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INTEROFFICE MEMORANDUM

MEMORANDUM INTERIEUR

OFFICE OF INTERNAL OVERSIGHT SERVICES - BUREAU DES SERVICES DE CONTRÔLE INTERNE
INTERNAL AUDIT DIVISION - DIVISION DE L'AUDIT INTERNE

TO: Ms. Catherine Pollard, Assistant Secretary-General
A Office of Human Resources Management
Department of Management

DATE: 25 August 2011

Mr. Choi Soon-hong, Assistant Secretary-General
and Chief Information Technology Officer
Office of Information and Communications Technology

Mr. Jun Yamazaki, Assistant Secretary-General and Controller
Office of Programme Planning, Budget and Accounts

REFERENCE: IAD: 11-00538

FROM: Fatoumata Ndiaye, Director
DE: Internal Audit Division, OIOS



SUBJECT: **Assignment No. AT2010/512/02 – Audit of payroll processing at United Nations Secretariat
OBJET: in New York Headquarters**

Overall results relating to the accuracy and timeliness of payroll processing in New York Headquarters were partially satisfactory

1. I am pleased to present the report on the above-mentioned audit.
2. Based on your comments, we are pleased to inform you that we will close recommendation 1 in the OIOS recommendations database as indicated in Annex 1. In order for us to close the remaining recommendations, we request that you provide the additional information as discussed in the text of the report and summarized in Annex 1.
3. Please note that under General Assembly resolution 59/272, a Member State may request that the final audit report be made available. Also, note that pursuant to General Assembly resolution 64/263, OIOS will include the complete management response as an annex to the present report.
4. Please note that OIOS will report on the progress made to implement its recommendations, in its annual report to the General Assembly and semi-annual report to the Secretary-General.
5. We wish to express our appreciation to the Management and staff of OHRM, OICT and OPPBA for the assistance and cooperation extended to the auditors during this assignment.

cc: Ms. Angela Kane, Under-Secretary-General, Department of Management
Mr. Zachary Ikiara, Chief, Policy and Oversight Coordination Unit, Department of Management
Ms. Susanne Freuh, Executive Secretary, Joint Inspection Unit
Mr. Swatantra Goolsarran, Executive Secretary, UN Board of Auditors

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INTERNAL AUDIT DIVISION · DIVISION DE L'AUDIT INTERNE

Mr. Moses Bamuwanye, Executive Secretary, IAAC
Mr. Byung-Kun Min, Special Assistant to the USG-OIOS
Ms. Amy Wong, Programme Officer, Internal Audit Division, OIOS

AUDIT REPORT

Audit of payroll processing at United Nations Secretariat in New York Headquarters

BACKGROUND

Payroll processing at the United Nations Secretariat in New York Headquarters (Secretariat) is managed by the Payroll Operations Unit within the Accounts Division of the Office of Programme Planning, Budget and Accounts (OPPBA). This Unit is responsible for payment of salaries and related allowances to staff members stationed in New York, international staff in peacekeeping missions and the experts stationed in field offices. Payroll processing is supported by the Integrated Management Information System (IMIS) and its web integrated reporting application (WIRe), and management information system reporting facility (IRFA).

OBJECTIVE AND SCOPE

This audit was conducted to assess the adequacy and effectiveness of the Secretariat's risk management, control and governance processes in providing reasonable assurance regarding the accuracy and timeliness of payroll processing in New York Headquarters. The key controls tested for the audit included those related to: (a) regulatory framework; and (b) ICT support systems. The audit covered payroll processing activities related to two key controls for the period 2009-2010.

AUDIT RESULTS

In OIOS' opinion, the Secretariat's risk management, control and governance processes examined were **partially satisfactory** in providing reasonable assurance regarding the accuracy and timeliness of payroll processing.

