



ORGANISATION DE L'AVIATION
CIVILE INTERNATIONALE

INTERNATIONAL CIVIL
AVIATION ORGANIZATION

**Internal Audit Report
on
IT Asset Management**

IA/2024/1

Office of Internal Oversight



ACRONYMS

ADB	Bureau of Administration and Services
AI	Administrative Instruction
CMDB	Configuration Management Database
COBIT	Control Objectives for Information and Related Technology
CSG	Conference Security and General Services
ERP	Enterprise resource planning
FIN	Finance Branch
ICAO	International Civil Aviation Organization
ICT	Information and Communication Technology
IPSAS	International Public Sector Accounting Standards
MIS	Management Information System
OIO	Office of Internal Oversight
OSG	Office of the Secretary General
PPE	Property, Plant and Equipment
PRO	Procurement Section
PCL	Property Control and Logistics
RO	Regional Office
SRR	Staff Regulations and Rules

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EXECUTIVE SUMMARY

1. In accordance with its annual work plan for 2023 (C-WP/15452), the Office of Internal Oversight (OIO) carried out an audit of IT asset management. The objectives of the audit were to assess whether (a) processes, systems, and tools are designed and implemented to facilitate efficient and effective management of the IT asset life cycle, (b) ICAO's administrative instructions define roles and responsibilities, and provide for effective management of information technology assets, and (c) safeguard mechanisms are in place to facilitate the effective and efficient utilization, movement, and disposal of IT assets. The audit was conducted in conformance with the International Standards for the Professional Practice of Internal Auditing¹.
2. Governance and oversight of IT asset management have been negatively impacted by the absence of an authoritative and comprehensive formal administrative instruction detailing processes, roles and responsibilities throughout the asset lifecycle, and existing procedures/guidance have been in draft form and not reviewed and updated in the last five years. The control environment around IT asset management is weak, which is also evident from incomplete asset data fraught with data quality issues. Weak internal controls around asset management increase the likelihood of misappropriation, theft, or loss of assets.
3. There is no automated asset management system in use. There are no interfaces that exist between asset management process and existing Enterprise Resource Planning (ERP) system. Reconciliation of asset items with respect to invoices, goods received notes and data of purchase orders in ERP is not automated. In absence of automated controls, there are high risks of data entry errors due to manual input such as human errors, typos, etc. compromising reliable, accurate and complete IT asset information.
4. OIO identified a range of data completeness and quality issues primarily arising due to manual data entry and maintenance of assets lists using ad hoc Excel spreadsheets. The extent of data quality issues in case of assets of regional Offices make it difficult to do any procurement planning, physical verification at regular intervals, and MIS reporting.
5. There is inherent duplicity of organizational efforts as Property Control, and Logistics Unit (PCL) is maintaining tangible IT assets using excel sheets, and in parallel, Information and Communication Technology (ICT) is keeping a list of hardware items in the service desk system. While two items were missing in the Headquarters IT asset list provided by PCL, these could be traced by ICT in the data maintained by ICT in Service Desk Plus. Likewise, items of few purchase orders were included in the PCL list but were missing in Service Desk Plus data. There is no single source for ensuring accuracy and completeness of the existing lists of IT assets.
6. PCL does not maintain the lists of intangible assets. Nearly 10% of ICT budget is spent every year in procurement of software licenses. OIO observed cases where high value procurement of software licenses could not be optimally used.
7. The results of the audit indicate a lack of organizational level prioritization of the asset management function and processes. Under Transformation Objective, a new system based

¹ IIA Standard 1321

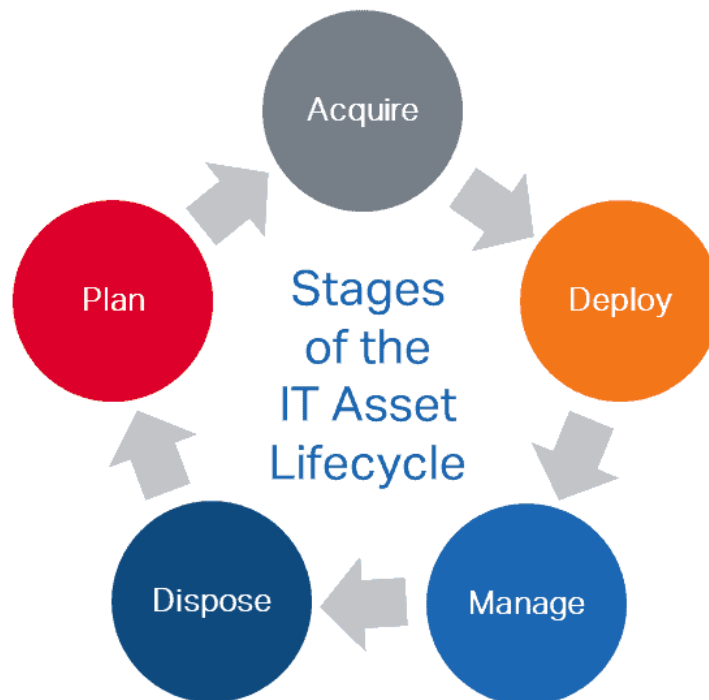
on Service Now is planned to be implemented by the end of 2024, which will also implement the IT Asset management process in phase 2 of this project.

