



## **INTERNAL AUDIT DIVISION**

### **AUDIT REPORT 2013/020**

---

#### **Audit of the Umoja software system (SAP) implementation**

**Overall results relating to effective implementation and configuration of the SAP system were initially assessed as partially satisfactory. Implementation of eight important recommendations remains in progress.**

**FINAL OVERALL RATING: PARTIALLY  
SATISFACTORY**

**22 March 2013**

**Assignment No. AT2012/519/01**

# CONTENTS

	<i>Page</i>
I. BACKGROUND	1-2
II. OBJECTIVE AND SCOPE	3
III. AUDIT RESULTS	3-10
A. Risk management	4-5
B. Project management capacity	5-6
C. Performance monitoring indicators and mechanisms	6-7
D. Information technology support systems	7-10
IV. ACKNOWLEDGEMENT	10
ANNEX I      Status of audit recommendations	
APPENDIX 1   Management response	

# AUDIT REPORT

## Audit of the Umoja software system (SAP) implementation

### I. BACKGROUND

1. The Office of Internal Oversight Services (OIOS) conducted an audit of Umoja software system (SAP) implementation.
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. The Umoja software system (SAP) is an integrated suite of information technology applications that support activities related to finance and budget, human resources, supply chain, central support services, and other core functions. The SAP software was selected through a competitive process in September 2008, and awarded to the software vendor in December 2008. The software expenditures for the biennia 2008-2009 and 2010-2011 amounted to \$24,311,200. The estimated requirements for software licenses in 2012 and 2013 amount to \$6,534,000.
4. In June 2012, the Umoja Team adopted a new deployment plan based on the following approach:
  - (i) 1 July 2013: Cluster 1 Piloting in the United Nations Interim Force in Lebanon (UNIFIL) with three month stabilization. There will be a production pilot at the UNIFIL site, on a production system, testing all functionalities including infrastructure, end-to-end processes, change management and production support (including interfaces to legacy systems as well as detailed and aggregated reporting). The production pilot is essential to the deployment plan prior to its full implementation to other missions;
  - (ii) 1 October 2013: Deploy to all cluster 1, peacekeeping missions;
  - (iii) 1 January 2014: Deploy to cluster 2, special political missions; and
  - (iv) 31 December 2014: Deploy the Umoja Foundation processes to all offices as planned under the previous deployment plan (Secretary-General's report A/64/380).
5. In accordance with the new deployment plan developed in June 2012, the simulation pilot exercises will be performed on in a separate instance at UNIFIL, with most of the critical processes and interfaces, along with open balances. As a result, the following new priorities and dependencies were identified:
  - (i) Ensure that the technical and business architecture that drives the deployment sequencing is well understood, including:
    - Ability to interface Umoja with the Integrated Management Information System (IMIS), which will continue to be the system of record;

- Ability for business to do financial, operational and business reporting across SAP and IMIS (i.e., ability to feed SAP information back to IMIS at IMIS code block level); and
  - Distribution of users, functions and transactions at each target location (e.g. Office Away from Headquarters, Regional Commissions, Mission Headquarters, Sector Headquarters, and Team Site locations).
- (ii) Evaluate and decide on high level deployment options, such as:
- Big Bang on 1 July 2013 (interim processes and systems in place, and the United Nations Secretariat's capability to deploy and train to 18 sites and 4500 users in cluster 1);
  - Big Bang later than 1 July 2013 (interim processes and systems in place, the United Nations Secretariat's capability to deploy and train to 18 sites and 4500 users in cluster 1, including capability to provide detailed and aggregated reporting from Umoja and legacy systems); and
  - Phased rollout for cluster 1 starting 1 July 2013 (dependent on capacity and resources to support multiple cutovers, and capability to provide detailed and aggregated reporting from Umoja and legacy systems).
- (iii) Determining the most effective deployment strategy for the operating model, such as:
- Determine what functions of deployment can be executed centrally (e.g. process verification, data cleansing/conversion, legacy);
  - Determine which functions of deployment need to be executed locally (e.g. local testing, local technology, training delivery, cutover, and support); and
  - Design the most efficient hub & spoke deployment model for the scope of Umoja.

