

# AUDIT REPORT



CITY OF NEW YORK  
OFFICE OF THE COMPTROLLER  
BUREAU OF FINANCIAL AUDIT  
**WILLIAM C. THOMPSON, JR., COMPTROLLER**

## **Second Follow-up Audit Report on the Department of Information Technology and Telecommunications Call Accounting System**

*7F05-082*

**May 19, 2005**



THE CITY OF NEW YORK  
OFFICE OF THE COMPTROLLER  
1 CENTRE STREET  
NEW YORK, N.Y. 10007-2341

WILLIAM C. THOMPSON, JR.  
COMPTROLLER

**To the Citizens of the City of New York**

Ladies and Gentlemen:

In accordance with the responsibilities of the Comptroller contained in Chapter 5, §93, of the New York City Charter, my office has reviewed the implementation status of 12 recommendations made in a previous audit entitled, Follow-up Audit Report on the Call Accounting System of the Department of Information Technology & Telecommunications (Audit #7F02-070, issued June 27, 2002).

The results of our audit, which are presented in this report, have been discussed with Department of Information Technology and Telecommunications officials, and their comments have been considered in preparing this report.

Audits such as this provide a means of ensuring that City agencies have adequate controls in place to protect its systems from unauthorized use.

I trust that this report contains information that is of interest to you. If you have any questions concerning this report, please contact my Audit Bureau at 212-669-3747 or e-mail us at [audit@Comptroller.nyc.gov](mailto:audit@Comptroller.nyc.gov).

Very truly yours,

A handwritten signature in black ink that reads "William C. Thompson, Jr." in a cursive style.

William C. Thompson, Jr.

WCT/gr

**Report:** 7F05-082  
**Filed:** May 19, 2005

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*The City of New York  
Office of the Comptroller  
Bureau of Financial Audit  
EDP Audit Division*

**Second Follow-up Audit Report  
On the Department of  
Information Technology and Telecommunications  
Call Accounting System**

**7F05-082**

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**AUDIT REPORT IN BRIEF**

This is a second follow-up audit to determine whether the Department of Information Technology and Telecommunications (DoITT) implemented the 12 recommendations made in a previous follow-up audit of its Call Accounting System. In this report, we discuss the 12 recommendations from the prior audit in detail, as well as the implementation status of each recommendation.

In Fiscal Year 2002, our office conducted a follow-up audit to determine whether DoITT implemented the 30 recommendations contained in our previous audit of the Call Accounting System issued June 28, 1996. Since the 2002 follow-up audit determined that DoITT did not implement five, and partially implemented five of the most significant 1996 audit recommendations, and the report made two new recommendations, we determined that this second follow-up audit was necessary. (Of the 30 1996 recommendations, 15 were implemented, five were not implemented, five were partially implemented, and five were no longer applicable.)

**Audit Findings and Conclusions**

Of the 12 recommendations made in the previous follow-up report, DoITT implemented eight, partially implemented one, did not implement one, and two are no longer applicable. DoITT did not implement the recommendation to develop reconciliation procedures to ensure that call information matches vendor billing. The partially-implemented recommendation dealt with the creation of parameters for reconciling vendor and system data. The two recommendations that are no longer applicable pertain to requesting and periodically changing source code for its previous application for backup purposes.

To address these issues we recommend that DoITT:

- Ensure that the parameters for reconciling system and vendor data, as well as all other RFP deliverables, are included in the final product provided.
- Establish procedures to reconcile Telecommunications Management System (TMS) data and the vendors' data.

## **INTRODUCTION**

### **Background**

DoITT manages the Call Accounting System, which processes telephone-call information concerning local and long distance calls made by City agency personnel. DoITT units involved in the call-accounting process are Network Services and Telecom Admin Services.

The Network Services Unit manages the computer operations, which includes distribution of "call detail" reports that list potential reimbursements by City employees for non-business long distance calls. The Telecom Admin Services Unit is responsible for paying bills for local, long distance, fax, calling card, and cellular calls, as well as for monthly service charges, equipment repairs, equipment installations, and voice message services. Since each agency is responsible for collecting reimbursements from its own employees for personal long distance calls they make using agency equipment, the Telecom Admin Services Unit collects long distance and cellular call reimbursement from DoITT personnel only.

