capture the project's history. The various levels of the work breakdown structure help communicate the project's status to team members and stakeholders and identify accountability to the level of detail required for managing and controlling the project. These levels range from the overall project objectives (upper levels of the work breakdown structure) to the details of the project's work (lower levels of the work breakdown structure). The upper levels provide logical summary points for assessing performance accomplishments, as well as measuring cost and schedule performance.

The MeF project's Work Breakdown Structure was not updated to reflect all of the mandatory change requests received. We reviewed the MeF Release 3.1 mandatory change requests submitted in Calendar Year 2004 for the 2004 tax year changes. We found the Work Breakdown Structure included only 10 of the 27 change requests submitted.

The 17 mandatory change requests received after August 1, 2004, were not included in the Work Breakdown Structure. The MeF project team advised there was not enough time to update the Work Breakdown Structure with the change requests because they were submitted close to the MeF Release 3.1 January 10, 2005, deployment date.

The MeF project team currently uses the contractor's implementation schedules to determine when change requests will be implemented. These schedules allow the project team to manage the implementation of segments of the project development, including the changes requested. These schedules do not track the resources needed to develop the project segments. Without updating the work breakdown structure with information about the impact of implementing the changes requested, the project team will have difficulty determining the:

- Allocation of available development resources to efficiently and effectively implement all necessary project requirements.
- Trends in resources needed to implement change.

Recommendations

Recommendation 2: To help manage the implementation of change requests and the subsequent impact on the overall project development, the CIO should assign the Associate CIO,

¹⁵ A work breakdown structure is a deliverable-oriented grouping of project elements that organizes and defines the total scope of the project.



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Enterprise Services, to update and formalize the process to monitor change requests throughout the MITS organization. These updates need to include direction for projects unable to make full use of the PRIME contractor's Change Request Tracking System.

Management's Response: The CIO agreed there were inaccuracies resulting from the process to control change requests to the MeF project applications and has since corrected those inaccuracies as well as provided direction to the projects responsible for the maintenance and tracking of the change requests.

Recommendation 3: To help manage the implementation of change requests and the subsequent impact on the overall project development, the CIO should establish requirements for including change requests into the related work breakdown structure to provide the ability to allocate resources and provide a baseline for future change request plans.

Management's Response: The CIO disagreed with the recommendation to control change requests in the work breakdown structure, stating the work breakdown structure is a planning tool to identify the tasks that need to be accomplished and the relationships between those tasks. In lieu of the work breakdown structure, the MeF project team relies on the build schedules, change request impact assessments, and change request status sheets maintained by the project to track the implementation of change requests and the subsequent impact on the overall project development.

Office of Audit Comment: The Project Management Institute describes the work breakdown structure as an aid to identify accountability to the level of detail required for managing and controlling the project. During the audit, the MeF project team stated they stopped doing updates to the work breakdown structure due to resource constraints; however, the project team now states they develop only a baseline work breakdown structure. This concerns us because they may not be able to adequately consider the effect of change requests with major staffing implications.

The Modernized e-File Project Team Needs to Work With Its Customers to Receive Change Requests Timely

To be prepared for corporate and tax-exempt organization return filing deadlines,¹⁶ the MeF project had to implement mandatory change requests requiring tax form changes to the MeF application as they were received. The MeF project manager provided direction for developers to begin work on some of the submitted mandatory change requests prior to the official approval

¹⁶ Corporate and tax-exempt organization returns have annual filing due dates on March 15 and May 15, respectively.



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to achieve a timely implementation. The project manager directed these actions because the change requests were received late in the development cycle.

The IRS' Legislative Analysis, Tracking, and Implementation Services office is responsible for planning and monitoring the implementation of legislation having a significant impact on the IRS. This office uses the Legislative Implementation Tracking System, a planning and monitoring system for tracking the activities to implement tax legislation within the IRS.

Requests for Information Services¹⁷ are prepared for all hardware and/or software changes (including legislative changes) to IRS systems. To be able to manage its inventory of processing changes, the Business Systems Development organization¹⁸ has deadlines for submitting Requests for Information Services to be able to plan and implement system changes timely.

Currently, the BSMO does not have established deadlines for submission of change requests and does not regularly coordinate with the Legislative Analysis, Tracking, and Implementation Services office. If the recurring change requests are not anticipated and enforced deadlines are not established for the submission of mandatory change requests, planned requirements may be deferred or delays may occur in the delivery of the current release.

Management Action: The project team is now taking steps to work with its customers to anticipate future mandatory change requests that would affect the MeF project. These steps are in process because the project was frequently reacting to the receipt of unexpected mandatory change requests and needed to revise work plans to develop them in time for deployment.

Recommendations

Recommendation 4: To help provide an efficient and effective process for implementing mandatory change requests, the CIO should establish a communications process with the Legislative Analysis, Tracking, and Implementation Services office and the business operating divisions to ensure the project teams are aware of all anticipated changes which affect current system development activities. The process should include monitoring the Legislative Implementation Tracking System for pending and enacted legislation and related Requests for Information Services; participating in Legislative Analysis, Tracking, and Implementation Services office/business operating division meetings assessing the impact of pending and enacted legislation; and coordinating with the business operating divisions for in-process legislative Requests for Information Services.

¹⁷ A Request for Information Services is a formal memorandum requesting Business Systems Development organization support for changes to current or planned programming, corporate hardware, commercial off-the-shelf software applications, system testing, and other MITS organization activities used in processing tax information.

¹⁸ The Business Systems Development organization defines, builds, tests, delivers, and maintains the IRS' information systems.



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Management's Response: The CIO agreed with the recommendation to help ensure the project team is aware of all anticipated changes affecting current system development activities. The Electronic Tax Administration (ETA) organization, acting as the MeF Business Requirements Director, has a process in place to monitor the Legislative Implementation Tracking System for pending and enacted legislation and to reflect those changes as updated business requirements. Through the Reverse Request for Information Services process, the ETA organization reviews requests from other projects to determine if there is an impact on the MeF project. Monitoring the possible legislative changes as well as reviewing in-process Requests for Information Services will enable the ETA organization to help determine the prioritization schedule for delivery of business requirements to the BSMO.

