



INTERNAL AUDIT DIVISION

REPORT 2015/149

Audit of the information and communications technology operations in the Investment Management Division of the United Nations Joint Staff Pension Fund

Overall results relating to the effective and efficient management of information and communications technology operations were initially assessed as partially satisfactory. Implementation of eight important recommendations remains in progress.

FINAL OVERALL RATING: PARTIALLY SATISFACTORY

30 November 2015
Assignment No. AT2015/801/01

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AUDIT REPORT

Audit of information and communications technology operations in the Investment Management Division of the United Nations Joint Staff Pension Fund

I. BACKGROUND

1. The Office of Internal Oversight Services (OIOS) conducted an audit of information and communications technology (ICT) operations in the Investment Management Division (IMD) of the United Nations Joint Staff Pension Fund (UNJSPF).

2. In accordance with its mandate, OIOS provides assurance and advice on the adequacy and effectiveness of the United Nations internal control system, the primary objectives of which are to ensure (a) efficient and effective operations; (b) accurate financial and operational reporting; (c) safeguarding of assets; and (d) compliance with mandates, regulations and rules.

3. IMD, which is responsible for investment of the assets of the Fund, was composed of five organizational entities that report to the Representative of the Secretary-General (RSG) for the investments of the Fund. These were: Office of the RSG/Director; Risk and Compliance Section; Information Systems Section (ISS); Operations Section; and Investment Section.

4. ISS was responsible for: (i) implementing strategic business applications and ICT infrastructure supporting front to back investment operation process; and (ii) providing application level support for business applications and some infrastructure services such as management of IMD mobile devices, desktop services, database management, ICT security and incidents resolution. IMD allocated \$19.6 million for the ISS budget in the 2014-2015 biennium of which \$3.9 million was for staffing nine posts (1 P-5, 4 P-4, 3 P-3 and 1 General Service).

5. IMD received support from the Information Management Systems Service (IMSS) of the Secretariat of UNJSPF for help-desk services (i.e., ticketing of incidents and escalation) and network management.

6. IMD had outsourced some of its ICT services to the United Nations International Computing Centre (UNICC), including:

- (i) Help-desk support (i.e., resolution of incidents and user assistance);
- (ii) Hosting of servers (physical and virtual) in the UNICC data centre and in the Dag Hammarskjöld Plaza data centre;
- (iii) Administration of the operating system for physical and virtual servers;
- (iv) Management of storage services, including backup and restoration;
- (v) Management of existing e-mail and messaging infrastructure;
- (vi) Management of active directory;
- (vii) Hosting of the disaster recovery site; and
- (viii) Implementation of additional ICT services related to e-mail, messaging, and desktop encryption.

7. IMD had established contracts with other external vendors for second and third tier support of business applications and their underlying infrastructure. IMD had adopted the ICT project management methodology “Projects in Controlled Environments”, version two (PRINCE II).

8. Comments provided by IMD are incorporated in italics.

II. OBJECTIVE AND SCOPE

9. The audit was conducted to assess the adequacy and effectiveness of IMD governance, risk management and control processes in providing reasonable assurance regarding the **effective and efficient management of ICT operations in IMD**.

10. This audit was included in the OIOS work plan for 2015 in view of the high risks associated with ICT operations in IMD.

11. The key controls tested for the audit were: (a) strategic planning; (b) regulatory framework; and (c) performance monitoring mechanisms. For the purpose of this audit, OIOS defined these key controls as follows:

(a) **Strategic planning:** controls that provide reasonable assurance that IMD has adequate planning processes to manage ICT services in accordance with its business requirements and strategies;

(b) **Regulatory framework:** controls that provide reasonable assurance that IMD policies and procedures: (i) exist to guide effective management of ICT operations; (ii) are consistently implemented; and (iii) ensure the reliability and integrity of financial and operational information; and

(c) **Performance monitoring mechanisms:** controls that provide reasonable assurance that IMD performance metrics are: (i) established and appropriate to measure the performance of ICT services; (ii) properly reported; and (iii) used to manage ICT operations effectively.

12. The key controls were assessed for the control objectives shown in Table 1.

13. OIOS conducted the audit from June to August 2015. The audit covered the period from June 2012 to June 2015.

14. OIOS 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 associated risks. Through interviews, analytical reviews and tests of controls, OIOS assessed the existence and adequacy of internal controls and conducted necessary tests to determine their effectiveness.