On June 27, 2002, the Comptroller's Office issued a follow-up report (*Follow-up Audit Report on the Call Accounting System of the Department of Information Technology & Telecommunications* Audit #7F02-070) to an audit it issued on June 28, 1996 (*Audit Report on the Department of Information Technology & Telecommunications' Call Accounting System* Audit #7A96-082). The 2002 audit disclosed that DoITT partially implemented five and did not implement another five of the most significant 1996 audit recommendations (of the 30 recommendations, 15 were implemented, five were partially implemented, five were not implemented, and five were no longer applicable). In addition, the 2002 report made two new recommendations.

### **Objectives**

The objective of this audit was to determine whether DoITT implemented the 12 recommendations made in an earlier report, *Follow-up Audit Report on the Call Accounting System of the Department of Information Technology & Telecommunications* (Audit #7F02-070, issued June 27, 2002).

## **Scope and Methodology**

The time period covered in this report was October through December 2004. To determine the implementation status of the prior recommendations, we:

- interviewed DoITT personnel;
- reviewed prior audit reports;
- toured DoITT's data center;
- reviewed and analyzed DoITT's long-distance access policies and procedures;
- reviewed and analyzed DoITT's disaster-recovery, contingency-planning, and change-control documents;
- reviewed and analyzed the Request for Proposal for Citywide Voice and Data Services, dated March 24, 2004, and
- tested DoITT's compliance with §9.2 (System Backup and Recovery), §9.3 (Application Software and System Software Change Control) and §10.0 (Business Continuation [Disaster Recovery] Plans) of Comptroller's Internal Control and Accountability Directive 18, *Guidelines for the Management, Protection and Control of Agency Information and Information Processing Systems* (Directive 18).

For the audit's criteria we used: Directive 18, issued June 29, 1998; the United States General Accounting Office *Federal Information Systems Control Audit Manual*, issued January 1999; and the Federal Information Processing Standards (FIPS).

This audit was conducted in accordance with generally accepted government auditing standards (GAGAS) and included tests of the records and other auditing procedures considered necessary. This audit was performed in accordance with the audit responsibilities of the City Comptroller as set forth in Chapter 5, § 93, of the New York City Charter.

## **Discussion of Audit Results**

The matters covered in this report were discussed with DoITT officials during and at the conclusion of this audit. A preliminary draft report was sent to DoITT officials and was discussed at an exit conference held on March 30, 2005. On April 5, 2005, we submitted a draft report to DoITT officials with a request for comments. We received a written response from DoITT officials on April 19, 2005, stating that they agree with the audit findings and are taking steps to implement the report's recommendations.

The full text of the DoITT response is included as an addendum to this final report.

## RESULTS OF FOLLOW-UP AUDIT

**Previous Finding:** “TSL has not developed parameters for reconciling system and vendor data.”

***Previous Recommendation #1:*** “DoITT should create parameters for reconciling vendor and system data.”

***Previous DoITT Response:*** “DoITT agrees with this recommendation, however there may be significant funding and resource requirements that need to be assessed.”

**Current Status:** PARTIALLY IMPLEMENTED

DoITT issued an RFP for Citywide Voice and Data Services in March 2004. The RFP has a requirement that the selected contractor provide the City with the management capability to reconcile and integrate the City’s voice and data services billing, order processing, inventory management, and trouble ticketing into one cohesive system using monthly billing reports that indicate specific parameters such as call usage, call cost, local call details, and call duration. The RFP responses are being evaluated, and DoITT anticipates that a contract will be in place by the end of calendar year 2005. Accordingly, we consider Recommendation #1 partially implemented.

### **Recommendation**

1. DoITT should ensure that the parameters for reconciling system and vendor data, as well as all other RFP deliverables are included in the final product provided.

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**Previous Finding:** “DoITT . . . has not developed reconciliation procedures to ensure that call information . . . matches vendor billing.”

***Previous Recommendation #2:*** “DoITT should establish procedures to reconcile TMS data and the vendors’ data.”

***Previous DoITT Response:*** “DoITT agrees with this recommendation, however there may be significant funding and resource requirements that need to be assessed.”

**Current Status:** NOT IMPLEMENTED

DoITT indicated that the RFP for Citywide Voice and Data Services should provide the necessary services and tools to assist in reconciling system data to billing data. However, the RFP does not ask that the vendor develop such procedures. Accordingly, we consider Recommendation #2 not implemented

**Recommendation**

2. DoITT should establish procedures to reconcile TMS data and the vendors' data.

*DoITT Response:* "We are currently evaluating a number of Vendor Management applications that will allow us to effectively and efficiently reconcile system data to billing data. We anticipate awarding a contract this spring and begin implementing a new system this summer. Once fully implemented, this system will allow us to be fully compliant with all recommendations."