Recommendation 5: To help provide an efficient and effective process for implementing mandatory change requests, the CIO should direct the BSMO to follow the Business Systems Development organization's concepts of establishing deadlines for submitting and approving Requests for Information Services to help ensure timely implementation of mandatory change requests.

Management's Response: The CIO agreed with the recommendation, stating the ETA organization follows the established Business System Development Request for Information Services schedule, as outlined in the Internal Revenue Manual, for projects being developed by contractors to help ensure timely implementation of change requests. The MeF project is not explicitly listed in the Internal Revenue Manual exhibit, but the ETA organization applies this schedule for MeF project change requests. Further, the ETA organization is establishing a Forms Change Committee to gain management control over the annual forms change process. This Committee expects to convene the kick-off meeting in September 2005.



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Appendix I

Detailed Objective, Scope, and Methodology

The overall objective of this review was to determine whether the Modernized e-File (MeF) project sufficiently addressed issues to ensure successful deployment of future releases and accurately reported its expected benefits to external stakeholders. This review is part of the Treasury Inspector General for Tax Administration's Fiscal Year 2005 Information Systems Programs audit plan for reviews of the Internal Revenue Service's modernization efforts. To accomplish this objective, we:

- I. Determined the status of MeF releases¹ to verify that planned capabilities were still intended to be delivered.
 - A. Interviewed the MeF project team and reviewed documentation to assess project controls for managing MeF Release 3.1² requirements, testing, and defect reporting.
 - B. Interviewed the MeF project team and reviewed documentation to determine the status of plans for delivering the capabilities needed for the Federal/State Single Point Filing System³ in MeF Release 3.2.⁴
 - C. Interviewed the MeF project team and reviewed documentation to obtain the status of plans to develop and deploy the remaining MeF releases.
- II. Reviewed previously identified risks and issues to determine whether they were adequately resolved and their impact on the delivery of future MeF releases. To determine the effect of unanticipated changes to MeF Release 3.1 project development activities, we reviewed all 27 Release 3.1 mandatory change requests submitted in Calendar Year 2004. Of the 27 mandatory change requests, only 22 included approval and implementation dates on the Change Request Tracking System.
- III. Determined how accurately the MeF project accomplishments were reflected in information provided to external stakeholders.

¹ A release is a specific edition of software.

² Release 3.1 plans to incorporate Return of Private Foundation or Section 4947(a)(1) Nonexempt Charitable Trust Treated as a Private Foundation (Form 990-PF) and the ability to file extensions for U.S. Corporation Income Tax Return (Form 1120) and U.S. Income Tax Return for an S Corporation (Form 1120S).

³ The Federal/State Single Point Filing System will permit transmitters to submit multiple Federal and State return types within one transmission.

⁴ Release 3.2 plans to add the Federal/State Single Point Filing System platform and the Federal/State components for Form 1120, Form 1120S, and Return of Organization Exempt From Income Tax (Form 990).



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Appendix II

Major Contributors to This Report

Margaret E. Begg, Assistant Inspector General for Audit (Information Systems Programs)
Gary Hinkle, Director
Edward A. Neuwirth, Audit Manager
Mark Carder, Senior Auditor
Michael Garcia, Senior Auditor
Beverly Tamanaha, Senior Auditor



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Appendix III

Report Distribution List

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Director, Stakeholder Management Division OS:CIO:SM
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Appendix IV

Modernized e-File Performance Requirements

The following tables present the Modernized e-File (MeF) requirements contained in the current MeF System Requirements Report (Table 1) for all releases¹ and the System Integration and Testing² reports, which includes the Requirements Traceability Verification Matrices for Releases 1, 2, and 3.1 (Table 2). These tables illustrate the different sets of requirements for the MeF System.

Table 1: System Requirements Report As of October 20, 2004

Requirement Number	Requirement
MeFP.1.1	The MeF System shall support the transmission of tax returns/documents through the Registered User Portal ³ at sustained MeF peak hour loads of 15 concurrent MeF transmitters, each transmitting a file of average size 16 megabytes, at an average speed of 1.544 megabits per second.
MeFP.1.2	The MeF System shall support the request and delivery at the Registered User Portal for a list of Electronic Taxpayer Identification Numbers ⁴ from Third Party Data Store within 5 seconds, 95 percent of the time, at sustained MeF peak hour loads of 15 concurrent users.
MeFP.1.3	The MeF System shall support the Registered User Portal's performance at sustained MeF peak hour loads of 15 concurrent users with the functions of decompression, virus check, Electronic Taxpayer Identification Numbers check, Test/Production Indicator Check, compression, sending to MeF.
MeFP.1.3.1	The MeF System shall support the decompression of a Transmission File at the Registered User Portal within 5 seconds, 95 percent of the time, at sustained MeF peak hour loads of 15 concurrent users, with an average file size of 16 megabytes.

¹ A release is a specific edition of software.

² Integration testing ensures all system components (hardware and software) are working correctly and collectively with other related or dependent systems.

³ Internet access provided to authorized third-party users.

⁴ Taxpayer Identification Numbers are nine-digit numbers assigned to taxpayers for identification purposes. Depending upon the nature of the taxpayer, it is an Employer Identification Number, a Social Security Number, or an Individual Taxpayer Identification Number.