III. AUDIT RESULTS

15. The IMD governance, risk management and control processes examined were initially assessed as **partially satisfactory**¹ in providing reasonable assurance regarding the **effective and efficient management of ICT operations in IMD**.

¹ A rating of “**partially satisfactory**” means that important (but not critical or pervasive) deficiencies exist in

16. OIOS made eight audit recommendations to address issues identified in the audit. Strategic planning was assessed as partially satisfactory because there was need to: (i) update the IMD ICT strategy and work plans; (ii) clarify roles and responsibilities for ICT project and service management; and (iii) document and implement a service planning procedure for new and changing services. Regulatory framework was assessed as partially satisfactory because IMD needed to: (i) adequately test the service transition process; (ii) clearly define ICT services in service delivery agreements; and (iii) assess dependencies between ICT service changes, applications and systems. Performance monitoring mechanisms were assessed as partially satisfactory due to the need for IMD to define and implement periodic service reviews.

17. The initial overall rating was based on the assessment of key controls presented in Table 1 below. The final overall rating is **partially satisfactory** as implementation of eight important recommendations remains in progress.

Table 1: Assessment of key controls

Business objective	Key controls	Control objectives			
		Efficient and effective operations	Accurate financial and operational reporting	Safeguarding of assets	Compliance with policies, mandates, regulations and rules
Effective and efficient management of ICT operations in IMD	(a) Strategic planning	Partially satisfactory	Partially satisfactory	Partially satisfactory	Partially satisfactory
	(b) Regulatory framework	Partially satisfactory	Partially satisfactory	Partially satisfactory	Partially satisfactory
	(c) Performance monitoring mechanisms	Partially satisfactory	Partially satisfactory	Partially satisfactory	Partially satisfactory
FINAL OVERALL RATING: PARTIALLY SATISFACTORY					

A. Strategic planning

Need to update ICT strategy and work plans

18. The Secretary-General's bulletin on Information and Communication Technology Boards (ST/SGB/2003/17) requires the development of ICT strategies and plans to ensure the alignment of ICT projects and initiatives with the Organization's strategies and requirements.

19. IMD documented its high level ICT strategy in the UNJSPF strategic framework for the period 2014-2015. This document described the ICT infrastructure consolidation initiative with the Fund's Secretariat and the implementation of the Charles River trade order management system. However, in 2014, the roadmap for ICT infrastructure consolidation had been re-defined by IMD and the Fund's Secretariat with a new scope and outsourcing of some ICT infrastructure services to UNICC.

20. IMD also decided to replace the Charles River system with a new application (Bloomberg AIM) and initiated a new project for this purpose in 2014. These major strategic decisions required a revision of

governance, risk management or control processes, such that reasonable assurance may be at risk regarding the achievement of control and/or business objectives under review.

the ICT strategic plan and its implementation. IMD did not document a long-term ICT strategy and an ICT work plan for the execution of the changing strategy. As a result, the work plan of ISS was determined by daily needs and changing priorities.

21. IMD established a Chief Operating Officer (COO) position to oversee and manage the responsibilities of its operations and information systems and ensure that ICT is aligned with and in support of business needs and requirements. However, given that: (i) the position of COO was not yet filled; and (ii) the ICT Steering Committee of IMD (established in December 2014) was not sufficiently involved in coordination and alignment of ICT operations with business requirements, the strategic direction of ICT in IMD was unclear.

22. The absence of an updated ICT strategy and work plan aligned with business requirements may prevent IMD from addressing critical ICT risks (i.e., aging hardware and end-of-life support of critical systems).

(1) IMD should update and implement its ICT strategy and corresponding ICT work plans.

IMD accepted recommendation 1 and stated that it will present its ICT and business applications strategy to the Pension Board in July 2016. Recommendation 1 remains open pending receipt of the updated ICT strategy and corresponding ICT work plans.

Need to clarify ICT accountabilities, roles and responsibilities for project and ICT service management

23. According to the project management methodology (PRINCE II) adopted by IMD, project roles and responsibilities should be clearly defined.