8. Based on the results of the audit, OIO has given an audit rating of "Major Improvement Needed". This report made five recommendations of which four are high priority related to development of administrative instruction for asset management; review of data quality and completeness of asset database; providing interfaces between new ERP and Service Now for automated reconciliation of asset databases; and review of old and obsolete items. Management comments and proposed actions are in the Management Action Plan at Annex 3.
9. OIO wishes to thank management and staff for their assistance and cooperation during the audit.

RESULTS OF THE AUDIT

Introduction

10. IT asset management (also known as ITAM) is the process of ensuring that an organization's IT assets are accounted for, deployed, maintained, upgraded, and disposed of when the time comes, to make sure that the valuable items, tangible and intangible, are tracked and being used.



11. The Property Control, Logistics and Commissariat Unit (PCL) is responsible for asset receiving, asset management, and asset databases for ICAO Headquarters and Regional Offices in respect of all PPE (Property, Plant and Equipment) having value of more than CAD 300. PCL staff record all tangible assets² and assign barcode numbers.
12. Finance Branch, under delegated authority from the Secretary General, shall maintain the financial records and is responsible³ for the preparation and fair presentation of the financial statements, in accordance with IPSAS and the ICAO Financial Regulations. ICAO accounting policies state capitalization criteria for recording of PPE and intangible assets having value of more than a threshold value (CAD 3000 for tangible assets and CAD 5000 for intangible assets⁴, and CAD 25000 for internally developed intangibles) in the Fixed Asset Module and General Ledger, and record depreciation over the useful life of the asset.
13. ICT is the main purchaser of tangible and intangible IT assets and has the overall responsibility for providing PCL with all relevant updated data related to the location or any other missing information in the Headquarters list of IT assets.

² Tangible assets are items with a real physical form that may depreciate over time, such as laptops and workstations.

³ Financial Regulations and Rules, Article XII

⁴ An intangible asset is an asset that is not physical in nature, such as software license, patent, brand, trademark, or copyright.

Audit Objectives

14. The objectives of the audit were to assess governance, risk management and key controls as well as operational effectiveness and efficiency around IT asset management. Specifically, OIO assessed whether:
 - (a) processes, systems, and tools are designed and implemented to facilitate efficient and effective management of the IT asset life cycle;
 - (b) ICAO's administrative instructions define roles and responsibilities and provide for effective management of information technology assets; and
 - (c) safeguard mechanisms are in place to facilitate the effective and efficient utilization, movement, and disposal of IT assets.

Scope and Methodology

15. The audit scope included review of relevant documentation, administrative guidance, procedures, and practices including but not limited to maintenance of asset lists by Headquarters and Regional Offices, capitalization of assets following IPSAS standards and steps taken to strengthen asset management under transformational project. Key staff from PCL (Property, Control and Logistics), ICT, FIN (Finance) and PRO (Procurement) were interviewed and consulted during audit to gain a better understanding of IT asset management and to identify the challenges and lessons learned.
16. The audit tests were conducted using business intelligence⁵ tool. The data of assets as updated by PCL till the end of year 2022 was cross checked with the ERP data of all IT assets procured by Headquarters and Regional Offices in 2020, 2021 and 2022.
17. The Control Objectives for Information and related Technology (COBIT) process BAI09⁶ was used as the criteria for this audit in view of outdated ICAO's procedures and guidelines, which had not been reviewed in last five years.

Findings

Review of Adequacy of Systems and Procedures

18. The Administrative Guidelines on management of property, plant, and equipment (PPE) were developed by PCL in 2019. It was not clear whether the provisions of this document are mandatory because this document is neither an administrative instruction nor does it mention its approving authority. These guidelines have not been reviewed and updated since 2019. This document is also not available on ICAO's intranet portal, indicating that this is not widely disseminated. OIO was informed that a review of the existing guidelines and procedures is ongoing.
19. According to the current guidelines, the recording and maintenance of all PPE should be done using an Inventory Management System (IMS) and IMS data will provide one unified inventory database for both the Headquarters and Regional Offices. However, asset lists are maintained in an ad hoc manner using Excel sheets instead of using a robust IMS to track and maintain the assets. Excel sheets do not provide data validation or integrity checks

⁵ Power BI

⁶ COBIT ITAM process BAI09, (Build, Acquire and Implement) ensures controlled and efficient management of IT assets throughout their lifecycle.

inherently found in proper asset management systems. Without appropriate validation, it becomes very difficult to ensure consistency, accuracy, and completeness of data. One of the significant risks of using Excel sheets for asset management is the increased probability of data entry errors due to manual input such as human errors, typos, incorrect formulas, or accidental deletions. Such errors lead to inaccurate asset information, which can compromise IT asset procurement planning, decision-making, and impact the organization's ability to effectively manage its IT assets. Significant data quality issues were noted while analysing these excel sheets containing data of IT assets. A comprehensive analysis is reported in a subsequent section of this report.