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Requirement Number	Requirement
MeFP.1.3.2	The MeF System shall perform the virus check at the Registered User Portal of a decompressed transmission file within 10 seconds, 95 percent of the time, under sustained MeF peak hour loads of 15 concurrent users, with an average file size of 35 megabytes.
MeFP.1.3.3	The MeF System shall support the Electronic Taxpayer Identification Numbers check and the Test/Production Indicator Check at the Registered User Portal within 3 seconds, 95 percent of the time, under sustained MeF peak hour loads of 15 concurrent users.
MeFP.1.3.4	The MeF System shall support the compression of files in the Registered User Portal within 5 seconds, 95 percent of the time, under sustained MeF peak hour loads of 15 concurrent MeF users with an average file size of 35 megabytes (uncompressed).
MeFP.1.3.5	The MeF System shall support the transmission of a Transmission File from the Registered User Portal to the platform hosting the MeF Application within 10 seconds, 95 percent of the time, under sustained MeF peak hour loads of 15 concurrent users.
MeFP.1.3.6	The MeF System shall support sending of the Transmission File Receipt (Global Transaction Key) or error page to the MeF user from the Registered User Portal within 2 seconds, 95 percent of the time, under sustained MeF peak hour loads of 15 concurrent users.
MeFP.1.4	The MeF System shall support the display of fixed-content webpages, of average size 60 kilobytes, within 3 seconds, 95 percent of the time, under sustained MeF peak hour loads of 15 concurrent users.
MeFP.1.5	The MeF System shall support acknowledging secure receipt of 15 files in the MeF Application mailbox within 30 seconds each, 95 percent of the time, with an average file size of 20 kilobytes.
MeFP.1.6	The MeF System shall support the downloading of a Combined/Compressed acknowledgement file from the Electronic Taxpayer Identification Numbers secure object repository mailbox at T1 speed (1.544 megabits per second), 95 percent of the time, under sustained MeF peak hour loads of 15 concurrent users.
MeFP.1.7	The MeF System shall support the compressing of 10 acknowledgement files per user, of average size 20 kilobytes each, within 30 seconds, 95 percent of the time, under sustained MeF peak hour loads of 15 concurrent users.
MeFP.2.1	The MeF System shall support the MeF Application's validation and processing of Transmission Files in 6 hours, 95 percent of the time, under sustained MeF peak loads of 78 Transmission Files per hour.



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Requirement Number	Requirement
MeFP.3.1	The MeF System shall support the processing for MeF Request, Return and Display, of the first page of tax returns/documents with 1 to 10 pages within 6 seconds, 95 percent of the time, under sustained peak hour loads of 30 concurrent users.
MeFP.3.2	The MeF System shall support the processing for MeF Request, Return and Display, of the first page of tax returns/documents with 11 to 50 pages within 8 seconds, 95 percent of the time, under sustained peak hour loads of 30 concurrent users.
MeFP.3.3	The MeF System shall support the processing for MeF Request, Return and Display, of the first page of tax returns/documents with 51 to 100 pages within 13 seconds, 95 percent of the time, under sustained peak hour loads of 30 concurrent users.
MeFP.3.4	The MeF System shall support the processing for MeF Request, Return and Display, of the first page of tax returns/documents with 101 to 500 pages within 25 seconds, 95 percent of the time, under sustained peak hour loads of 30 concurrent users.
MeFP.3.5	The MeF System shall support the processing for MeF Request, Return and Display, of the first page of tax returns/documents with 501 to 1,500 pages within 45 seconds, 95 percent of the time, under sustained peak hour loads of 30 concurrent users.
MeFP.3.6	The MeF System shall support the processing for MeF Request, Return and Display, of the first page of tax returns/documents with 1,501 to 3,000 pages within 80 seconds, 95 percent of the time, under sustained peak hour loads of 30 concurrent users.
MeFP.3.7	The MeF System shall support the processing for MeF Request, Return and Display, of the first page of tax returns/documents with 3,001 to 36,000 pages within 240 seconds, 95 percent of the time, under sustained peak hour loads of 30 concurrent users.
MeFP.3.8	The MeF System shall support the total processing time for MeF Request, Return and Display, for each subsequent page (after the first page) within 3 seconds, 95 percent of the time, under sustained MeF peak hour loads of 30 concurrent users.
MeFP.4.0	The MeF System shall support, on a peak day, the generation of the MeF batch reports specified in Section 7 of the Use Case Specification Version 1.7 (run in parallel groups) within the nightly processing window between midnight and 6 a.m., 95 percent of the time.
MeFP.4.1	The MeF System shall support the generation of batch and on-demand reports under sustained loads of 50 concurrent MeF users.



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Requirement Number	Requirement
MeFP.4.1.1	The MeF System shall support Internal Revenue Service (IRS) employees in the Employee User Portal displaying pre-generated batch reports in the display of the first page within 10 seconds, 95 percent of the time, under MeF peak loads of 50 concurrent users.
MeFP.4.1.2	The MeF System shall support IRS employees in the Employee User Portal displaying pre-generated batch reports in the display of each subsequent page after the first page within 3 seconds, 95 percent of the time.
MeFP.4.1.3	The MeF System shall support the concurrent generation of on-demand reports, specified in Section 7 of the Use Case Specification Version 1.7, requested by 5 concurrent MeF users, within 3 minutes, 95 percent of the time.
MeFP.5.0	The MeF System shall support receipt generation of a work request confirmation from the Enterprise File Transfer Protocol Network Server/Enterprise File Transfer Utility for MeF file transfer requests within 10 seconds, 95 percent of the time, under sustained peak hour loads.

Source: MeF System Requirements Report – Performance Requirements.



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Table 2: System Integration and Testing Report, Requirements Traceability Verification Matrices

Release	Requirement Number	Requirement	Test Result
Release 1	SYST190	Infrastructure Shared Services shall provide Tier-2 storage area network infrastructure that can be accessed by MeF servers for read/write to direct access storage device.	Waived
	NF1.3.2	The system shall process returns from Electronic Management System no later than 6 hours after receipt.	Deferred to Release 2; Passed in Release 3.1
	NF1.3.3	The system shall be capable of processing tax returns ranging in size from 33 kilobytes for small returns to 351 megabytes for the large returns.	Deferred to Release 2; Deferred to Release 3.1 Post Initial Operational Capability ⁵
	NF1.3.4	During the first year, the MeF system shall be capable of processing the number of tax returns as specified in the <i>MeF/Infrastructure Shared Services Performance Requirements</i> document.	Deferred to Release 2; Passed in Release 2
	NF1.3.6	The system shall scale as the database storage and return volumes increase based on forecasted increases of tax return volumes as specified in the <i>MeF/Infrastructure Shared Services Performance Requirements</i> document.	Deferred to Release 2; Passed in Release 2
	NF1.3.7	The maximum number of supported, concurrent users shall be 25.	Deleted
	NF1.3.8	Concurrent accesses from multiple users shall be supported.	Deferred to Release 2; Passed in Release 3.1

⁵ Initial Operational Capability provides a set of functional and performance characteristics and threshold parameters for the specific release of a system or application.