24. The roles and relationships of the parties (i.e., ICT Steering Committee, RSG, Chief of ISS, technical focal points, project managers, and project advisory boards) involved in following ICT processes were not clear with regard to:

- (i) Preparing, reviewing and approving service delivery agreements, business change requests and project agreements;
- (ii) Accepting/signing off on project and service deliverables, and authorizing payments;
- (iii) Monitoring and reviewing service performance and quality;
- (iv) Communicating service and project issues to vendors or UNICC; and
- (v) Approving policies and changes to ICT infrastructure and projects.

25. In addition, IMD established a memorandum of understanding (MOU) with UNICC which required the assignment of IMD focal points for managing technical and financial matters. The MOU was supported by service delivery agreements and project agreements that also required the assignment of technical focal points, project coordinators and project advisory boards. However, at the time of the audit, the financial, technical and project roles had not yet been defined in IMD for the various projects and services assigned to UNICC. While the IMD Steering Committee acted as the project board of various ICT initiatives, reporting lines and requirements needed to be defined.

26. Unclear roles of ICT service managers, technical focal points, project managers, and project boards could lead to delays in project implementation and cost overruns.

(2) IMD should: (i) establish clear accountabilities, roles, responsibilities and reporting lines for planning, managing, approving, accepting and monitoring ICT services and projects; and (ii) assign these roles and responsibilities using a matrix that would indicate who would be responsible, accountable, consulted and informed.

IMD accepted recommendation 2 and stated that it has appointed a temporary COO effective 1 October 2015. The roles and responsibilities of the IMD ICT staff as well as ICT providers will be reviewed, clarified and documented. Recommendation 2 remains open pending receipt of the documented roles, responsibilities and reporting lines for planning, managing, approving, accepting and monitoring ICT services and projects.

Inadequate service planning

27. According to the project management framework of the United Nations Secretariat, ICT initiatives should be planned with adequate justification, expected business benefits, timescales, estimated total cost of ownership, acceptance criteria, dependencies, pre-requisites and requirements.

28. IMD did not follow a standard process during the planning of new and changed services. For example, IMD initiated the Enterprise Communication Services project to decommission the internal e-mail and messaging systems (Exchange and Lync) and outsource them to UNICC. The following weaknesses were identified regarding the outsourcing of these systems:

- (i) The justification for the selection of the ICT services (i.e., technical reasons and cost benefits analysis) was not documented;
- (ii) The total cost of ownership was not properly analyzed and documented. For example, project pre-requisites were not identified during the planning phase, thereby causing an increase in cost and delays in project deliverables. (i.e., additional projects and services were required for the implementation of encryption and the pre-requisites for completing Windows desktop upgrades); and
- (iii) Functional and non-functional service requirements and acceptance criteria were not clearly documented (i.e., security requirements for encryption of emails on user computers, service performance, and response time).

29. The lack of an adequate service planning process could result in unexpected cost increases, implementation delays, and inadequate solutions which do not satisfy business requirements.

(3) IMD should document and implement a service planning procedure for new and changing services, including: (i) justification; (ii) analysis of costs and required resources; (iii) analysis of pre-requisites; (iv) functional and non-functional (i.e., security, quality, performance) system requirements; and (v) acceptance criteria.

IMD accepted recommendation 3 and stated that a project initiation document, project plan with timelines, and other related documents will be prepared and an ICT Infrastructure Project Board will be convened for all UNICC services to manage this transition. Recommendation 3 remains open pending receipt of the service planning procedure.

B. Regulatory framework

Inadequate testing in service transition process

30. According to the project management methodology (PRINCE II) adopted by IMD, systems should be tested and verified against acceptance criteria ensuring that expectations are met.

31. IMD signed a project agreement with UNICC for implementing Enterprise Communication Services for email and Lync systems. However, the project agreement document did not describe test phases, scenarios and acceptance criteria. A user acceptance test was performed on the basis of criteria defined by UNICC rather than those of IMD. IMD did not formally communicate the test results of the project to UNICC.

32. Inadequate testing during the transition to new services could result in inadequate ICT solutions, cost overruns and delays in the implementation of the critical systems.

(4) IMD should: (i) design and implement procedures for service transitions; and (ii) document testing procedures for new and changed services.

IMD accepted recommendation 4 and stated that a project initiation document, project plan with timelines, test scenarios and user acceptance tests, and other related documents will be prepared and an ICT Infrastructure Project Board will be convened for all UNICC services in order to manage service transition. Recommendation 4 remains open pending receipt of service transition and testing procedures for new and changed services.