6. In accordance with the redefined priorities and dependencies of June 2012, the timeframe of the Umoja implementation was revised as follows:

- (i) Design phase: complete by 31 August 2012;
- (ii) Build phase: complete by 31 December 2012. Go Live date was planned for 1 July 2013;
- (iii) Test phase: from 1 July 2012 to 30 April 2013;
- (iv) Data conversion: from 24 September 2012 to 30 April 2013; and
- (v) Deployment: from June 2012 to July 2013.

7. Comments provided by the Umoja Office are incorporated in italics.

## II. OBJECTIVE AND SCOPE

8. The audit was conducted to assess the adequacy and effectiveness of the governance, risk management and control processes implemented by the Department of Management (DM) for providing reasonable assurance regarding the effective implementation and configuration of the Umoja software (SAP) system.

9. This audit was selected because of the high risks associated with the implementation of the Umoja system and the dependencies with other enterprise-wide initiatives.

10. The key controls tested for the audit were: (a) risk management; (b) project management capacity; (c) performance monitoring indicators and mechanisms; and (d) information technology support systems. For the purpose of this audit, OIOS defined these key controls as follows:

(a) **Risk management** - controls that provide reasonable assurance that risks relating to the implementation of the SAP system are identified and assessed, and that action is taken to mitigate or anticipate risks.

(b) **Project management capacity** - controls that provide reasonable assurance that there is sufficient project management capacity to achieve the mandate of the Umoja Office. This includes financial resources, competent human resources, and appropriate project management tools.

(c) **Performance monitoring indicators and mechanisms** - controls that provide reasonable assurance that appropriate metrics are: (i) established to enable measurement of the efficiency and effectiveness of operations; (ii) prepared in compliance with rules and are properly reported on; and (iii) used to manage operations effectively.

(d) **Information technology support systems** - controls that provide reasonable assurance that the Umoja system supports and addresses the needs of programmes/functions.

11. The key controls were assessed for the control objectives shown in Table 1. Certain control objectives (shown in Table 1 as “Not assessed”) were not relevant to the scope defined for this audit.

12. OIOS conducted this audit from May to December 2012. The audit covered the period from 2011 to 2012.

13. 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.

14. OIOS did not conduct direct technical tests on the SAP software system because it was under construction.

## III. AUDIT RESULTS

15. In OIOS’ opinion, the governance, risk management and control processes examined in DM were **partially satisfactory** in providing reasonable assurance regarding the **effective implementation and configuration of the Umoja software (SAP) system**. OIOS made eight recommendations in the report to

address issues identified in the audit. The Umoja Office developed a risk and issue management plan, made progress with regard to the recruitment of regular and temporary staff, developed weekly delivery reports, and documented a data quality strategy, quality assurance and process improvement plans. However, the risk/issue management plan did not consider risks that were external to the Umoja Office; the completion status in periodic reports was not defined consistently; there was a significant shortfall in subject matter experts (SMEs); periodic and timely quality reviews were not performed for the various milestones of the project; and documents related to system integration, data conversion, data quality and backup were not complete or signed-off.

16. 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(s)	Key controls	Control objectives			
		Efficient and effective operations	Accurate financial and operational reporting	Safeguarding of assets	Compliance with mandates, regulations and rules
Effective implementation and configuration of the Umoja software system	(a) Risk management	Partially satisfactory	Partially satisfactory	Not assessed	Partially satisfactory
	(b) Project management capacity	Partially satisfactory	Partially satisfactory	Not assessed	Partially satisfactory
	(c) Performance monitoring indicators and mechanisms	Partially satisfactory	Partially satisfactory	Not assessed	Partially satisfactory
	(d) Information technology support systems	Partially satisfactory	Partially satisfactory	Not assessed	Partially satisfactory
<b>FINAL OVERALL RATING: PARTIALLY SATISFACTORY</b>					

## A. Risk management

17. The Umoja Office developed a risk and issue management plan for the Umoja Foundation phase. The content and structure of the risk management plan was adequate, with a detailed definition of the methodology for the management of risks and issues, and associated milestones and measures.