While procedures have been established for preparing, verifying and processing data and maintaining the supporting application (IMIS), strengthening opportunities exist to improve timeliness of updating and reconciliation of data. Several procedures have been designed and implemented for preparing the data input to the system. However, information about staff movements and personnel actions were not timely processed and reflected in the system. In addition, help desk procedures were not updated and documented. Payroll calculations were correctly processed but the reconciliations of the monthly reports required improvement. The controls pertaining to the application development and database management were adequate.

Controls over the preparation and verification of data input

The human resources module of IMIS had instances where the status of staff members was not correct. There were 250 cases where personnel actions had not been updated during the period January 2001 – January 2010. Furthermore, post incumbency reports did not reflect the updated staffing situation. One of the main causes of this limitation was the delay in transferring data related to the staff members' transfer between duty stations. These delays were attributed to several manual verifications of the data that usually are performed in the duty station receiving the new staff member. Until these verifications are processed (in IMIS) at UNHQ, changes do not appear in the post occupied by the staff member. As a result, staff members were not paid through the payroll system and received advances until the updates were completed in IMIS. Other delays affecting the reliability and completeness of data were represented by those instances when personnel actions were not processed on time (i.e., because of contract

extensions). OIOS identified about 85 transfer cases that still remained to be processed at the time of the audit, and no information was available on the ageing of these cases.

OHRM advised that it is already supporting clean-up by providing exception reports to Executive Offices. The exception reports highlight inconsistencies/errors in IMIS that should be corrected by the Executive Offices. The actual clean-up cannot be performed by OHRM as it does not own the data. The IMIS Human Resources Support Team of OHRM, which processes the IMIS scripts of staff members transferring in or out of UNHQ, resolves script transfer cases within two months on average. Script transfer cases can be resolved quicker (within a day or within a week) if the requesting department processes all actions in a timely manner; the staff member's data in IMIS is "clean" (i.e. ,no overlapping post incumbencies, no corrupted data, etc.);the transfer involves a separated staff member or a staff member on normal movement; and the effective date of transfer is known. All cases received are documented and stored in OHRM's customer relationship management (CRM) application (MyHROnline). Starting in July 2011, the lead of the IMIS HR Support Team will review all script transfer cases that have been unresolved for more than two months (previously it was three months) and send an update to the Heads of the Executive Offices on the pending cases.

OHRM help desk procedures

The case reports generated from the help desk database indicated only the total number of incidents but not their nature. Desktop procedures have not been updated since 2002. The training module was also outdated and contained many links that did not work. Pending the replacement of IMIS with the new ERP/UMOJA, no training on IMIS has been provided in the last five years to new human resources staff. Human resources managers indicated that a significant number of retirements in the recent past have decreased the institutional knowledge on the use of IMIS in the organization. This condition is considered to be the main cause of errors made while recording personnel actions, having an effect on the payroll calculations, and the significant amount of time and effort invested in locating and correcting them.

(1) OHRM should update its help desk procedures and, in coordination with OICT, ensure that all personnel assigned to payroll-related activities receive adequate training.

OHRM accepted recommendation 1 and stated that the IT Learning Programme (ITLP) has been offering IMIS courses to the staff of the United Nations Secretariat since 2000. IMIS overview is a half-day class offered as an introduction to staff who require broad knowledge of the capabilities of the system and the data that can be retrieved. The overview course gives staff background on how the system works and how it supports the administrative processes of the United Nations. It also shows staff how to navigate and use the system. Staff are also introduced to the support resources available.

The implementation of desk procedures and on-line training is planned for 31 December 2011. A project sponsored by five Executive Offices (DM, DGACM, DPA, OLA, OCHA) is currently underway to help strengthen the IMIS HR Support Team. The project focuses on three areas, HR user training, strengthening IMIS HR desk procedures, and focal point specialized training and workflow. However, because of the limited resources working on the project (one professional and two general service staff) and the short time allocated to complete it (six months), the project is focused on the following: (i) Remove all obsolete desk procedures; (ii) Update desk procedures that are affected by the removal of the obsolete ones; (iii) Conduct training on IMIS user sessions where customers make the most mistakes (i.e. Post Incumbency; Appointment; Profile; Entitlements). Additional updates to desk procedures and further training will not be feasible unless the project is extended or more resources are made available.