20. Excel sheets are not designed for real-time collaboration, making it impossible for multiple users to access and update asset information concurrently, potentially leading to version control issues, and delays in decision-making processes. Using ad hoc excel sheets is bound to eventually jeopardize data accuracy and completeness. Excel sheets also lack the sophisticated security features provided by dedicated asset management software. Unauthorized access, accidental data deletion, or intentional data manipulation are significant risks when sensitive asset information is managed in Excel sheets.
21. In early 2022, Head of PCL and other PCL staff resigned, and there was no formal handing over and knowledge transfer before their separation, to the new staff temporarily assigned to PCL. Severe challenges were faced because of lack of knowledge transfer. A short-term consultant was hired by PCL⁷ in December 2023 to analyze their business operations and to develop a framework of polices and procedures for PCL.
22. IT asset management (ITAM) practices of ICT are also not documented. ICT presently uses an IT service desk system⁸ for IT operations management (ITOM) and for assigning hardware items to staff members. IT Asset management (ITAM) is partly covered by this system. The service desk has presently been managed by consultants hired by ICAO and absence of documentation of ITAM practices is a considerable risk in continuity of operations in case of turnover of personnel.
23. There is inherent duplicity of organizational efforts as PCL is maintaining tangible IT assets using excel sheets and in parallel, ICT is managing list of hardware items in service desk system. While two items were missing in the Headquarters IT asset list provided by PCL, these could be traced by ICT in the data maintained by ICT in Service Desk Plus. At the same time, data of hardware assets maintained in Service Desk Plus system by ICT was not complete as there were many purchase orders⁹ which could not be traced back to entries in the asset lists maintained in service desk system by ICT. There is no single source of truth for knowing about the existing IT assets.
24. The existing service desk plus based system used by ICT is already planned to be replaced by an ongoing transformation project on service management, which aims to adopt UNDP's cloud-based "Service Now" system, to automate manual processes, track assets and manage tangible and intangible assets and have better visibility and control over IT assets. This project will cost about CAD 633,000 and expected to be implemented by the end of 2024.

⁷ PO [REDACTED]

⁸ Service Desk Plus platform

⁹ Purchase Orders - [REDACTED]

25. Governance and oversight of IT asset management have been negatively impacted by the absence of a comprehensive and updated procedure/guidance consolidating the existing fragmented practices, detailed roles and responsibilities and business processes throughout the asset lifecycle.
26. External Auditor also observed¹⁰ that that the fixed assets process involved multiple parties from different units as well as regional offices. External Auditor recommended in 2023 that ICAO review the fixed assets process, simplify it and appoint an officer who is responsible for the yearly update, as well as the completeness and accuracy of the information recorded in the Inventory Management System.

Recommendation 1	Administrative Instructions on Asset Management
Priority	High
<p>ADB should develop authoritative administrative instructions on asset management including aspects but not limited to (i) roles and responsibilities, (ii) automated systems and procedures, (iii) process of reconciliation of asset data with automated alerts from new ERP and ensuring data quality checks, (iv) physical verification of assets, (v) utilization of assets, and (vi) efficient disposal of old and obsolete items.</p>	
<p>Closing criteria:</p> <p>Introduction and dissemination of approved Administrative Instructions on asset management.</p>	

Absence of interfaces between Asset Management and ERP system

27. While purchasing hardware/software items for the Regional Offices (ROs), the cost centers of both the RO and ICT are being interchangeably used while recording purchases in ERP system. Sometimes, it's the cost centre of Regional Office and sometimes it's the cost centre of Information Management Services (4070). The current practice of mixing the cost centers, depending on where the budget lies, is not helpful in reconciling the manually prepared asset lists of Regional Offices and should be reviewed while a new ERP is being implemented. The very purpose of defining the account code structure is defeated as no reporting is possible on queries like "How many laptops were purchased for use of a particular regional office in a particular year?" While ICT should continue to facilitate ICT related procurements because of their specialization in this area, either the cost center of the concerned RO/Bureau should be used or there should be an alternative mechanism in the new ERP to identify the Bureau/RO requisitioning the assets against all purchases.
28. Reconciling asset lists with invoices and goods received notes is an essential process that ensures the accuracy of asset records and helps identify any discrepancies between what was ordered and what was received. The Unit4 ERP system maintains the procurement data and authorize payments to vendors after receipt of "goods received notes" from requisitioners of assets. However, the existing ERP system has neither been interfaced nor

¹⁰ Financial Statements and Reports of the External Auditor for the Financial Year Ended 31 December 2022

historically used to possibly automate reconciliation of asset lists with reference to paid purchase orders and direct purchase orders. Such an automated control could have ensured the inclusion of many assets found missing in the asset lists of 2022 year-end.