18. The fourth progress report of the Secretary-General (A/67/360) detailed the main risks to the Umoja project in terms of: (i) lack of a comprehensive and realistic planning; (ii) lack of coordination with other United Nations Secretariat change initiatives, including the International Public Sector Accounting Standards (IPSAS) transition plan; (iii) and un-readiness on the part of the Organization to adopt the new solution. The report also described the mitigating measures put in place and/or in progress for addressing the risks identified. OIOS reviewed the mitigating measures being implemented by the Umoja Office and found them to be appropriate for the risks identified.

19. The Umoja Project Management Office had been reviewing and monitoring project risks and issues, and reporting the high priority ones requiring escalation to management, in its weekly status reports. However, in the risk management strategy, risks were not described with a complete responsibility matrix (Responsible, Accountable, to be Consulted, to be Informed, RACI). This condition might result in un-mitigated risks due to lack of accountability and responsibility (risk owner and risk actionee) assignments.

20. Although the Umoja Office developed and adopted a tool for assigning responsibility in terms of assignee roles (i.e., Reporter, Issue Manager, and Watch roles), these roles were not referenced in the risk management reports submitted to the Umoja Steering Committee (i.e., the documents “Alignment of deployment risks and Umoja Project Risks.xls” and the “Project Status Update.pdf”).

21. Also, while risks had been identified with regard to the new project approach, the risk/issue management plan did not consider risks external to the Umoja Office. These risks included issues such as: (i) dependency on the software vendor (i.e., for specific version of the SAP software being developed for the United Nations common system, reported as critical risk in the Secretary-General’s fourth progress report); and (ii) constraints related to specific entities of the United Nations Secretariat that could limit their ability to support the adoption of Umoja or cause delays (i.e., data cleansing activities).

**(1) The Umoja Office should update its risk management strategy with: (i) definition of the responsibilities (risk owner and risk actionee) assigned for the mitigation of each risk; (ii) mechanisms for obtaining feedback from stakeholders (Secretariat entities) about their risks; and (iii) mechanisms for assigning to the business owners the mitigation of risks that originate in their respective areas of responsibility.**

*The Umoja Office accepted recommendation 1 and stated that the risk management tool has been modified and Business Readiness Managers were trained to understand how to create and review risks and issues. Recommendation 1 remains open pending receipt of the updated risk management strategy document describing the involvement of business owners in risk management.*

## **B. Project management capacity**

### Project budget and staff

22. As of 31 July 2012, Umoja had expended \$147.4 million of the \$214.1 million allotted for the period 2008 - 2012.

23. As of September 2012, the Umoja Office had the following vacancy rates:

(i) Sixteen per cent in its regular and temporary posts (76 filled posts against the 90 posts available). This represented a decrease from the thirty-three per cent vacancy rate noted by OIOS in January 2012 during the previous audit of human resources management in the Umoja Office (AT2011/510/02); and

(ii) Sixty-four per cent in the SMEs pool (24 SMEs were in place against the 66 posts available). The SME pool was augmented in 2012 from 44 to 66 posts and the number of SMEs recruited increased from 19 to 24 since the previous audit.

24. The Umoja Office had made progress with regard to the recruitment of regular and temporary staff. With regard to the SMEs, a recruitment strategy was developed and instructions were issued to offices and departments for the release of SMEs. However, given the significant shortfall in SMEs, additional steps were needed to recruit the SMEs required for the next deployment phase of the project.

**(2) The Umoja Office should intensify efforts for the timely recruitment of the SMEs required for the next deployment phase of the project.**

*The Umoja Office accepted recommendation 2 and stated that it had revised its resource and staff planning for 2013 and aims to fill the gaps in critical areas. Recommendation 2 remains open pending the recruitment of the remaining SMEs.*

Project management tools and documentation

25. The progress made towards the project deliverables of Umoja were tracked with a customized database (i.e., Rapport). This database contained the information related to all the deliverables defined in the scope of the Umoja Foundation phase, and included contractual and non-contractual work products. OIOS identified some issues such as multiple copies of the documents, lack of approval status and several empty folders. Umoja clarified that the document repository served as depository of current/historic documents and as file reference naming structure for future content. The system was implemented to categorize permanent records. Given the evidence provided by the Umoja Office, OIOS did not issue any additional recommendations in this area.