Lack of defined ICT services and service level agreement

33. The ICT function should define and document its ICT services with identification of dependencies and agreement on service levels.

34. The ICT services of IMD were not documented and defined with complete details relating to expected level of performance and operations. ISS documented a draft service level agreement with the internal business units it supported, describing the ICT services provided. However, this draft document was not signed by IMD management and business representatives, and not implemented.

35. ISS outsourced some of its ICT services to third parties. However, the service components and dependencies contracted to the various third parties were not documented. For example, the Charles River trade order management system was an application supported by ISS but its continuity depended on the functioning of several services (i.e., network services, OMGEO, FXall, active directory) which were provided and supported by other third parties.

36. The absence of adequately documented service requirements, minimum expected service levels and service dependencies could prevent IMD from establishing adequate service agreements and contracts.

(5) IMD should document its: (i) ICT services; (ii) service dependencies; (iii) service components; and (iv) business requirements describing the minimum expected service levels.

IMD accepted recommendation 5 and stated that it is in the process of documenting its service

catalogue. The service catalogue will include the services provided by the IMD ICT Team as well as those provided by its ICT partners such as UNICC and business application providers. Service dependencies and minimum expected service levels will be added. Recommendation 5 remains open pending receipt of the IMD ICT service catalogue with service dependencies and targets.

Need to define adequate ICT service agreements

37. The modification of ICT services should trigger corresponding changes to relevant provisions established in existing contracts and supporting service delivery agreements.

38. The service delivery agreements established between IMD and IMSS had not been updated or renewed after modifications were made in the corresponding service arrangements. For example:

- (i) IMD transferred the majority of its infrastructure support from IMSS to UNICC. However, while network management services remained with IMSS, they were still supported by an obsolete service delivery agreement signed in 2009; and
- (ii) IMD transferred the user-support function of the help-desk service from IMSS to UNICC. IMSS remained responsible only for the functions related to ticketing and escalation. This service change, however, was not reflected in the service delivery agreement for help-desk services established between IMSS and IMD.

39. The ICT services provided by UNICC were not consolidated under a new memorandum of understanding. Some of the service delivery agreements (and associated business change requests) were still operated under the provisions of an old MOU which did not include IMD as a direct client representative and point of contact. Additionally, IMD introduced several major changes to its ICT infrastructure. These changes required a revision of all ICT services managed under pre-existing service delivery agreements and business change requests to avoid overlaps and confusion.

40. Inadequate service delivery agreements which do not reflect the current ICT operations may prevent management from effectively monitoring and achieving its defined operational targets.

(6) IMD should review and update all ICT service delivery agreements and business change requests identifying potential overlaps, gaps, dependencies and minimum requirements.

IMD accepted recommendation 6 and stated that under the supervision of the COO the current service delivery agreements will be reviewed and updated as recommended. Recommendation 6 remains open pending receipt of evidence demonstrating that ICT service agreements and business change requests have been reviewed and updated.

Need to assess the dependencies between ICT service changes, applications and systems

41. The IMD risk management manual identifies changes to critical ICT systems as a risk that needs to be managed to prevent disruption of trading activities.

42. Following a reported security incident, IMD transferred the support of certain ICT services to UNICC by issuing a business change request as an addendum to a previously established service delivery agreement (not specifically related to ICT services being transferred). The following were noted with regard to the ICT support services transferred to UNICC:

- (i) The ICT support services were not described in the business change request in sufficient detail and were lacking agreed terms and conditions with the service provider (i.e., service description, targets and hours of operation, escalation and notification procedures, action to be taken in the event of service interruptions, scheduled agreed interruptions, notice and contact details of people authorized to act in emergencies);
- (ii) The delivery of ICT services experienced frequent downtime and unavailability; and
- (iii) The ICT support services included certain functionalities (i.e., active directory) which had an impact on other systems and applications (i.e., file servers, print servers, and databases). These were of an emergency nature.

43. IMD had not assessed the impact and risks of the changes that occurred and their dependencies on other systems and applications.

44. The absence of an adequate assessment of the impact and dependencies of ICT service changes could result in potential inefficiencies, unavailability of systems and financial losses.

(7) IMD should: (i) assess the dependencies between the ICT services transferred to UNICC and the existing systems and applications; and (ii) determine their impact and potential mitigating measures.