However, the IMIS HR Support team will create detailed standard operating procedures and guidelines on payroll-related personnel actions that will be shared with Payroll/OPPBA.

Recommendation 1 remains open pending receipt of the results of the implementation of desk procedures and on-line training planned for completion by 31 December 2011, as well as terms of reference of the on-going project for strengthening the IMIS HR support team.

Reconciliations of payroll reports

It was not possible to match the number of staff members in the organization's post incumbency report with the number of staff paid included in the earnings and deductions report. While the earnings and deductions report provided comprehensive information about all the staff members' monthly pay slips, it did not include the total amount of each payroll element such as gross salary, post adjustment, etc. Many of the reports generated with the information systems were no longer supported and were not utilized as a reference during payroll processing. However, users in the Executive Offices could still use them making incorrect assumptions on the basis of this information.

(2) OPPBA should ensure that variances between the payroll reports generated with WIRE (i.e. earnings and deductions report) are identified, explained and corrected in a timely manner and on a monthly basis; (ii) reports provide both consolidated and detailed information (i.e., processing elements, errors, payments, etc.); and (iii) the reports no longer supported are removed from the production database

OPPBA accepted recommendation 2 and stated that variances between IRFA reports and WIRE reports have been reported to OICT for analysis. Once the source of the variance is identified, the timeline for correction will depend on the complexity of the reports modifications required and on the availability of OICT resources. At this stage, OPPBA is not yet in a position to estimate an implementation date. Since OPPBA is dependent upon OICT to implement this recommendation, OICT should share the responsibility of implementing this recommendation.

Recommendation 2 remains open pending completion of the coordinated actions to be taken by OPPBA and OICT for correcting the reports related to payroll processing.

ACKNOWLEDGEMENT

OIOS wishes to express its appreciation to the Management and staff of OHRM, OPPBA and OICT for the assistance and cooperation extended to the auditors during this assignment.

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I. INTRODUCTION

1. The Office of Internal Oversight Services (OIOS) conducted an audit of payroll processing at the United Nations Secretariat in New York Headquarters (Secretariat).

II. AUDIT OBJECTIVE

2. This audit was conducted to assess the adequacy and effectiveness of the Secretariat's risk management, control and governance processes in providing reasonable assurance regarding the accuracy and timeliness of payroll processing at the New York Headquarters. The key controls tested for the audit included those related to: (a) regulatory framework; and (b) ICT support systems. For the purpose of this audit, OIOS defined these key controls as follows:

(a) Regulatory framework - those controls that are designed to provide reasonable assurance that procedures exist to guide the operations of the payroll process; and

(b) ICT support systems - those controls that are designed to provide reasonable assurance that the ICT systems supporting payroll processing address the function's needs and are adequately maintained and supported.

III. AUDIT SCOPE AND METHODOLOGY

3. OIOS conducted this audit from December 2010 to March 2011 in accordance with the International Standards for the Professional Practice of Internal Auditing promulgated by The Institute of Internal Auditors.

4. To gain a general understanding of the operational procedures and ICT systems supporting payroll processing, OIOS interviewed staff members in the Payroll Operations Unit/OPPBA, OHRM and OICT. The audit team conducted an activity-level risk assessment to identify and assess specific risk exposures, and to confirm the relevance of the selected key controls in mitigating the associated risks.

5. OIOS considered whether the above key controls were designed in such a way as to ensure the correct processing of payroll. OIOS performed tests on data extracted from the Integrated Management Information System (IMIS), the web integrated reporting application (WIRe) and the integrated management information system reporting facility (IRFA).

6. Through interviews, analytical reviews and tests of controls, OIOS assessed the existence and adequacy of written policies and procedures, and whether they were implemented consistently.