### **C. Performance monitoring indicators and mechanisms**

Performance indicators

26. OIOS reviewed the daily, weekly and G2G reports generated from August to November 2012. The weekly delivery reports were adequately prepared with details on the status of the deliverables for the functional specification documents, technical design, development objects, functional acceptance tests, and non-development deliverables. The G2G progress summary by phase showed adequate information on the overall progress made and also for the specific phases of development box build, build start, design carry over 1, and design carry over 2. However, with regard to the rate of completion indicated in the weekly delivery reports, the Umoja Office indicated only the rate of completion that considered the items with and without sign-off. OIOS re-calculated the rate of completion by considering only the items completed with sign-off, and noted that the percentage of completion is considerable less. For example, for the week 7 November 2012, the rate of completion would be 44% instead of 67%.

27. In addition, OIOS' analysis of the weekly status reports (i.e., dated 30 November 2012) highlighted the following issues:

- (i) The number of items without sign-off was counted as "Actual" throughout the report. The management headline in Page 1 indicated that 109 FRICEW (Forms, Reports, Interfaces, Enhancements, and Workarounds) development objects had been completed whereas none of the 109 were signed-off;
- (ii) Project status evaluation (green/yellow/red) was not systematic or consistent. The metric rating adopted by the Umoja Office indicated with a red colour those instances where "the Planned %" minus "Actual %" was more than 15%. However, the report often showed green or yellow even if a project was behind schedule by more than 15% based on their "Planned" and

"Actual" numbers. Therefore, it would appear that if the "Actual %" did not include the items with sign-off, the ratio would have been much lower; and

(iii) The definition of "Actual" was inconsistent in certain parts of the report. In the functional acceptance tests the "Model Development and Review" reported in page 43 of the weekly status report, "Actual" referred to the items with "sign-off only", whereas in the rest of the report "Actual" included the items without sign-off.

**(3) The Umoja Office should distinguish in its delivery reports the rate of completion for the items with and without sign-off, to ensure a clear presentation of the results delivered.**

*The Umoja Office accepted recommendation 3 and stated that the status reporting mechanisms will be harmonized between the various vendors including the Build Vendor (Indra) for Umoja Extension. Recommendation 3 remains open pending receipt of updated delivery reports.*

#### Quality assurance and process improvement plan

28. The Umoja Office developed a quality assurance and process improvement plan in support of the Foundation phase processes. The structure and content of this plan was adequate, with details of the deliverables, software, systems, and processes.

29. OIOS reviewed a sample of the testing documentation prepared for the unit and string testing. However, evidence of the remaining quality assessments (Umoja/Project Management Office compliance reviews, peer-reviews, product integration, etc.) was not yet available. These quality reviews could provide significant benefits to the configuration and deployment of the Umoja system if their results were generated in a periodic and timely manner, especially at the completion of the main project milestones and phases of the project.

30. OIOS reviewed the procedures and documents provided by the Umoja Office in support of the quality management function and noted that as of the time of the audit, no quality review reports had been produced.

**(4) The Umoja Office should schedule periodic and timely quality reviews at the completion of the main project milestones and phases, to confirm that: (a) business value was achieved; (b) client expectations were met; and (c) quality deliverables were produced.**

*The Umoja Office accepted recommendation 4 and stated that the Umoja Foundation and Extension milestones review is being executed in line with the contractual provisions with their respective system integrator. The process to enable dedicated quality review is scheduled to be in place by 31 July 2013. Recommendation 4 remains open pending receipt of quality review reports.*

## **D. Information technology support systems**

### System integration

31. The Umoja Office identified approximately 300 existing systems as requiring a technical interface with the SAP system. It was expected that each one of these systems will require maintenance of its own data during the transition phase until Umoja's phased deployment is complete (geographic and functional).