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Release	Requirement Number	Requirement	Test Result
Release 1 continued	NF1.3.9	The MeF System shall provide the following response times for the Request and Display application to display the Return Tree and the first page of the return through the Employee User Portal. Response time is based on the number of documents in a return. Measurement begins when the transaction reaches the web server and ends when it leaves the web server on the return trip. It does not include the time required to connect to Database 2 (proprietary IBM database software) on the Modernized Tax Return Database mainframe to retrieve return data. Response times, based on the maximum number of documents in a return, are as follows: Up to 10 documents: 3 seconds + infrastructure times. Up to 50 documents: 5 seconds + infrastructure times. Up to 100 documents: 8 seconds + infrastructure times. Up to 500 documents: 15 seconds + infrastructure times. Up to 1,500 documents: 30 seconds + infrastructure times. Up to 3,000 documents: 60 seconds + infrastructure times. Up to 36,000 documents: 220 seconds + infrastructure times. For subsequent forms/schedules, the system will provide 2 seconds + infrastructure times response times.	Deferred to Release 2; Deferred to Release 3.1; and Deferred to Release 3.1 Post Initial Operational Capability
	NF1.5.3.1	The system shall be available 24x7 with the exception of scheduled downtimes.	Waived
	NF1.5.4.9	The capability to automatically log transactions to tape or disk on a continual basis to limit the transactions or data lost in case of system failure shall be provided.	Passed
	BUSI109	Infrastructure Shared Services shall provide infrastructure that supports at peak hour the workload of up to 6,600 electronically filed returns, corresponding to 379 megabytes of data.	Waived



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Release	Requirement Number	Requirement	Test Result
Release 1 continued	BUSI110	Infrastructure Shared Services shall provide infrastructure that supports 24,000 authorized internal users access to electronically file Form 1120 ⁶ and Form 990 ⁷ data, and related data from the Employee User Portal.	Waived
	BUSI110.1	Infrastructure Shared Services shall provide the capability to authenticate and provide authorization for a total of 24,000 users at the Employee User Portal.	Waived
	BUSI111	Infrastructure Shared Services shall provide infrastructure that supports a total of 200 concurrent internal users access to MeF processing and/or data.	Waived
	BUSI111.1	Infrastructure Shared Services shall provide infrastructure that supports a total of 200 concurrent internal users MeF access.	Waived
	BUSI112	Infrastructure Shared Services shall provide infrastructure that supports a total of 200 concurrent external users access to MeF processing and/or data.	Waived
	BUSI112.1	Infrastructure Shared Services shall provide infrastructure supporting 200 concurrent external users MeF access.	Waived
	BUSI113	Infrastructure Shared Services shall provide infrastructure that supports a total of 50 concurrent internal users access to MeF Business Objects reports and data.	Waived
	BUSI114	Infrastructure Shared Services shall provide infrastructure to support the filing of returns from a total of 2,500 large corporations in a peak month with returns of an average size of 20 megabytes.	Waived
	BUSI114.1	Infrastructure Shared Services shall provide infrastructure to support the filing of returns with an average size of 20 megabytes from a total of 2,500 corporations in a peak month.	Waived

⁶ Form 1120 is the U.S. Corporation Income Tax Return.

⁷ Form 990 is the Return of Organization Exempt From Income Tax.



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Release	Requirement Number	Requirement	Test Result
Release 1 continued	BUSI115	Infrastructure Shared Services shall provide infrastructure to support the filing of returns from a total of 32,250 medium-sized corporations in a peak month with medium returns with average size of 2 megabytes.	Waived
	BUSI115.1	Infrastructure Shared Services shall provide infrastructure to support the filing of returns averaging in size of 2 megabytes from a total of 32,250 corporations in a peak month.	Waived
	BUSI98.1.25	During the first year the system shall be capable of processing approximately 65,000 electronically filed Forms 1120 and 1120S. ⁸	Waived
	BUSI98.1.25.1	Infrastructure Shared Services shall provide infrastructure to accept up to 65,000 electronically filed returns and attachments.	Waived
Release 2	NF3.2	The MeF application shall meet the baselined security requirements set by the IRS and the PRIME contractor ⁹ to achieve security certification.	Waived
Release 3.1	BUSI12.1	Infrastructure Shared Services shall provide the infrastructure design and implementation for the transmission through the Registered User Portal, of 990-PF ¹⁰ forms, with transmission files containing returns of average size of 19 pages or 105.5 kilobytes (distributed 90 percent 30 kilobytes, 7 percent 50 kilobytes, and 3 percent 2,500 kilobytes).	Deferred to Release 3.1 Post Initial Operational Capability

⁸ Form 1120S is the U.S. Income Tax Return for an S Corporation.

⁹ To facilitate success of its modernization efforts, the IRS hired the Computer Sciences Corporation as the PRIME contractor and integrator for the Business Systems Modernization program and created the Business Systems Modernization Office to guide and oversee the work of the PRIME contractor.

¹⁰ Form 990-PF is the Return of Private Foundation or Section 4947(a)(1) Nonexempt Charitable Trust Treated as a Private Foundation.