IV. OVERALL ASSESSMENT

7. In OIOS' opinion, the Secretariat's risk management, control and governance processes examined were **partially satisfactory** to provide reasonable assurance regarding the adequacy and effectiveness of payroll processing. Procedures have been established for the preparation and verification of data. The calculation of gross salary and dependency allowances was correctly processed. Controls related to IMIS application development, database management, logical access and backup were adequate.

V. AUDIT RESULTS

A. Regulatory framework

8. Several procedures have been designed and implemented for preparing the data input to the system. However, information about staff movements and personnel actions were not timely processed and reflected in the system. In addition, help desk procedures were not updated and documented and staff had not received adequate training for the use of IMIS.

Controls over the preparation and verification of data input

9. Data input to the payroll is entered in IMIS through personnel actions processed by the Executive Office of each department. Personnel actions are reviewed and approved by OHRM against the entitlements established in regulations and rules of the United Nations Secretariat.

10. Administrative procedures have been established between OPPBA and OHRM for processing data pertaining to the different types of entitlements such as salary advances, education grants, rental subsidies, etc.

11. Retroactive payments can only be claimed within twelve months, but an overpayment can be recovered within two years. Adequate approving procedures have been established for approving payments.

12. Promotions are processed by the Executive Offices and reviewed by OHRM, where a record is maintained in digital format.

13. OIOS analyzed the data recorded in the human resources module of IMIS and noted some instances where the current status of staff members was not correct. There were 250 cases where personnel actions had not been updated during the period January 2001 – January 2010. Although the number of instances was not material, OIOS discussed these cases with the Payroll Operations Unit and they have been addressed during the course of the audit.

14. Furthermore, post incumbency reports did not reflect the updated staffing situation. One of the main causes of this limitation was the delay in transferring data related to the staff members' transfer between duty stations. These delays were attributed to several manual verifications of the data that usually are performed in the duty station receiving the new staff member. Until these verifications are processed (in IMIS) at UNHQ, changes do not appear in the post occupied by the staff member. As a result, staff members were not paid through the payroll system and received advances until the updates were completed in IMIS.

15. Other delays affecting the reliability and completeness of data were represented by those instances when personnel actions were not processed on time (i.e., because of contract extensions). OIOS identified about 85 transfer cases that still remained to be processed at the time of the audit, and no information was available on the ageing of these cases. It is expected that the implementation of the new processes being re-engineered in the context of the Enterprise Resource Planning (ERP/UMOJA) initiative will resolve these issues.

16. *OHRM advised that it is already supporting clean-up by providing exception reports to Executive Offices. The exception reports highlight inconsistencies/errors in IMIS that should be corrected by the Executive Offices. The actual clean-up cannot be performed by OHRM as it does not own the data. The IMIS Human Resources Support Team of OHRM, which processes the IMIS scripts of staff members transferring in or out of UNHQ, resolves script transfer cases within two months on average. Script transfer cases can be resolved quicker (within a day or within a week) if the requesting department processes all actions in a timely manner; the staff member's data in IMIS is "clean" (i.e., no overlapping post incumbencies, no corrupted data, etc.); the transfer involves a separated staff member or a staff member on normal movement; and the effective date of transfer is known. All cases received are documented and stored in OHRM's customer relationship management (CRM) application (MyHROnline). Starting in July 2011, the lead of the IMIS HR Support Team will review all script transfer cases that have been unresolved for more than two months (previously it was three months) and send an update to the Heads of the Executive Offices on the pending cases.*

OHRM help desk procedures

17. OPPBA and OHRM have their own help desks for managing problems and incidents related to their respective area of responsibility. Technical issues are forwarded to OICT. An initiative is currently in progress for consolidating all service desks into one central function using the new customer relationship management system "iNeed".

18. For cases that require rescinds, the OHRM help desk (HRISS) coordinates with the finance help desk established in OPPBA, as necessary. All requests are logged into the customer relationship management application (MyHROnline) and assigned a ticket number. Each record is stamped with the help desk assistant's identification. The OHRM help desk (HRISS) performs a triage to determine the nature and priority of each case. The ticket is then classified and put on a queue in the MYHROnline application. OICT is notified on those cases pertaining to IMIS unavailability.