32. A data conversion and integration strategy was drafted by the Umoja Office and reviewed by the build vendor. This draft strategy contained plans for using the SAP's process integration middleware as the standard integration technology for ensuring consistency of approach to the technical design of interfaces. In accordance with this strategy, each interface will have a corresponding functional specification and technical specification design document describing in detail the application logic, business rules, communications protocol to be used, and frequency of data exchange. The number of interfaces required for Foundation and Extension phases was defined as approximately 75.

**(5) The Umoja Office should formalize the integration strategy and develop the corresponding functional and technical specification design documents for integrating SAP with the existing applications across the Secretariat.**

*The Umoja Office accepted recommendation 5 and stated that the integration strategy will be signed off, and the respective functional and technical specifications will be developed and tested on each phase. Recommendation 5 remains open pending receipt of the completed integration strategy and corresponding functional and technical specification design documents.*

#### Data quality

33. A data quality strategy was developed with relevant details including the scope, purpose, data responsibility matrix, working groups, cleansing mechanisms, tools and potential risks. Although the strategy was developed on the basis of an adequate structure, the following supporting and completing documents were pending:

- (i) Data conversion technical specification document template;
- (ii) Data conversion plan;
- (iii) Data conversion test script template;
- (iv) Umoja development standards;
- (v) Umoja client landscape strategy; and
- (vi) Umoja data standards.

34. Incomplete data quality controls could cause interoperability and integration problems, and implementation errors, causing delays, rework and increased costs.

**(6) The Umoja Office should finalize the documentation in support of data quality with the completion of: (i) data conversion technical specification template; (ii) data conversion plan; (iii) data conversion test script template; (iv) Umoja development standards; (v) Umoja client landscape strategy; and (vi) Umoja data standards.**

*The Umoja Office accepted recommendation 6 and stated that functional and technical specifications are being developed for each phase and some of them are completed. Recommendation 6 remains open pending receipt of the signed-off documents for data quality.*

## Data conversion

35. The data conversion strategy detailed – in addition to the standard elements of the strategic documents developed by the Umoja Office for scope, purpose, and roles and responsibilities - specific information on the conversion process, types of data, reconciliation, tools, and documents. The document was logically linked with the other related areas of data quality, conversion plan and archiving and decommissioning. However, information was still missing with regard to:

- (i) Key dates for integrated conversion tests;
- (ii) Umoja integrated conversion test plan; and
- (iii) Key Decision Documents (KDDs) for data conversion for Central Support Services (CS), Finance and Budget (FI), Programme and Project Management (PP), and Supply Chain (SC). The Umoja Office confirmed that the functional teams included key decisions with respect to data conversions for central support services, finance and budget, programme and project management and supply chain in the Functional Specification Documents for each data object, and determined that a separate KDD was not required in these areas.

36. The data conversion plan was developed iteratively across 4 mock conversion cycles for individual conversions tests, conversion sequence, timings and dependencies. The number of individual conversions and the volume of data increased with each successive mock. Mocks 3 and 4 included all conversions and mock 4 converted the maximum volume of data. The conversion plan was refined following each mock and the plan would be finalized after mock 4 (planned for April 2013).

37. Data conversions were being tested through unit, functional acceptance, and mock tests.

38. The Umoja Office drafted a client landscape strategy. Umoja data standards were documented in the functional specification documents, defining United Nations specific standards for data fields in the Umoja/SAP data model. In addition, a draft master data management (MDM) document outlining the approach to corporate data standards had also been developed.

39. However, OIOS reviewed the Umoja document repository and noted that data owners were still not confirmed, and that the strategic documents were still in draft form and had not been approved.

**(7) The Umoja Office should finalize the documentation in support of data conversion with the formalization and completion of: (i) data owners; (ii) key dates for integrated conversion tests; and (iii) Umoja integrated conversion test plan.**

*The Umoja Office accepted recommendation 7 and stated that data owners are identified, and that collection, enrichment and conversion tests on UN data are accomplished through Product Integration Test cycles. Recommendation 7 remains open pending receipt of documentation in support of data conversion, containing the details of data owners and test plans.*

## Backup

40. The Umoja Office documented a draft backup policy with reference to the standard best practices commonly used for the Oracle database. However, this draft did not contain the specific information related to the Umoja environment and settings, and operational procedures for backups were not

documented. This condition could limit the ability of the Organization to ensure continuity of operations and prompt disaster recovery.