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**Previous Finding:** "DoITT . . . does not periodically change authorization codes, and long distance calls can . . . be made without authorization codes."

*Previous Recommendation #3:* "DoITT should develop appropriate authorization code policies/procedures for TMS; these should include changing codes periodically."

*Previous DoITT Response:* "DoITT agrees in part to this recommendation. We do have an Authorization Code policy in place, however due to limited staffing DoITT is not currently able to manage such an ongoing project. DoITT also notes that we have a Fraud Detection System within the TMS that alerts us when codes are being abused and these codes are changed immediately."

**Current Status:** NOT APPLICABLE

DoITT's *Long Distance Access Codes Policy and Procedure*, dated October 2004 discusses the general policy in place for using long distance access codes, including procedures for allocating and controlling these codes. Codes need only be changed in circumstances where fraud is detected, which we believe is sufficient. Therefore, we consider Recommendation #3 not applicable.

\*\*\*\*\*

*Previous Recommendation #4:* "DoITT should ensure that calls cannot be made without an authorization code."

*Previous DoITT Response:* "DoITT agrees in part with this recommendation. While there are some lines that can make Long Distance Calls without the use of an Authorization Code, these lines are given a higher class of service and are always a special request from an Agency's Commissioner Level."

**Current Status:** IMPLEMENTED



With the exception of certain phone lines assigned to senior management, access codes must be used to make long distance calls from the agency. Therefore, we consider Recommendation #4 implemented.

\*\*\*\*\*

**Previous Finding:** “The TMS database does not contain the most current tariff rates for the City’s long distance vendor.”

***Previous Recommendation #5:*** “DoITT should ensure that tariff changes are entered promptly into TMS so that TMS charges are consistent with charges made by the carriers. This will facilitate reconciliation and billing.”

***Previous DoITT Response:*** “DoITT agrees with this recommendation, and currently has the TMS and Financial Services Unit implementing a procedure that will address this recommendation.”

**Current Status:** IMPLEMENTED

Whenever DoITT finds that tariff rates have changed, it notifies the MSS Group—the vendor responsible for updating tariff information in TMS—to revise the tariff rates on the system. These changes are confirmed by letter from MSS to the Call Accounting Unit, and we verified that the tariffs are changed as required. Therefore, we consider Recommendation #5 implemented

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**Previous Finding:** “DoITT does not reconcile call detail reports to the vendor detail reports.”

***Previous Recommendation #6:*** “DoITT should ensure that all data and call records for all users are reviewed for accuracy.

***Previous DoITT Response:*** “DoITT is not able to implement this recommendation. Due to limited staffing and the massive amount of data, each Agency is responsible for validating data/user call record information.”

**Current Status:** IMPLEMENTED

DoITT reconciles its monthly records to ensure accuracy. Monthly long distance reports are sent to designated agency telecom liaisons. Reports are reviewed by agency management and then distributed to staff. All updates, changes, and questions are referred back to the Director of Telecom Support. Therefore, we consider Recommendation #6 implemented.

\*\*\*\*\*

**Previous Finding:** A consultant identified weaknesses in password protection, authentication, anti-virus protection, and network penetration, which have not been addressed.

***Previous Recommendation #7:*** “DoITT should follow-up with TSL and verify that all findings identified by the external consultant have been addressed.”

***Previous DoITT Response:*** “DoITT agrees with this recommendation and has currently requested from TSL/PRG [TSL is a subsidiary of TSL/Profit Recovery Group] a copy of the findings. DoITT will then review it and ensure that TSL/PRG has complied.”

**Current Status:** IMPLEMENTED

DoITT has established safeguards that address weaknesses in password protection, authentication, anti-virus protection, and network penetration. Various exception reports are produced to identify long distance calls made by authorized users from alternate telephones. Password protection has been corrected as discussed earlier in this report. In addition, anti-virus protection and network penetration concerns have been addressed by changing the computer platform—the TSL System ran on a client-server LAN platform while the MSS System processes on a SUN computer system, which has more security mechanisms in place than TSL. Accordingly, we consider Recommendation #7 implemented.

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**Previous Finding:** “DoITT does not . . . review and appraise activities within the organization.”