19. OHRM help desk performs a diagnostic test on received cases for solution. Once the case is resolved, the requester is informed via electronic mail and the case is logged in the MuHROnline application. Two applications are used for resolving cases: "EZ HR" for analyzing personnel actions and "IMIS diagnostic database for analyzing personnel actions.

20. OIOS reviewed case statistics reports, desk procedures and the online training module. Case reports indicated only the total number of incidents but not their nature. Desktop procedures have not been updated since 1996. The training module was also outdated and contained many links that did not work. Pending the replacement of IMIS with the new ERP/UMOJA, no training on IMIS has been provided in the last five years to new human resources staff. Human resources managers indicated that a significant number of retirements in the recent past have decreased the institutional knowledge on the use of IMIS in the organization. This condition is considered to be the main cause of errors made while recording personnel actions, having an effect on the payroll calculations, and the significant amount of time and effort invested in locating and correcting them.

Recommendation 1

(1) OHRM should update its help desk procedures and, in coordination with OICT, ensure that all personnel assigned to payroll-related activities receive adequate training.

21. *OHRM accepted recommendation 1 and stated that the IT Learning Programme (ITLP) has been offering IMIS courses to the staff of the United Nations Secretariat since 2000. IMIS overview is a half-day class offered as an introduction to staff who require broad knowledge of the capabilities of the system*

and the data that can be retrieved. The overview course gives staff background on how the system works and how it supports the administrative processes of the United Nations. It also shows staff how to navigate and use the system. Staff are also introduced to the support resources available. The implementation of desk procedures and on-line training is planned for 31 December 2011. A project sponsored by five Executive Offices (DM, DGACM, DPA, OLA, OCHA) is currently underway to help strengthen the IMIS HR Support Team. The project focuses on three areas, HR user training, strengthening IMIS HR desk procedures, and focal point specialized training and workflow. However, because of the limited resources working on the project (one professional and two general service staff) and the short time allocated to complete it (six months), the project is focused on the following: (i) Remove all obsolete desk procedures; (ii) Update desk procedures that are affected by the removal of the obsolete ones; (iii) Conduct training on IMIS user sessions where customers make the most mistakes (i.e. Post Incumbency; Appointment; Profile; Entitlements). Additional updates to desk procedures and further training will not be feasible unless the project is extended or more resources are made available. However, the IMIS HR Support team will create detailed standard operating procedures and guidelines on payroll-related personnel actions that will be shared with Payroll/OPPBA.

22. Recommendation 1 remains open pending receipt of the results of the implementation of desk procedures and on-line training planned for completion by 31 December 2011, as well as terms of reference of the on-going project for strengthening the IMIS HR support team.

B. ICT support systems

23. ICT support systems provided reasonable assurance that the calculation of gross salary and dependency allowances was correctly processed. While reconciliation mechanisms between data and reports generated from IMIS were not adequate, the controls related to IMIS application development, database management, logical access and backup were adequate.

Payroll calculations in IMIS are correctly processed

24. Payroll is processed monthly on the basis of three scheduled trials that are executed before the actual payroll is finalized. The results of the payroll trials are widely circulated among the administrative offices so that personnel actions can be processed within the established deadline.

25. OIOS reviewed a random sample of 159 staff members for testing the correctness of the amounts paid in gross salary (net of staff assessment) and dependency entitlements. The sample size was based on unique index numbers to achieve 80 percent confidence level with a deviation rate of 2 per cent. The scope of the review included – where applicable – the personnel actions supporting changes to the salary entitlement and status of staff members. The results of these tests did not show any incorrect processing of salary and dependency allowances.

Reconciliation of payroll reports

26. The number of staff members recorded in the human resources module should match/reconcile with the number of staff members paid through the payroll process. However, no reconciliation report has been designed for reconciling these totals. Furthermore, there was no clarity about which office (OHRM or OPPBA) should have been responsible for performing this reconciliation.