Recommendation 2	Asset module in new ERP
Priority	High
<p>ADB/PCL, in close collaboration with FIN, ICT and PRO, should ensure that there are built-in functionalities in the design of asset module of new enterprise resource planning system to facilitate automated reconciliation of asset data. The new ERP should provide for alerts based on processing of invoices and/or goods receiving notes.</p>	
<p>Closing criteria:</p> <p>Development of an asset module in Quantum with linkages to the procurement data.</p>	

Accuracy of IT Assets Data

29. PCL unit maintains the asset registry for each Regional Office and is responsible to carry out checks on accuracy of asset lists which are updated and submitted by Regional Offices to PCL as part of the year end financial closing exercise.
30. OIO analyzed the IT asset data provided by PCL for both the Headquarters and Regional Offices (Year-end 2022) and analyzed items with respect to ICT related procurements made in 2020, 2021 and 2022.
31. The hardware assets of the Headquarters (list provided by PCL as at end of 2022) accounted for all items except a couple of small items¹¹. The internal control around reconciliation of hardware items were generally satisfactory. OIO noted that PCL does not maintain the asset records of intangible items like software licenses.
32. There were significant gaps in Regional Offices' IT asset data as many hardware items delivered in the period 2020-2022 to the Regional Offices were not found recorded in PCL asset lists of Regional Offices (details in Annex 2). These included 84 laptops, seven UPS, five printers, and one server.
33. The details of all unrecorded items are in Annex 2 of this report. The data of unrecorded items was shared with PCL which informed OIO that concerned Regional Offices recorded few IT assets¹² in 2023 which otherwise should have been recorded immediately after receiving in 2022 or prior years. Some IT assets¹³ which were received in 2022 or earlier, could not be traced by PCL even in asset lists of 2023 of respective Regional Offices. The present status of the inclusion of these items in the asset lists or otherwise is reflected in Annex 2.

¹¹ [REDACTED]

¹² involving 20 purchase orders

¹³ Involving ten purchase orders

34. A centralized purchase of network equipment (CISCO hardware, support, licenses, and UPS) worth CAD 605,253 (PO 12122481) was made by Headquarters in 2021, to augment organizational disaster recovery. OIO analyzed 26 invoices linked with this purchase order and observed that IT equipment was delivered in different stages to Regional Offices (except EURNAT) and RSO in 2022. However, only APAC and NACC ROs partly recorded some of these items in their asset lists of 2022 (recorded value CAD 65,000 approximately) and the rest of the Regional Offices and RSO failed to record these network related equipment items in their respective asset lists.
35. Regional Offices do not maintain any intangible assets in their asset database. This situation is for both the centralized purchases by Headquarters as well as local purchase made by Regional Office (For example M-files licenses of EURNAT).
36. Although not usually considered a part of IT assets, some tangible assets procured through PSPC (Public Services and Procurement Canada) were not recorded in the Headquarters' asset database. The assets acquired under Assembly Hall Digital banner project (PO 12120163) and SVSI¹⁴ Video distribution centre project (PO 12121041) were missing in the PCL asset database of Headquarters.

Data Quality Issues

37. OIO analyzed the data of asset inventories (both the Regional Offices and Headquarters). This is the final compiled data of 2022 end after accuracy checks were exercised by PCL.
38. There were 7172 items¹⁵ recorded in RO asset list compiled by PCL at the end of 2022. There are wide variations in the number of items recorded by different regional offices while the budget/expenditure and staff strength of all ROs are quite similar. An analysis will be beneficial to find out the reasons for this uneven trend.
39. APAC did not record Bar Codes in 1158 records out of 1479 (78%).
40. No laptops/desktops were available in the 2022 asset lists of EURNAT and RSO.
41. Not a single ICT related item was found in the 2022 asset list of MID.
42. EURNAT, WACAF and RSO did not record invoice numbers in case of any of the items. While it is understandable that invoice numbers of all purchases may not be available (old items, gifted items, etc.), but the gap is 100% in case of EURNAT, WACAF and RSO. NACC recorded invoice number only in respect of 206 items out of 331 (62%). This is in contrast with the 2019 draft guidelines on management of PPEs.
43. Dates of entries of records were missing in 554 out of 658 entries in case of EURNAT (64%), and 859 out of 2355 entries (36%) in case of SAM.
44. In the PCL asset lists, purchase order numbers were missing in 419 entries out of 658 (64%) in case of EURNAT, 1942 entries out of 2355 (82%) in case of SAM, and 71 entries out of 331 (21%) in case of NACC. No reconciliation is possible from procurement records.
45. Historical price was not indicated in 666 entries out of 2355 (28%) in case of SAM, and 435 entries out of 658 (69%) in case of EURNAT.