***Previous Recommendation #8:*** “DoITT should conduct an independent assessment of DoITT’s TMS unit to improve the reimbursement and reconciliation procedures.”

***Previous DoITT Response:*** “DoITT agrees with this recommendation. DoITT will identify a process for verifying the reconciliation and reimbursement of DoITT’s call usage.”

***Previous Recommendation #9:*** “DoITT should ensure that Financial Services and the TMS unit are aware of all TMS updates, upgrades, and modifications to the system.”

***Previous DoITT Response:*** “DoITT agrees with this recommendation and currently has the TMS and Financial Services Unit implementing a procedure that will address this issue.”

**Current Status:** IMPLEMENTED

DoITT hired a consultant to evaluate the improvements needed and incorporated these needs into an RFP for Citywide Voice and Data Services, issued in March 2004. In addition, DoITT implemented procedural changes as well as reporting structure changes to ensure that

units within the agency work together on all issues pertaining to the system. Therefore, we consider Recommendations #8 and #9 implemented.

\*\*\*\*\*

**Previous Finding:** TSL's disaster recovery plan for the system "does not contain an up-to-date inventory of hardware and software. In addition, DoITT should incorporate TMS in its own disaster recovery plan."

***Previous Recommendation #10:*** "DoITT should ensure that all elements required by Comptroller's Directive 18 are addressed in TSL's and DoITT's disaster recovery plans."

***Previous DoITT Response:*** "DoITT will again review Directive 18 for compliance."

**Current Status:** IMPLEMENTED

DoITT's disaster recovery plans comply with all Directive 18 requirements and the Call accounting system has been included in this plan. In addition, DoITT provided a current list of Call Accounting System hardware and software, which we verified as being at the DoITT data center. Therefore, we consider Recommendation #10 implemented.

\*\*\*\*\*

**Previous Finding:** "DoITT . . . has not established formal procedures for program changes."

***Previous Recommendation #11:*** "DoITT should establish formal procedures for program changes."

***Previous DoITT Response:*** "DoITT agrees with this recommendation and currently has the TMS Unit implementing a procedure that will address this issue."

**Current Status:** IMPLEMENTED

DoITT issued a formal program change policy on August 30, 2004. The policy discusses: how to enter changes and how to determine the risk and impact of the change, the types of change allowed and the review process to be followed before the change is approved, scheduling and process for implementing changes, and a post-implementation review. Therefore, we consider Recommendation #11 implemented.

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**Previous Finding:** "DoITT does not have a copy of TMS' source code."

***Previous Recommendation #12:*** "DoITT should request a copy of the source code for the Licensed Software (TMS) to ensure that DoITT can resume telecommunications operations in the event that TSL were to cease operation."

***Previous DoITT Response:*** “DoITT agrees with this recommendation and has requested a copy of the source code from TSL/PRG.”

**Current Status:** NOT APPLICABLE

DoITT no longer uses the licensed TML software. DoITT replaced the TML software with iWise—an off-the-shelf application. Since the iWise software is proprietary and legally cannot be reprogrammed by DoITT, obtaining the source code is not feasible. Therefore, we consider Recommendation #12 not applicable.



DEPARTMENT OF INFORMATION TECHNOLOGY AND  
TELECOMMUNICATIONS

75 Park Place, 9<sup>th</sup> Floor  
New York, NY 10007  
(212) 788-6600  
Fax: (212) 788-8130

**GINO P. MENCHINI**  
*Commissioner*  
*Chief Information Officer*

April 19, 2005

Greg Brooks  
Office of the Comptroller  
1 Centre-Street  
New York, NY 10007

Re: Second Follow-up Audit Report on the  
Department of Information Technology and Telecommunications  
Call Accounting System  
7F05-082

Dear Mr. Brooks:

The Department of Information Technology and Telecommunications' (DoITT) agrees with the findings in the Preliminary Draft Report. However, we would like to further elaborate on how we will implement the one recommendation which we have not yet implemented.

We are currently evaluating a number of Vendor Management applications that will allow us to effectively and efficiently reconcile system data to billing data. We anticipate awarding a contract this spring and begin implementing a new system this summer. Once fully implemented, this system will allow us to be fully compliant with all recommendations.

If you have any questions, please contact me at (212) 788-6616.

Sincerely,

Margery Brown  
Deputy Commissioner  
Finance and Administration