27. OIOS was unable to match the number of staff members in the organization's post incumbency report (about 18,000) with the number of staff paid (about 14,000) included in the earnings and

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deductions report. Upon verification with the Payroll Operations Unit, it was determined that the main reasons for this variance were:

- (i) Over 3,000 national (local) staff members working in some peacekeeping missions (i.e. United Nations Mission in Liberia or United Nations Office in Côte D'Ivoire) were included in the human resources module of IMIS but not in the HQ payroll database. The emoluments of these staff members were processed and paid in a local system at their respective field office. However, these exceptions were not indicated in the post incumbency report;
- (ii) About 1,000 staff members working for other United Nations organizations (i.e. local offices of World Intellectual Property Organization and United Nations Industrial Development Organization) that have their Headquarters in other countries) were paid through the payroll of the United Nations Secretariat, though they had no established positions in IMIS. The Payroll Operations Unit explained that these payments are automatically compensated each month with a transaction that records this cost element as receivables in the accounting records; and
- (iii) About 950 staff members that had been separated from the Organization had no post incumbency details. However, they appeared in the payroll when their final settlement was released.

28. In addition, there were retroactive personnel actions and some instances of staff members that have changed assignment during the payroll period appearing in two different posts in IMIS. In the latter case, their salary is charged in proportion to their corresponding percentage of time occupied in each post during the period.

29. These variances are known and reconciled by the Payroll Operations Unit through a specific payroll control process that identifies whether each staff member has an active status for payment. Staff members in inactive status may include cases of salary withheld due to the status of their contract, special pay instructions, special leave without pay, and net pay zero due to recoveries.

Reconciliation of payroll reports

30. OIOS tested whether the payroll costs reconciled with the reports generated through IMIS (WIRE and IRFA) and the posting of the general ledger. The tests indicated that:

- (i) The earnings and deductions report generated from WIRE provided comprehensive information about all the staff members' monthly pay slips. However this report did not include the total amount of each payroll element such as gross salary, post adjustment, etc. Therefore, it was not possible to match the payroll data with the overall earnings and deductions report. Additional payroll elements (i.e., telephone deductions) were included in the payroll data though they were excluded in the earnings and deductions report generated from WIRE. Consequently, OIOS generated additional reports for verifying a sample of payroll payments that included gross salary, dependency allowance and staff assessment. The results of this verification showed that while there were no variances for dependency allowance and staff assessment, there was a difference of \$394,000 in the gross salary element of July 2010; and
- (ii) According to the earnings and deductions report generated from WIRE for July 2010, the total payroll cost posted to the general ledger under account 6310 was \$154,511,714 (all payroll elements are grouped under one general ledger code). However, another report generated with WIRE showed that the payroll cost posted to the general ledger was \$154,632,117, which was not

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in agreement with the earnings and deduction report. Consequently, a variance of \$120,403 remained unexplained.

31. The Payroll Processing Unit stated that many of the reports available through WIRe were no longer supported and were not utilized as a reference during payroll processing. However, the Unit recognized that since these reports are readily available in the system, users in the Executive Offices could make incorrect assumptions on the basis of this information.

32. The reporting functionalities of IMIS are a critical source of information for the administration of the payroll process. Although IMIS provides the option for downloading data into external applications (i.e., Excel, PDF and Paradox), the extensive amount of records stored and generated from the system make these alternative solutions impractical. Given these limitations, the reliability of the reporting features of IMIS using WIRe is a necessary component to ensure that payroll data is reviewed and corrected on a regular basis.

Recommendations 2

(2) OPPBA should ensure that: (i) variances between the payroll reports generated from WIRe (i.e. earnings and deductions report) are identified, explained and corrected in a timely manner and on a monthly basis; (ii) reports provide both consolidated and detailed information (i.e., processing elements, errors, payments, etc.); and (iii) reports that are no longer supported are removed from the production database.