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Release	Requirement Number	Requirement	Test Result
Release 3.1 continued	BUSI12.2	Infrastructure Shared Services shall provide the infrastructure design and implementation for the transmission through the Registered User Portal, of 990-PF forms, with transmission files containing returns of average size of 19 pages or 105.5 kilobytes (distributed 90 percent 30 kilobytes, 7 percent 50 kilobytes, and 3 percent 2,500 kilobytes).	Passed
	BUSI12.4	Infrastructure Shared Services shall support the infrastructure design and implementation for the MeF Application's validation and processing of a file of 1 or more Form 990-PF returns for up to 100 returns or 7.55 megabytes from ingestion at Registered User Portal through storing in the Modernized Tax Return Database.	Passed
	BUSI13.1	Infrastructure Shared Services shall support the infrastructure design and implementation for the transmission through the Registered User Portal, of Forms 7004, ¹¹ with transmission files containing extension forms of average size of 1-5 pages or 5.5 kilobytes (distributed 95 percent at 5 kilobytes and 5 percent at 15 kilobytes).	Deferred to Release 3.1 Post Initial Operational Capability
	BUSI13.2	Infrastructure Shared Services shall support the infrastructure design and implementation for a peak filing of 3,000, Form 7004 applications (16.5 megabytes) in 5 days mid-March with the maximum 3,000 (16.5 megabytes) within peak hours from 8 a.m. to 10 p.m.	Passed
	BUSI13.4	Infrastructure Shared Services shall support the infrastructure design and implementation for the MeF Application's validation and processing of a file of 1 or more Form 7004 applications for up to 100 applications or 505 kilobytes from the placing on the MeF platform through storing in the Modernized Tax Return Database.	Passed

¹¹ Form 7004 is the Application for Automatic Extension of Time To File Corporation Income Tax Return.



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Release	Requirement Number	Requirement	Test Result
Release 3.1 continued	BUSI17.2	Infrastructure Shared Services shall provide the transmission capability for an initial extract Inventory of tax returns accumulated since Release 1 Initial Operational Capability, within 30 days of Release 3.1 Initial Operational Capability for 51,000 returns of average size 15 kilobytes.	Passed
	BUSI18.2	Infrastructure Shared Services shall provide the transmission capability for an initial extract Inventory of tax returns accumulated since Release 1 Initial Operational Capability, within 30 days of Release 3.1 Initial Operational Capability for 51,000 returns of average size 15 kilobytes.	Passed
	BUSI19.1	Infrastructure Shared Services shall provide a monthly batch file transfer capability for Tax Return Extract files between Modernized Tax Return Database and Electronic Tax Administration Marketing Database using the IRS Enterprise File transfer system of up to 250 megabytes per single file.	Deferred to Release 3.1 Post Initial Operational Capability
	BUSI202	Infrastructure Shared Services shall support Assurance Testing System testing using the Employee User Portal infrastructure.	Passed

Source: MeF Release 1, Release 2, and Release 3.1 Requirements Traceability Verification Matrices



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Appendix V

Enterprise Life Cycle Overview

The Enterprise Life Cycle defines the processes, products, techniques, roles, responsibilities, policies, procedures, and standards associated with planning, executing, and managing business change. It includes redesign of business processes; transformation of the organization; and development, integration, deployment, and maintenance of the related information technology applications and infrastructure. Its immediate focus is the Internal Revenue Service (IRS) Business Systems Modernization (BSM) program. Both the IRS and the PRIME contractor¹ must follow the Enterprise Life Cycle in developing/acquiring business solutions for modernization projects.

The Enterprise Life Cycle framework is a flexible and adaptable structure within which one plans, executes, and integrates business change. The Enterprise Life Cycle process layer was created principally from the Computer Sciences Corporation's Catalyst[®] methodology.² It is intended to improve the acquisition, use, and management of information technology within the IRS; facilitate management of large-scale business change; and enhance the methods of decision making and information sharing. Other components and extensions were added as needed to meet the specific needs of the IRS BSM program.

Enterprise Life Cycle Processes

A process is an ordered, interdependent set of activities established to accomplish a specific purpose. Processes help to define what work needs to be performed. The Enterprise Life Cycle methodology includes two major groups of processes:

Life-Cycle Processes, which are organized into phases and subphases and address all domains of business change.

Management Processes, which are organized into management areas and operate across the entire life cycle.

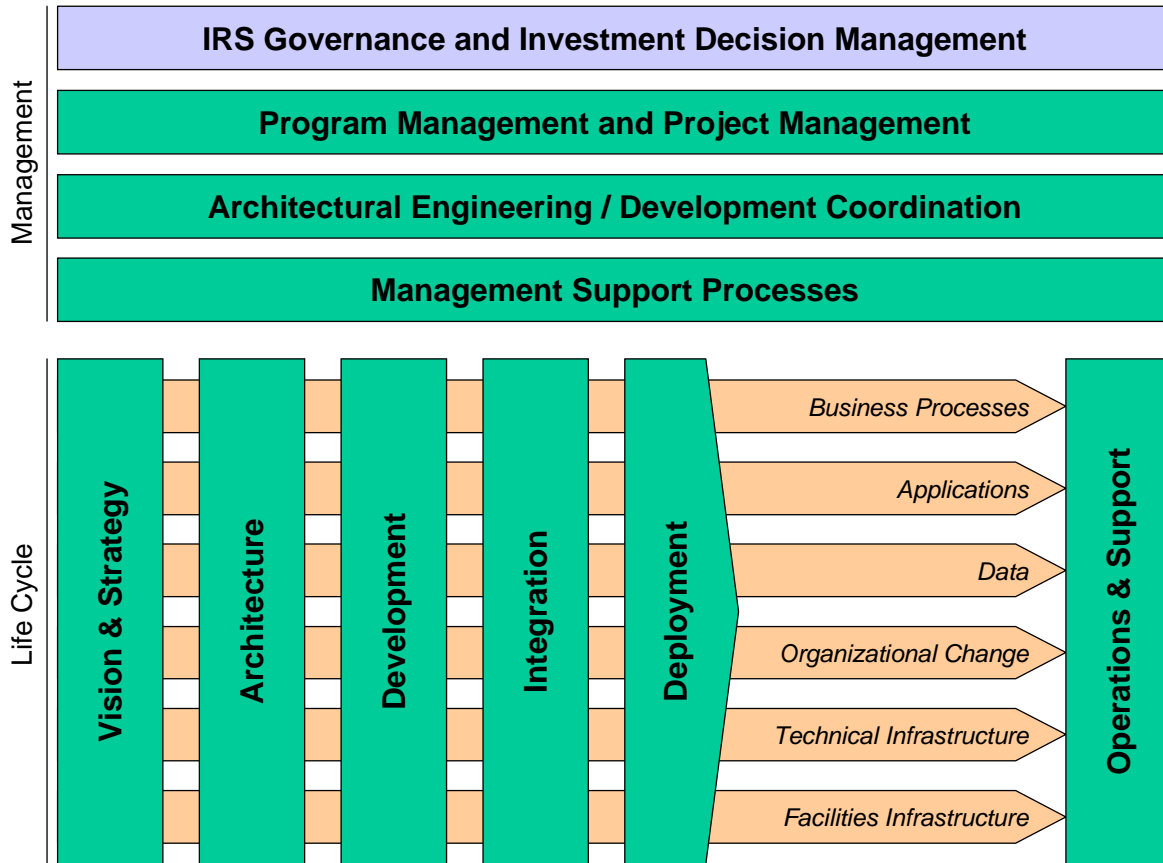
¹ To facilitate success of its modernization efforts, the IRS hired the Computer Sciences Corporation as the PRIME contractor and integrator for the BSM program and created the Business Systems Modernization Office to guide and oversee the work of the PRIME contractor.