IMD accepted recommendation 7 and stated that under the supervision of the COO, this recommendation will be implemented. Recommendation 7 remains open pending receipt of assessment results and mitigating measures for dependencies of services transferred to UNICC.

Need to establish problem, incident and configuration management processes

45. ICT operations should be supported by documented procedures for incident, problem and configuration management.

46. ICT incidents and problems related to IMD operations were recorded and managed by IMSS through its help-desk system. However, tickets related to ICT incidents were not always closed after resolution. A root-cause analysis of recurring ICT incidents was not conducted. In addition, IMD did not have a configuration management database to track ICT services and system components and their relationships.

47. Since OIOS made a recommendation to address these weaknesses in its 2014 audit of ICT security in UNJSPF (Report 2015/014), no additional recommendation is made in the present report.

C. Performance monitoring mechanisms

Need to define and implement periodic service reviews

48. The level of ICT services received from third party service providers should be periodically monitored and assessed. Additionally, best practices recommend that service providers should produce periodic reports presenting: (i) performance against expected service targets; (ii) instances of service complaints; (iii) major events; and (iv) indicators of customer satisfaction.

49. Although, IMD performed annual reviews of the ICT services received from third party providers, the following control weaknesses were identified:

- (i) A formal service review process was not in place for the services provided by UNICC and IMSS, except for ad-hoc discussions on emergency issues;
- (ii) Reporting requirements and performance metrics were not aligned with service level agreements. The reports provided by UNICC did not include specific targets for each type of service. There were no reports provided by IMSS to IMD for the network and help desk services;
- (iii) Periodic reports on ICT service levels and achievements were not presented to IMD management; and
- (iv) Customer satisfaction surveys were not conducted to obtain feedback from IMD business users about the level of ICT services. Similarly, customer feedback was not collected by the IMSS help-desk during the closure of incident tickets and request for services.

50. The absence of performance metrics, periodic review of service levels and client satisfaction surveys may prevent IMD from addressing user requirements and result in inefficient ICT operations.

(8) IMD should: (i) establish a periodic service review procedure for ICT services provided by IMSS and UNICC; (ii) develop service performance metrics and embed the required service report template in its service delivery agreements; and (iii) introduce periodic customer satisfaction surveys for the services provided to IMD business users.

IMD accepted recommendation 8 and stated that infrastructure services are being transferred to UNICC by 31 March 2016. At that point, IMSS of the Fund's Secretariat will no longer provide any ICT services to IMD. IMD will implement this recommendation to monitor the services received from UNICC and other providers and perform periodic customer satisfaction surveys as recommended. Recommendation 8 remains open pending receipt of the service review procedure, report template, performance metrics and customer satisfaction surveys.

IV. ACKNOWLEDGEMENT

51. OIOS wishes to express its appreciation to the Management and staff of IMD for the assistance and cooperation extended to the auditors during this assignment.

(Signed) David Kanja
Assistant Secretary-General, Acting Head
Office of Internal Oversight Services

STATUS OF AUDIT RECOMMENDATIONS

**Audit of the information and communications technology operations in the Investment Management Division of the
United Nations Joint Staff Pension Fund**

Recom. no.	Recommendation	Critical ² / Important ³	C/ O ⁴	Actions needed to close recommendation	Implementation date ⁵
1	IMD should update and implement its ICT strategy and corresponding ICT work plans.	Important	O	Provide the updated ICT strategy and corresponding ICT work plans.	31 July 2016
2	IMD should establish clear accountabilities, roles, responsibilities and reporting lines for planning, managing, approving, accepting and monitoring ICT services and projects.	Important	O	Provide the documented roles, responsibilities and reporting lines for planning, managing, approving, accepting and monitoring ICT services and projects.	31 March 2016
3	IMD should document and implement a service planning procedure for new and changing services, including: (i) justification; (ii) analysis of costs and required resources; (iii) analysis of pre-requisites; (iv) functional and non-functional (i.e., security, quality, performance) system requirements; and (v) acceptance criteria.	Important	O	Provide the service planning procedure.	31 March 2016
4	IMD should: (i) design and implement procedures for service transition; and (ii) document testing procedures for new and changed services.	Important	O	Provide service transition and testing procedures for new and changed services.	31 March 2016
5	IMD should document its: (i) ICT services; (ii) service dependencies; (iii) service components; and (iv) business requirements describing the minimum expected service levels.	Important	O	Provide the IMD ICT service catalogue with service dependencies and targets.	31 March 2016
6	IMD should: (i) review and update all ICT service delivery agreements and business change requests identifying potential overlaps, gaps, dependencies and minimum requirements.	Important	O	Provide evidence demonstrating that ICT service agreements and business change requests have been reviewed and updated.	30 June 2016

² Critical recommendations address significant and/or pervasive deficiencies or weaknesses in governance, risk management or internal control processes, such that reasonable assurance cannot be provided regarding the achievement of control and/or business objectives under review.