¹⁴ Southern Vision Systems Inc.

¹⁵ APAC:1479, ESAF:455, EURNAT:658, MID:521, NACC:331, RSO:369, SAM:2355, WACAF:1004

46. WACAF office did not provide asset location details in respect of 578 out of 1004 (58%) items recorded in asset list of 2022 year-end.
47. There is no grouping scheme for different items of assets in data pertaining to both the Headquarters and Regional Offices. There is only one field which captures the description of items, and an asset belonging to a particular class or category can be described in numerous ways. There is no scheme to link each item with defined categories and/or sub-categories. For example, if one wish to know about the number of printers in a particular office/location, it will be difficult to find out.
48. The guidelines on management of PPE require that all PPE above the threshold of CAD 300 should be recorded in PCL's asset database. Some of the Regional Offices also include those items in the asset data having values less than CAD 300. PCL stated that some staff in Regional Offices do so to enable tracking of the low value items. While tracking of low value items is important, these should never be mixed up with high value items. Adding low value items in asset records without entering corresponding values for bar codes, inventory number, purchase order numbers, asset locations, purchase price, etc. rather resulted in violating the data integrity of asset register data and was counter productive. In such a scenario, it is not possible to generate exception reports, conduct physical verification and exercise controls over fixed assets simply because it is not possible to segregate low value items from eligible fixed assets having value of more than CAD 300.
49. No continuity existed in bar code sequences. As barcodes were missing in respect of 1491 items out of 7172 of the RO lists, it was not possible to comprehensively check for this control in case of ROs. In ESAF list, six barcodes (BC15513, BC15516, BC15517, BC15518, BC15519, BC15520) were each linked to two laptops (of different purchase orders).
50. OIO also noticed duplicate bar code assignments in respect of items of Headquarters list. Seven pairs of items had the same barcode:

Barcode	Item 1	Item 2
HQ29611	Canon Projector	HP LaserJet M506N
HQ30017	AED Defibrillator	DELL EMCXC740XDENT
HQ32091	Visitor Chair	Dell Laptop
HQ32092	Cubicle 8.10K	Dell 5400 Latitude Laptop
HQ32093	Cubicle 8.10L	Dell 5400 Latitude Laptop
HQ32094	Visitor Chair	Dell 5400 Latitude Laptop
HQ32095	Rotating Chair	Dell 5400 Latitude Laptop

51. The PCL asset databases of both the regional offices and Headquarters do not contain information about items already written off. As a result, the audit tests for gaps, if any, in the sequence of bar codes could not be carried out.
52. The PCL unit's guidelines on management of PCL states that the asset lists of Regional Offices must be certified by the Director of the Regional Office before sending to PCL as part of the year-end activities/reconciliations. OIO can not provide an assurance about exercise of this important control in view of missing items from the lists (discussed in preceding section of this report) and significant data quality issues. With prevailing data quality issues, it will also be difficult to physically verify the assets from time to time.

Recommendation 3	Ensure data accuracy and completeness in the assets database
Priority	High
<p>PCL, in association with ICT, Regional Offices and other relevant stakeholders, should (i) carry out a house keeping exercise to ensure accuracy and completeness of data in IT asset lists of Regional Offices and Headquarters. ERP data of purchase orders should be cross-examined with IT asset data to ensure completeness of data, (ii) resolve the data quality issues before the final datasets are imported in IT Asset Management module of Service Now planned for implementation by the end of 2024.</p>	
<p>Closing criteria:</p> <p>Resolution of data completeness and data quality issues in the assets database.</p>	