² The IRS has acquired a perpetual license to Catalyst[®] as part of the PRIME contract, subject to certain restrictions. The license includes rights to all enhancements made to Catalyst[®] by the Computer Sciences Corporation during the contract period.



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Enterprise Life-Cycle Processes



Source: *Enterprise Life Cycle Guide*, Page 2-16.

Life-Cycle Processes

The life-cycle processes of the Enterprise Life Cycle are divided into six phases, as described below:

- **Vision and Strategy** - This phase establishes the overall direction and priorities for business change for the enterprise. It also identifies and prioritizes the business or system areas for further analysis.



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- **Architecture** - This phase establishes the concept/vision, requirements, and design for a particular business area or target system. It also defines the releases for the business area or system.
- **Development** - This phase includes the analysis, design, acquisition, modification, construction, and testing of the components of a business solution. This phase also includes routine planned maintenance of applications.
- **Integration** - This phase includes the integration, testing, piloting, and acceptance of a release. In this phase, the integration team brings together individual work packages of solution components developed or acquired separately during the Development phase. Application and technical infrastructure components are tested to determine if they interact properly. If appropriate, the team conducts a pilot to ensure all elements of the business solution work together.
- **Deployment** - This phase includes preparation of a release for deployment and actual deployment of the release to the deployment sites. During this phase, the deployment team puts the solution release into operation at target sites.
- **Operations and Support** - This phase addresses the ongoing operations and support of the system. It begins after the business processes and system(s) have been installed and have begun performing business functions. It encompasses all of the operations and support processes necessary to deliver the services associated with managing all or part of a computing environment.

The Operations and Support phase includes the scheduled activities, such as planned maintenance, systems backup, and production output, as well as the nonscheduled activities, such as problem resolution and service request delivery, including emergency unplanned maintenance of applications. It also includes the support processes required to keep the system up and running at the contractually specified level.

Management Processes

Besides the life-cycle processes, the Enterprise Life Cycle also addresses the various management areas at the process level. The management areas include:

- **IRS Governance and Investment Decision Management** - This area is responsible for managing the overall direction of the IRS, determining where to invest, and managing the investments over time.
- **Program Management and Project Management** - This area is responsible for organizing, planning, directing, and controlling the activities within the program and its



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subordinate projects to achieve the objectives of the program and deliver the expected business results.

- **Architectural Engineering/Development Coordination** - This area is responsible for managing the technical aspects of coordination across projects and disciplines, such as managing interfaces, controlling architectural changes, ensuring architectural compliance, maintaining standards, and resolving issues.
- **Management Support Processes** - This area includes common management processes, such as quality management and configuration management that operate across multiple levels of management.

Milestones

The Enterprise Life Cycle establishes a set of repeatable processes and a system of milestones, checkpoints, and reviews that reduce the risks of system development, accelerate the delivery of business solutions, and ensure alignment with the overall business strategy. The Enterprise Life Cycle defines a series of milestones in the life-cycle processes. Milestones provide for “go/no-go” decision points in the project and are sometimes associated with funding approval to proceed. They occur at natural breaks in the process where there is new information regarding costs, benefits, and risks and where executive authority is necessary for next phase expenditures.

There are five milestones during the project life cycle:

- **Milestone 1 - Business Vision and Case for Action.** In the activities leading up to Milestone 1, executive leadership identifies the direction and priorities for IRS business change. These guide which business areas and system development projects are funded for further analysis. The primary decision at Milestone 1 is to select BSM projects based on both the enterprise-level Vision and Strategy and the enterprise architecture.
- **Milestone 2 - Business Systems Concept and Preliminary Business Case.** The activities leading up to Milestone 2 establish the project concept, including requirements and design elements, as a solution for a specific business area or business system. A preliminary business case is also produced. The primary decision at Milestone 2 is to approve the solution/system concept and associated plans for a modernization initiative and to authorize funding for that solution.