33. *OPPBA accepted recommendation 2 and stated that variances between IRFA reports and WIRe reports have been reported to OICT for analysis. Once the source of the variance is identified, the timeline for correction will depend on the complexity of the reports modifications required and on the availability of OICT resources. At this stage, OPPBA is not yet in a position to estimate an implementation date. Since OPPBA is dependent upon OICT to implement this recommendation, OICT should share the responsibility of implementing this recommendation.* Recommendation 2 remains open pending completion of the coordinated actions to be taken by OPPBA and OICT for correcting the reports related to payroll processing.

IMIS application development and database management controls are adequate

34. The IMIS development team consists of four personnel. Source code for the payroll application is developed via a design component document (DCD) provided by OPPBA. These specifications are used by the developers for writing the code. Industry standard source code development protocol is used when writing source code and all steps and logic are documented in the code as notes.

35. OIOS reviewed the draft IMIS report on system standards (developed by Price Waterhouse, Gateway Group, dated December 2010) and noted that:

(i) Access to the system is controlled via unique user names and passwords. User's session access control requires administrative rights. The administrative event table stores all access rights. Once the source code is developed, testing is processed in a separate environment. Once the code passes the test stage, further testing is performed for:

(a) System testing on servers;

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- (b) User testing in separate simulated production environment. To facilitate testing in the simulated production environment, the production database is copied every night to a testing database for using current data; and
 - (c) Quality assurance testing is performed by OPPBA (validating output).
- (ii) Adequate segregation of duties and access exist between production and development environment;
 - (iii) No change requests for the payroll application have been received over the last two years;
 - (iv) The database administrator(s) maintains the database servers. Staff members with accounts for quality assurance and development have access to the diagnostics database. Approximately 50 – 60 users have access to the diagnostics database. All users have read-only access. Users are only allowed to access the production database through the application.
 - (v) The database team is composed of nine staff members. There are four accounts with the privileges of database administrator. These accounts have specific use and are shared by four different staff members. Although adequate segregation of duties exists in the access control procedures established, there is no audit trail for recording the activities of the database administrator(s). IMIS only logs changes or modifications to application records;
 - (vi) Database administrators have full access to the contents (actual data and data structure) of the IMIS databases. This is a feature of the specific database management system in use (Sybase). However, there is no logging of the activities of the database administrators;
 - (vii) Requests for changes to the database are made via e-mail. However, records of these e-mails are kept only for 3 months. The audit log is stamped with a unique number associated with the change made and the user, and includes: table records, serial number, user ID, day processed, location and approval code; and
 - (viii) Payroll processes (database batch processes) are logged with the details of input, output and directory (if needed). Several reports are generated with information pertaining to errors/failures; exceptions; statistics and table reports.

36. In OIOS' opinion, OPPBA and OICT could improve the controls over the application and database management by: (a) Recording and monitoring the log of activities performed by IMIS systems administrators; (b) Retaining and archiving documents supporting changes to logical access and corrections to data in accordance with the approved retention schedule; and (c) Establishing logging mechanisms for recording the activities of the database administrators in the production environment.

37. OICT confirmed that database administrators do not make changes to IMIS data in production. They however perform day-to-day administrative tasks (backups, index rebuilding, temp tables' cleanups, running data fixes, etc.) on the database. A written description of these tasks exist in the form of SOP and scripts which can be provided upon request. All access to IMIS granted through an established process which involves security liaison officers and is supported by several official request forms (OICT.2, OICT3, OICT.4A, OICT.6) available on iSeek. Upon processing, these forms are archived according to the approved retention schedule. Data fixes (correction to IMIS data) also follow an established data fix notification process involving finance, HR & application owners. All the scripts used for these data fixes are also archived according to the approved retention schedule.

38. *OPPBA stated that recording and monitoring of the log activities is a responsibility of OICT. With regard to the retention and archival of documents supporting changes to logical access, OPPBA will put in place a central dedicated documentation location for such changes.*

39. OIOS takes notes of the management's response and will not follow-up on this opportunity for improvement, acceptance and implementation of which is at the discretion of management.