Capitalization of assets

53. Following adoption of International Public Sector Accounting Standards (IPSAS), fixed assets have since been capitalized for financial reporting purposes, rather than expensing them when acquired. A fixed asset is defined as having a unit acquisition value of over CAD 3,000¹⁶ and a useful life of more than one year. Non-fixed assets have a unit acquisition value of less than CAD 3,000 and are recorded as an expense when acquired. The Fixed Asset (FA) module in Unit4 ERP is used for managing capitalization and amortization/depreciation of capitalized fixed assets.
54. FIN requests information from PCL, ICT, and other organizational units in December of each year for completing the year end activities and finalizing the financial statements. As discussed in preceding paragraphs, some items were missing from the PCL asset lists of 2022 year-end. A centralized purchase of network equipment (CISCO hardware, support, licenses, and UPS) worth CAD 605,253 (PO 12122481) was made by Headquarters in 2021 to augment organizational disaster recovery, and Regional Offices failed to include such high value items in their fixed asset lists. Nonetheless, FIN staff exercised due diligence and could detect this high value procurement and capitalized a portion of it (Asset ID 10001624) in 2022. FIN has been actively following up this item with ICT and its project manager to ensure that the project or assets are properly reflected in draft Financial Statements as of 31 Dec 2023.
55. OIO analysed the data of capitalized fixed assets as of October 2023. Few observations were shared with FIN:
- Symbiant tracker PRO (Asset ID 10001270) was capitalized in 2016 and is no more in operation. This item is 100% amortized since it was acquired. The status of this asset ID was "Active". *FIN stated that this item is being followed up with ICT to confirm whether this system is in operation now.*
 - The enterprise Dundas BI system was capitalized¹⁷ in 2018 with a value of CAD 216,780. The costs are not yet fully amortized, and the status of these assets is

¹⁶ CAD 5,000 for intangible assets

¹⁷ Asset IDs [REDACTED]

shown as "Active". Dundas BI system's last annual subscription support invoice was received in January 2022 and since 12 December 2022, the Dundas enterprise BI system is no more in operation. The status of capitalization of Dundas BI system should be reviewed by ICT.

Recommendation 4	Review of capitalized items
Priority	Medium
ICT should develop a formal process for conducting periodic reviews to assess the continued relevance of intangible assets and identify any potential obsolescence or impairments and inform FIN for appropriate action.	
Closing criteria: Adoption of a formal process to review the list of intangible items to inform FIN of any obsolescence and/or impairment.	

Utilization of intangible assets

56. PCL is responsible for maintaining assets data of all PPE in ICAO. However, PCL does not maintain records of intangible assets such as software licenses. None of the Regional Offices include intangible assets in their asset lists. Information about intangible assets is scattered in all Bureaus/units.
57. ICT maintains a portfolio of ICT applications in an Enterprise Architecture and Application Portfolio Management System¹⁸ but details of software components associated with each IT application are mostly missing.
58. ICT maintains a procurement plan for software licenses in an Excel sheet. There were instances of last-minute renewals of licenses because of oversight and absence of a centralized repository of intangible assets generating alerts for expiring licenses.
59. There is no formalized process to monitor usage of intangible assets even though more than 10% of the annual budget of ICT is spent on software licenses, renewals, and related purchases. ICT should specifically monitor to ensure that software licenses purchased for different Bureaus/Units/ROs are assigned to personnel and there are no cases of large numbers of unassigned and unutilized licenses. Such a monitoring will help in adjusting the volumes in subsequent purchases / renewals.
60. In some cases, as explained below, the high value intangible assets were put to sub-optimal use.
 - Enterprise version of Dundas BI system was purchased in 2018. The total financial implications in the period 2018-2022 of purchasing these licenses and annual maintenance/support costs was around CAD 480,000. There was no evidence to suggest that the BI licenses were optimally utilized. There are few enterprise level business use cases implemented using the Dundas BI system such as

¹⁸ LeanIX platform

intranet portal for staff leave and absence and CORSIA¹⁹ dashboards. This BI system was discontinued in 2022 after Power BI was adopted by ICAO as enterprise BI tool.

- ICAO purchased Okta²⁰ and Arcon²¹ licenses for implementation of Identity and Access Management (IAM) and Privileged Access Management (PAM) in 2022 at a cost of CAD 515,841. Additional SQL enterprise server licenses²² were purchased in connection with implementation of PAM. While InfoSec informed OIO that both IAM and PAM systems have been deployed in staging and production environments, ICT informed that albeit these were moved to production, alternative solutions within the Microsoft ecosystem were being explored. Okta and Arcon software licenses have not yet been utilized for the intended purposes.
61. ICT further informed that this situation existed because in the past IT architecture was not managed based on a holistic strategy, and instead largely driven by on-premises systems and a very diverse ecosystem, which are now being replaced by a cloud infrastructure and a more consolidated landscape based on the approved ICAO ICT Strategy and Action Plan 2022 - 2025. UNICC is working with ICAO's ICT on assessing IT architecture with Information Security requirements. With the adoption of the ICT Strategy, all investment proposals are now required to be backed up by a business case taking into consideration a holistic view, careful planning, evaluation, and governance by the IMC.
62. While reviewing the existing guidelines on PPE and developing administrative instructions for management of assets, ADB should clarify the roles and responsibilities for management of intangible assets (software licenses, etc.) and monitoring their utilization.