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- **Milestone 3 - Business Systems Design and Baseline Business Case.** In the activities leading up to Milestone 3, the major components of the business solution are analyzed and designed. A baseline business case is also produced. The primary decision at Milestone 3 is to accept the logical system design and associated plans and to authorize funding for development, test, and (if chosen) pilot of that solution.
- **Milestone 4 - Business Systems Development and Enterprise Deployment Decision.** In the activities leading up to Milestone 4, the business solution is built. The Milestone 4 activities are separated by two checkpoints. Activities leading up to Milestone 4A involve further requirements definition, production of the system's physical design, and determination of the applicability of fixed-price contracting to complete system development and deployment. To achieve Milestone 4B, the system is integrated with other business systems and tested, piloted (usually), and prepared for deployment. The primary decision at Milestone 4B is to authorize the release for enterprise-wide deployment and commit the necessary resources.
- **Milestone 5 - Business Systems Deployment and Postdeployment Evaluation.** In the activities leading up to Milestone 5, the business solution is fully deployed, including delivery of training on use and maintenance. The primary decision at Milestone 5 is to authorize the release of performance-based compensation based on actual, measured performance of the business system.



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Appendix VI

Management's Response to the Draft Report



CHIEF INFORMATION OFFICER

DEPARTMENT OF THE TREASURY
INTERNAL REVENUE SERVICE
WASHINGTON, D.C. 20224

RECEIVED
AUG 24 2005

AUG 22 2005

MEMORANDUM FOR DEPUTY INSPECTOR GENERAL FOR AUDIT

FROM: W. Todd Gram *WTG*
Chief Information Officer

SUBJECT: Draft Audit Report – Controls Need to Be Strengthened to Ensure the Modernized e-File Project Meets Its Expectations – Audit #200520014 (ECMS #0506-6DMJYVMW)

Thank you for the opportunity to review the subject draft audit report. We also appreciate the additional meetings we had with the audit team to discuss the report's observations. As a result of these meetings, the audit team incorporated some of our suggested management actions into the draft report.

We are pleased your report recognizes that the Modernized e-File (MeF) project has:

- Made substantial progress in providing e-filers a web-based platform for complex corporate and exempt organization returns
 - The report shows that, as of April 24, 2005, the MeF project has received and processed the following:
 - A total of 229,245 corporate income tax returns and related applications for extensions of time to file these returns
 - A total of 1,903 tax-exempt organization returns and related applications for extensions of time to file these returns
- Received enthusiastic acceptance from end-users
- Met the overwhelming portion of its performance requirements
- Provided value and benefits to both the IRS and the public we serve

In addition, we appreciate the audit team recognizing that the increase in the Release 3 budget was due to the expanded Federal/State Single Point Filing System requirement, which will permit taxpayers and practitioners to submit multiple Federal and State return



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types within one transmission through the MeF system. We also acknowledge and appreciate the audit team's advice on ways to further improve the MeF project.

We are pleased to say that we agree with four of the five report's recommendations. We have provided our explanations in the attachment as well as some clarification to the audit team's observations.

We appreciate your continued support and the valuable assistance and guidance that your team provides. If you have any questions, please contact me at (202) 622-6800, or members of your staff may contact Judy Mills, Director of Program Oversight, at (202) 283-4915.

Attachment



Controls Need to Be Strengthened to Ensure the Modernized e-File Project Meets Its Expectations

Revised Attachment

Draft Audit Report - Controls Need to Be Strengthened to Ensure the Modernized e-File Project Meets Its Expectations - Audit # 200520014

RECOMMENDATION #1: To help ensure the efficient and effective development of modernization projects, the Chief Information Officer (CIO) should ensure project teams follow the Enterprise Life Cycle provisions for managing requirements by tracing System Requirements Report requirements to the requirements traceability verification matrices. In addition, the project team should document implementation of all requirements throughout the project life cycle in the System Requirements Report. This control will provide assurance about the development of all requirements.

CORRECTIVE ACTION #1A: We agree with this recommendation. We have traceability matrices that tie the detailed requirements to the test cases, developed with heavy user participation and signoff. The missing backwards/upwards traceability to the high level requirements does not represent a significant risk factor to MeF Release 3.2. Therefore, since Release 3.2 is already in flight and well into its lifecycle development, and there are limited MeF resources available, BSMO/MeF will begin to update all Requirement Traceability Verification Matrices starting with MeF Release 4.

IMPLEMENTATION DATE: September 1, 2006

RESPONSIBLE OFFICIAL: Deputy Associate CIO of Program Management

CORRECTIVE ACTION MONITORING PLAN: Starting with Release 4, the MeF project will follow existing guidelines, and we will update all Requirement Traceability Verification Matrices to include a column specifying the high-level requirement within the correlating System Requirements Report.

CORRECTIVE ACTION #1B: We agree with this recommendation. Corrective actions are being taken to close this recommendation. The project recognized the weakness of not capturing this information during Release 3.1 and implemented the change (including a column to enable the documentation of the implementation of all requirements) prior to Release 3.1 Milestone 4 and 5 exit in March 2005. The implementation dates for all requirements implemented (business, interface, M-TRDB, etc.) have been inserted for currently deployed Releases 1 through 3.1.

This process documents the implementation of all requirements, including infrastructure requirements throughout the project life cycle. The Systems Requirement Report includes the column "Actual Release Number and Implementation Date" which is updated whenever a requirement is implemented. MeF is now working to complete the column for capacity and performance requirements which will fully satisfy this recommendation

IMPLEMENTATION DATE: December 1, 2005



Controls Need to Be Strengthened to Ensure the Modernized e-File Project Meets Its Expectations

Revised Attachment

Draft Audit Report - Controls Need to Be Strengthened to Ensure the Modernized e-File Project Meets Its Expectations - Audit # 200520014

RESPONSIBLE OFFICIAL: Deputy Associate CIO Program Management

CORRECTIVE ACTION MONITORING PLAN: The MeF Project office will work with the business to ensure that the implementation date for each requirement is updated in the SRR.

RECOMMENDATION #2: To help manage the implementation of change requests and the subsequent impact on the overall project development, the CIO should assign the Associate CIO of Enterprise Services to update and formalize the process to monitor change requests throughout the MITS organization. These updates need to include direction for projects unable to make full use of the PRIME contractor's Change Request Tracking System.