**(8) The Umoja Office should develop a data backup strategy with adequate information related to the Umoja environment, including the backup requirements, frequency, testing, offsite storage, retention of media, security of facility and data, and roles and responsibilities.**

*The Umoja Office accepted recommendation 8 and stated that backup procedures will be finalized in coordination with DFS, addressing the network traffic concerns of DFS. Recommendation 8 remains open pending receipt of the data backup strategy.*

#### IV. ACKNOWLEDGEMENT

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



---

David Kanja, Assistant Secretary-General  
Office of Internal Oversight Services

## STATUS OF AUDIT RECOMMENDATIONS

## Assignment no. AT2012/519/01 – Audit of the Umoja software system (SAP) implementation

Recom. no.	Recommendation	Critical/ important <sup>2</sup>	C/ O <sup>3</sup>	Actions needed to close recommendation	Implementation date <sup>4</sup>
1	The Umoja Office should update its risk management strategy with: (i) definition of the responsibilities (risk owner and risk actionee) assigned for the mitigation of each risk; (ii) mechanisms for obtaining feedback from stakeholders (Secretariat entities) about their risks; and (iii) mechanisms for assigning to the business owners the mitigation of risks that originate in their respective areas of responsibility.	Important	O	Provide the updated risk management strategy describing the involvement of business owners in the risk management.	30 April 2013
2	The Umoja Office should intensify efforts for the timely recruitment of the SMEs required for the next deployment phase of the project.	Important	O	Provide documented evidence of the selection of the remaining SMEs.	31 December 2013
3	The Umoja Office should distinguish in its delivery reports the rate of completion for the items with and without sign-off, to ensure a clear presentation of the results delivered.	Important	O	Provide updated delivery reports.	30 April 2013

1 Critical recommendations address significant and/or pervasive deficiency or weakness 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.

2 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.

3 C = closed, O = open

4 Date provided by DM in response to recommendations.

<b>Recom. no.</b>	<b>Recommendation</b>	<b>Critical/<sup>1</sup> important<sup>2</sup></b>	<b>C/O<sup>3</sup></b>	<b>Actions needed to close recommendation</b>	<b>Implementation date<sup>4</sup></b>
4	The Umoja Office should schedule periodic and timely quality reviews at the completion of the main project milestones and phases, to confirm that: (a) business value was achieved; (b) client expectations were met; and (c) quality deliverables were produced.	Important	O	Provide the quality review reports.	31 July 2013
5	The Umoja Office should formalize the integration strategy and develop the corresponding functional and technical specification design documents for integrating SAP with the existing applications across the Secretariat	Important	O	Provide the final integration strategy with the functional and technical specification design documents.	31 December 2016
6	The Umoja Office should finalize the documentation in support of data quality with the completion of: (i) data conversion technical specification template; (ii) data conversion plan; (iii) data conversion test script template; (iv) Umoja development standards; (v) Umoja client landscape strategy; and (vi) Umoja data standards.	Important	O	Provide the signed-off data quality reports, containing: (i) data conversion technical specification template; (ii) data conversion plan; (iii) data conversion test script template; (iv) Umoja development standards; (v) Umoja client landscape strategy; and (vi) Umoja data standards.	28 February 2014
7	The Umoja Office should finalize the documentation in support of data conversion with the formalization and completion of: (i) data owners; (ii) key dates for integrated conversion tests; and (iii) Umoja integrated conversion test plan.	Important	O	Provide the documentation in support of the data conversion with details pertaining to: (i) data owners; (ii) key dates for integrated conversion tests; and (iii) Umoja integrated conversion test plan.	30 April 2013
8	The Umoja Office should develop a data backup strategy with adequate information related to the Umoja environment, including the backup requirements, frequency, offsite storage, retention of media, security of facility and data, and roles and responsibilities.	Important	O	Provide the data backup strategy with adequate information related to the Umoja environment, including the backup requirements, frequency, testing, offsite storage, retention of media, security of facility and data, and roles and responsibilities.	31 March 2013