Disposal of assets

63. D/ADB has the authority to write-off equipment and supplies with a net book value (NBV) of CAD 10,000 or less. For items having book value of more than CAD 10,000, proposals are submitted to Secretary General through the Contracts Board.
64. The asset databases of both the regional offices as well as Headquarters do not contain information about items already written off. It is not possible for ICAO to analyse the historical items written off for any decision-making purpose e.g. determining average age of different categories of hardware items or for future procurement planning.
65. The procedure for disposal of organizational assets were documented by PCL²³ unit but this is in a draft stage and not formally approved. There are special procedures for computer and computer equipment, and it is stated that the preferred method of disposal of all computing is by recycling to a certified company with no cost to ICAO (paragraph 3.3²²). OIO is of the view that there is no rationale behind this special procedure. Old laptops/iPads/mobile devices and computer equipment like expensive CISCO routers and computer monitors will likely have a residual value, which can possibly be realized through

¹⁹ Carbon Offsetting and Reduction Scheme for International Aviation

²⁰ [REDACTED]

²³ PCL procedures for management of PPE (undated) are in draft stage. It is stated in the document that these procedures serve to implement the Administrative Instructions on management of PPE, however, there are no such Administrative Instructions and only guidelines that are documented by PCL.

a bidding process or buy back by respective vendors. The provisions for disposal of ICT assets should be reviewed by PCL to avoid any ambiguities and confusion.

66. The draft procedure further states that an asset after disposal should be retired from the database (paragraph 3.8). This action has often been misinterpreted and records/data of written-off items are deleted from the excel sheets rather than making their status as "inactive" and recording the values for written-off flag (True/False) and dates of writing-off. This was evident from the fact that asset databases of both the regional offices as well as Headquarters do not contain information about items already written off. This will need to be amply clarified while updating/reviewing the existing guidelines and procedures.
67. The data in Service Desk Plus shows that there are 215 workstations, 222 monitors, 246 windows workstations, 330 mobile devices, and 349 Windows servers in the Store. These may not be exact numbers because of data quality issues. It is also fully understood that ICT needs to maintain a ready stock of new items to take care of regular demands. Overall, however, the numbers seem to be on the much higher side and many items would be old and obsolete and due for sale/disposal. It was confirmed by PCL which already received the items to be disposed from ICT.

Recommendation 5	Disposal of old and obsolete items
Priority	High
<p>PCL should review the extent of old and obsolete ICT items in the store and should dispose the old and unserviceable stock. Options should be explored to sell or buy back of these old items by respective vendors.</p>	
<p>Closing criteria:</p>	
<p>Formal review of old stock and disposal of obsolete and unserviceable items.</p>	

Physical verification of assets

68. The guidelines on PPE provide that a physical verification of assets will be taken every three years to ensure adequate control over property. However, there is no guidance on documenting the process of periodic asset count process. The process needs to spell out who will conduct the count, how this will be done, the timelines as well as the documentation of the results (signed count tallies, reconciliation reports, etc.).
69. In case of Regional Offices, it is possible to delete a record from the excel sheet used to maintain the IT asset data without any audit trail. Bar code sequencing is not maintained because items that have been written off are deleted from data. Therefore, it is practically not possible to carry out any meaningful physical verification. Given the status of data quality of the asset lists of Regional Offices, any physical verification exercise can not possibly serve the intended purpose.
70. In Headquarters, the latest physical verification exercise was initiated in November 2023.

71. ICAO would benefit from introduction of a comprehensive and authoritative Administrative Instruction (Refer Recommendation 1) encompassing detailed guidelines and roles and responsibilities for physical verifications of assets from time to time.

ANNEX 1: DEFINITION OF AUDIT TERMS

Audit Ratings

In providing an overall assessment of the results of the audit, OIO uses the following standardized audit rating definitions:

Audit Assessment	Definition
Effective	Controls evaluated are adequate, appropriate, and effective to provide reasonable assurance that risks are being managed and objectives should be met.
Some Improvement Needed	A few specific control weaknesses or areas for improvement were noted; generally however, controls evaluated are adequate, appropriate, and effective to provide reasonable assurance that risks are being managed and objectives should be met.
Major Improvement Needed	Several key control weaknesses were noted and/or several areas of strategic/high importance were identified where significant improvements can be made to increase efficiency and effectiveness.
Unsatisfactory	Controls evaluated are not adequate, appropriate, or effective to provide reasonable assurance that risks are being managed and objectives should be met.

Internal control is defined as a process effected by senior management and staff, designed to provide reasonable assurance regarding the achievement of objectives relating to operations, reporting and compliance objectives. Whilst internal control provides reasonable (but not absolute) assurance of achieving organizational objectives, limitations may result from:

- suitability of objectives established as a precondition to internal control;
- reality that human judgment in decision making can be faulty and subject to bias;
- breakdowns can occur because of human failures such as simple errors;
- ability of management to override internal control;
- ability of management, other staff, and/or third parties to circumvent controls through collusion;
- external events beyond the organization's control.