CORRECTIVE ACTION #2: We agree with this recommendation. The MeF Project office recognizes that there were inaccuracies in the manner in which the existing process was followed, and on May 25, 2005 the project addressed those inaccuracies for the maintenance and tracking of the Change Requests.

However, we are requesting that this recommendation be considered closed for monitoring purposes. A prior TIGTA audit report (#2004-20-026) recommended as Corrective Action 1-2-1 that the CIO develop a transition plan to implement standardized enterprise architecture compliant change management software for use throughout MITS to facilitate change management on an enterprise-wide level.

As a result, on December 23, 2004, MITS developed a plan that is being implemented with appropriate coordination with Information Technology Services and the Capital Planning and Investment Council (CPIC) to complete procedures, processes, directives, and policies for the EA compliant CM software throughout MITS. This plan is addressing further enhancements and monitoring of change requests throughout the MITS organization, including direction for projects unable to make full use of the PRIME contractor's Change Request Tracking System.

IMPLEMENTATION DATE: May 25, 2005
(Please note that December 23, 2004 represents the date the plan was established for establishing enterprise-wide CM processes and tools.)

RESPONSIBLE OFFICIAL: N/A

CORRECTIVE ACTION MONITORING PLAN: N/A



Controls Need to Be Strengthened to Ensure the Modernized e-File Project Meets Its Expectations

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RECOMMENDATION #3: To help manage the implementation of change requests and the subsequent impact on the overall project development, the CIO should establish requirements for including change requests into the related work breakdown structure to provide the ability to allocate resources and provide a baseline for future change request plans.

CORRECTIVE ACTION #3: We disagree with this recommendation. MeF relies on the work breakdown structure as a planning tool to identify the tasks that need to be accomplished and the relationship between those tasks. Therefore, a balance is needed between the work breakdown structure as a planning tool and the schedule. The schedule contains each category of activities that need to be performed (coding, integration, testing, etc.). In lieu of the WBS, MeF relies on Build Schedules, CR Impact Assessments, and the CR Status Sheets maintained by the project to track the implementation of change requests and the subsequent impact on the overall project development.

In this way, each change request is evaluated to determine if it affects the duration of the activity or if the schedule can absorb the additional change. We do not update the work breakdown structure with every change request, but the schedule reflects any changes to dates as a result of the change request. We use this schedule to monitor the delivery dates that we communicate to executives and external stakeholders.

IMPLEMENTATION DATE: N/A

RESPONSIBLE OFFICIAL: N/A

CORRECTIVE ACTION MONITORING PLAN: N/A

RECOMMENDATION #4: To help provide an efficient and effective process for implementing mandatory change requests, the CIO should establish a communications process with the Legislative Analysis, Tracking, and Implementation Services office and the business operating divisions to ensure the project teams are aware of all anticipated changes which affect current system development activities. The process should include: monitoring the Legislative Implementation Tracing System for pending and enacted legislation and related Requests for Information Services (RIS); participating in Legislative Analysis, Tracking, and Implementation Services office and business operating division meetings assessing the impact of pending and enacted legislation; and coordinating the business operating divisions for in-process legislative Requests for Information Services.



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CORRECTIVE ACTION #4: We agree with this recommendation. However, there is a long-time established communications process with the Legislative Analysis, Tracking, and Implementation Services office, the business operating divisions, and Modernization and Information Technology Services (MITS) to ensure awareness of anticipated legislative changes and their impact to current system development activities.

In the case of MeF, ETA acting as the MeF Business Requirements Director representing the business, has followed this established process to monitor the Legislative Implementation Tracking System (LITS) for pending and enacted legislation and to reflect those changes as updated business requirements. Through the Reverse RIS process, ETA reviews RIS' from other projects to determine if there is an impact on MeF. By continuing to monitor possible legislative changes, as well as reviewing in-process RIS', ETA will be in a position to help determine the prioritization schedule for delivery of business requirements to BSMO.

IMPLEMENTATION DATE: September 30, 2005
(Please note that this date is linked to establishing a Forms Change Committee as noted in Corrective Action #5.)

RESPONSIBLE OFFICIAL: Deputy Associate CIO Program Management

CORRECTIVE ACTION MONITORING PLAN: We enter accepted corrective actions into the Joint Audit Management Enterprise System (JAMES) and on the Item Tracking, Reporting, and Control System (ITRAC). These corrective actions are monitored on a monthly basis until completion.

RECOMMENDATION #5: To help provide an efficient and effective process for implementing mandatory change requests, the CIO should direct the Business Systems Modernization office to follow the Business Systems Development organization's concepts of establishing deadlines for submitting and approving Requests for Information Services to help ensure timely implementation of mandatory change requests.

CORRECTIVE ACTION #5: We agree with this recommendation. ETA, acting as Business Requirements Director for MeF, has followed the established Business System Development RIS schedule for projects being developed by contractors as defined in IRM Exhibit 2.22.1-1. MeF is not explicitly listed in this exhibit, but ETA follows the Electronic Management System (EMS) dates – Placeholder in September and Final RIS in November (14 months prior to implementation).



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Recognizing that most changes come as a result of changes to Tax Forms, ETA continues to work proactively to finalize forms impacting MeF so tax year changes can be implemented in a timely manner. For example, ETA is establishing a Forms Change Committee and has a draft charter that is being reviewed. The Charter outlines the criteria and procedures for gaining management control over the annual forms change process. ETA is coordinating with each of the Operating Divisions' Business Systems Planning Offices, and expects to convene the kick-off meeting in September 2005.

However, despite ETA's work to meet RIS deadlines for tax year changes, there may be times when changes must be made after the deadlines - when legislative changes are identified or when production problems surface,

IMPLEMENTATION DATE: September 30, 2005

RESPONSIBLE OFFICIAL: Deputy Associate CIO Program Management

CORRECTIVE ACTION MONITORING PLAN: We enter accepted corrective actions into the Joint Audit Management Enterprise System (JAMES) and on the Item Tracking, Reporting, and Control System (ITRAC). These corrective actions are monitored on a monthly basis until completion.