³ Important recommendations address important deficiencies or weaknesses in governance, risk management or internal control processes, such that reasonable assurance may be at risk regarding the achievement of control and/or business objectives under review.

⁴ C = closed, O = open

⁵ Date provided by IMD in response to recommendations.

STATUS OF AUDIT RECOMMENDATIONS

**Audit of the information and communications technology operations in the Investment Management Division of the
United Nations Joint Staff Pension Fund**

Recom. no.	Recommendation	Critical²/ Important³	C/ O⁴	Actions needed to close recommendation	Implementation date⁵
7	IMD should: (i) assess the dependencies between the ICT services transferred to UNICC and the existing systems and applications; and (ii) determine their impact and potential mitigating measures.	Important	O	Provide the assessment results and mitigating measures for dependencies of the services transferred to UNICC.	30 June 2016
8	IMD should: (i) establish a periodic service review procedure for ICT services provided by IMSS and UNICC; (ii) develop service performance metrics and embed the required service report template in its service delivery agreements; and (iii) introduce periodic customer satisfaction surveys for the services provided to IMD business users.	Important	O	Provide the service review procedure, report template, performance metrics and customer satisfaction surveys.	31 December 2016

APPENDIX I

Management Response



TO: Mr. Gurpur Kumar, Deputy Director
A: Internal Audit Division, OIOS

18 November 2015

THROUGH: Ms. Carolyn Boykin
PAR: Representative of the Secretary-General
Investment Management Division
United Nations Joint Staff Pension Fund

CA 20 Nov. 2015

THROUGH: Mr. Daniel Willey
PAR: Compliance Officer
Investment Management Division
United Nations Joint Staff Pension Fund

*Daniel Willey
18 November 2015*

FROM: Ms. Zelda Tangonan-Fourcade
DE: Acting Chief Operating Officer
Investment Management Division
United Nations Joint Staff Pension Fund

Zelda Tangonan-Fourcade

SUBJECT: **Draft report on an audit of information and communications technology**
OBJECT: **operations in the Investment Management Division of UNJSPF (Assignment No. AT2015/801/01)**

1. Reference is made to your memorandum dated 09 November 2015 providing the report on the above-mentioned audit.
2. I am pleased to provide IMD's comments on the findings and recommendations as requested. Please find attached the Appendix I to the audit recommendations which details IMD's response to the findings.
3. I wish to thank you and OIOS for the recommendations made following the review and for the positive interaction with IMD staff regarding this matter.

cc: Zelda Tangonan-Fourcade, Acting Chief Operating Officer, IMD
Daniel Willey, Compliance and Audit Focal Point, IMD
Fernando Salon, Chief UNJSPF Audit Section, OIOS
Dino Dell'Accio, Chief ICT Audit Section, OIOS
Kamel Kessaci, Senior Information Systems Officer, IMD
Cynthia Avena-Castillo, Professional Practices Section, Internal Audit Division, OIOS
Stara Khan, Senior Risk Assistant, IMD
Wasantha Jayasinghe, Senior Compliance Assistant, IMD

Management Response

Audit of information and communications technology operations in the Investment Management Division of the United Nations Joint Staff Pension Fund