Logical access controls in IMIS are adequate

40. Access to each module of IMIS (i.e., HR, Finance, Payroll) is administered by the corresponding responsible office (i.e. OHRM and OPPBA). Access to payroll is routed through the security officer of the Accounts Division.

41. A documented procedure exists and is followed for granting user access to the system. Access is reviewed on a quarterly basis for ensuring that user access is consistent with the authorizations granted.

42. Each user department has two roles for administering the security of access to IMIS: a security liaison officer and an administrator. The assignment of these roles is reviewed and granted by OICT IMIS Security. A list of staff members designated as security liaison officers and administrators is maintained by OICT.

43. OICT also maintains an audit trail documenting the access granted to security liaison officers and administrators. OIOS reviewed a sample of these documents and noted that all forms were retained for only three years and that there was no formal document management system utilized for recording and managing these forms.

44. **In OIOS' opinion, OICT in coordination with the Archives and Records Management Section, could consider establishing a policy for managing and archiving records of the access granted to IMIS.**

45. *OICT ARMS are already working together on a retention schedule document for ICT records. The current draft document will be reviewed in light of this recommendation to ensure that records related to IMIS access requests are also covered.*

46. OIOS takes notes of the management's response and will not follow-up on this opportunity for improvement, acceptance and implementation of which is at the discretion of management.

Backups controls are adequate

47. The backup procedures established for IMIS were adequate. The procedures included the following:

- (i) The control server initiates the backup with storage nodes;
- (ii) Storage nodes backup locally and indexes are sent to the central repository in UNHQ;
- (iii) Failures are re-submitted during the weekend;

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(iv) Backups are stored in virtual libraries and data is transferred to physical tapes for offsite storage (Iron Mountain). Tapes that reach their life cycle are demagnetized and shredded. Database applications are synchronized to the disaster recovery site; and

(v) Both full and incremental backups are conducted on the basis of periodic schedules and retention policies are followed. Incremental backups are run every night and full backups are conducted every weekend.

48. OIOS reviewed the backup retention policy dated 1 January 2009 and confirmed that formal restore procedures existed. In addition, OICT performs random weekly restores. Backups are in binary format and backups are programmed to restore only requested files; logs are kept with the details of “who, when and time” data.

49. User department can request restores of data through their designated focal point. These requests are reviewed and approved by OICT. Restores requested for investigative purposes are classified to ensure confidentiality.

50. A full shutdown test of IMIS had been conducted successfully. A disaster recovery plan and site is in place and fully functional with documented procedures. The recovery time objective (RTO) is defined on the basis of the time of notification of data loss. The recovery point objective (RPO) is determined on the basis of the last daily backup and can vary from minutes to up 24 hours.

AUDIT RESULTS

ANNEX I
SUMMARY OF IMPORTANT RECOMMENDATIONS
AT2010/512/01 Audit of payroll processing at UNHQ

Recom. no.	Recommendation	Risk category	Risk rating	C/O ¹	Actions needed to close recommendation	Implementation date ²
1	OHRM should update its help desk procedures and, in coordination with OICT, ensure that all personnel assigned to payroll-related activities received adequate training.	Operational	Important (Medium)	O	Complete the implementation of desk procedures and on-line training planned for 31 December 2011, and issue the terms of reference of the on-going project for strengthening the IMIS HR support team.	Not provided
2	OPPBA should ensure that: (i) variances between the payroll reports generated with WIRE (i.e. earnings and deductions report) are identified, explained and corrected in a timely manner and on a monthly basis; (ii) reports provide both consolidated and detailed information (i.e., processing elements, errors, payments, etc.); and (iii) reports that are no longer supported should be removed from the production database..	Operational	Important (Medium)	O	Provide copy of the corrected reports in WiRE and IRFA, and confirmation of the decommission of those reports not longer supported.	Not provided