Rec. no.	Recommendation	Critical ¹ / Important ²	Accepted? (Yes/No)	Title of responsible individual	Implementation date	Client comments
1	IMD should update and implement its ICT strategy and corresponding ICT work plans.	Important	Yes	Acting Chief Operating Officer	July 2016	IMD will present its ICT and business applications strategy to the Pension Board in July 2016.
2	IMD should establish clear accountabilities, roles, responsibilities and reporting lines for planning, managing, approving, accepting and monitoring ICT services and projects.	Important	Yes	Acting Chief Operating Officer	31 March 2016	IMD appointed a temporary Chief Operating Officer effective 1 October 2015. The roles and responsibilities of the IMD ICT staff as well as ICT providers will be reviewed, clarified and documented. The goal is to have this task completed on or before 31 March 2016.
3	IMD should document and implement a service planning procedure for new and changing services, including: (i) justification; (ii) analysis of costs and required resources; (iii) analysis of pre-requisites; (iv) functional and non-functional (i.e., security, quality, performance) system requirements; and (v) acceptance criteria.	Important	Yes	Chief of Information System Section	31 March 2016	IMD follows Prince2 methodology for all its major projects. A full-blown Project Initiation Document, project plan with timelines, and other related documents will be prepared and an ICT Infrastructure Project Board will be convened for all UNICC services in order to manage this transition. IMD will work closely with IMSS and UNICC on this as soon as practicable. It is IMD's intention to finalize these documents on or before end-March 2016.

¹ Critical recommendations address critical and/or pervasive deficiencies in governance, risk management or control processes, such that reasonable assurance cannot be provided with regard to the achievement of control and/or business objectives under review.

² Important recommendations address important (but not critical or pervasive) deficiencies in governance, risk management or control processes, such that reasonable assurance may be at risk regarding the achievement of control and/or business objectives under review.

Management Response

**Audit of information and communications technology operations in the Investment Management Division of the
United Nations Joint Staff Pension Fund**

Rec. no.	Recommendation	Critical ¹ / Important ²	Accepted? (Yes/No)	Title of responsible individual	Implementation date	Client comments
4	IMD should: (i) design and implement procedures for service transition; and (ii) document testing procedures for new and changed services.	Important	Yes	Chief of Information System Section	31 March 2016	A full-blown Project Initiation Document, project plan with timelines, test scenarios and user acceptance tests, and other related documents will be prepared and an ICT Infrastructure Project Board will be convened for all UNICC services in order to manage this transition. IMD will work closely with IMSS and UNICC on this as soon as practicable. It is IMD's intention to finalize these documents on or before end-March 2016.
5	IMD should document its: (i) ICT services; (ii) service dependencies; (iii) service components; and (iv) business requirements describing the minimum expected service levels.	Important	Yes	Chief of Information System Section	31 March 2016	IMD is in the process of documenting its service catalogue. The service catalogue will include the services provided by IMD ICT team as well as those provided by its ICT partners such as UNICC and business application providers. Following this recommendation, services dependencies and minimum expected service levels will be added. This task will be completed by 31 March 2016. Note that this document will be updated as the services and requirements change.
6	IMD should: (i) review and update all ICT service delivery agreements and business change requests identifying potential overlaps, gaps, dependencies and minimum requirements.	Important	Yes	Acting Chief Operating Officer	30 June 2016	IMD appointed a temporary Chief Operating Officer effective 1 October 2015. Under her supervision, the current service delivery agreements will be reviewed and updated as

Management Response

**Audit of information and communications technology operations in the Investment Management Division of the
United Nations Joint Staff Pension Fund**

Rec. no.	Recommendation	Critical ¹ / Important ²	Accepted? (Yes/No)	Title of responsible individual	Implementation date	Client comments
						recommended. The estimated completion of this task is scheduled for 30 June 2016.
7	IMD should: (i) assess the dependencies between the ICT services transferred to UNICC and the existing systems and applications; and (ii) determine their impact and potential mitigating measures.	Important	Yes	Chief of Information System Section	30 June 2016	Some of these issues will be addressed in the PID and related documents as mentioned above. Under the supervision of the new IMD COO, this recommendation will be implemented along with recommendation 44. Estimated completion date is 30 June 2016.
8	IMD should: (i) establish a periodic service review procedure for ICT services provided by IMSS and UNICC; (ii) develop service performance metrics and embed the required service report template in its service delivery agreements; and (iii) introduce periodic customer satisfaction surveys for the services provided to IMD business users.	Important	Yes	Chief of Information System Section	31 December 2016	IMD infrastructure services are being transferred to UNICC. The estimated completion target date of this transfer is 30 March 2016. At that point, IMSS will no longer provide any ICT services to IMD. IMD will implement this recommendation to monitor the services received from UNICC and other providers and perform periodic customer satisfaction surveys as recommended. Implementation target date is on or before 31 Dec 2016.