Priority of Audit Recommendations

The audit recommendations in this report are categorized according to priority as a guide to management in addressing the issues raised. The following categories are used:

High: recommendations, which address significant and/or pervasive deficiencies or control weaknesses, or areas where significant improvements can be made.

Medium: recommendations, which address important deficiencies or control weaknesses, or areas where some improvements can be made.

Low: suggestions, which represent best practice, or general opportunities for improvement.

ANNEX 3: MANAGEMENT ACTION PLAN

Ref	Recommendation	Priority Rating	Accepted (Y/N)	Management Comments	Agreed Actions	Office/ Section Responsible	Target Date
1.	ADB should develop authoritative administrative instructions on asset management including aspects but not limited to (i) roles and responsibilities, (ii) automated systems and procedures, (iii) process of reconciliation of asset data with automated alerts from new ERP and ensuring data quality checks, (iv) physical verification of assets, (v) utilization of assets, and (vi) efficient disposal of old and obsolete items.	High		<p>The present procedures guide and instructions on Asset Management will be revised. A Property, Plant and Equipment (PPE) specialist will be reporting to duty on 25 March 2024 to assist ADB/SSG/PCL in drafting a new Administrative Instructions and procedures guide on Asset Management. In addition, an operational instruction will be developed regarding the current processes including items (ii), (iii), (iv) and (vi) as part of Recommendation 1.</p> <p>Upon implementation of ServiceNow, all tangible IT assets will be recorded and tracked. The new AIs and procedure will take into consideration the operationalization and automation of any procedure. Going forward, subsequent actions will be taken to review the Ais and operational instructions based upon the operationalization of QBS and ServiceNow.</p>	PCL in coordination with ICT will develop Administrative Instructions on Asset Management encompassing the aspects mentioned under Recommendation 1.	ADB (SSG/PCL and IMS/ICT)	30 September 2024

Ref	Recommendation	Priority Rating	Accepted (Y/N)	Management Comments	Agreed Actions	Office/ Section Responsible	Target Date
2.	ADB/PCL, in close collaboration with FIN, ICT and PRO, should ensure that there are built-in functionalities in the design of asset module of new enterprise resource planning system to facilitate automated reconciliation of asset data. The new ERP should provide for alerts based on processing of invoices and/or goods receiving notes.	High	Y	The ERP's asset module (Quantum) has built-in functionalities to facilitate the management of assets from PO/Invoice/Receipt/. The implementation of this recommendation is on-going.	PCL in coordination with ICT will closely monitor the deployment of the built-in functionalities in the new ERP's asset module including the availability of alerts and reports that will support the effective management of assets. The PPE specialist will support the testing phase of the asset module.	ADB (SSG/PCL)	31 December 2025
3.	PCL, in association with ICT, Regional Offices and other relevant stakeholders, should (i) carry out a house keeping exercise to ensure accuracy and completeness of data in IT asset lists of Regional Offices and Headquarters. ERP data of purchase orders should be cross-examined with IT asset data to ensure completeness of data, (ii) resolve the data quality issues before the final datasets are imported in IT Asset Management module of Service Now planned for implementation by the end of 2024.	High	Y	Actions will be taken in conjunction with the development of AIs and operational instructions as outlined above under Recommendation 1.	1) A full review of physical assets will be conducted in HQ and RO to ensure complete data on IT assets. 2) Resolve any data quality issues following a full review of physical assets prior to the data migration to Quantum's Asset management module.	ADB (SSG/PCL in coordination with IMS/ICT and ROs)	30 June 2025

Ref	Recommendation	Priority Rating	Accepted (Y/N)	Management Comments	Agreed Actions	Office/ Section Responsible	Target Date
4.	ICT should develop a formal process for conducting periodic reviews to assess the continued relevance of intangible assets and identify any potential obsolescence or impairments and inform FIN for appropriate action.	Medium	Y	<p>The revision of intangible assets (software licenses) is an ongoing and current exercise. Software licenses inventory is kept at the minimum level required to ensure adequate and fluid operations among users.</p> <p>The current process for the maintenance of software licenses is a repeatable, although not documented, process.</p>	Enhance the current LeanIX tool to encompass software license costs, document the review process and incorporate in the operational instruction (See action under Recommendation 1 above).	ADB (IMS/ICT)	30 September 2024
5.	PCL should review the extent of old and obsolete ICT items in the store and should dispose the old and unserviceable stock. Options should be explored to sell or buy back of these old items by respective vendors.	High	Y	This aspect is included in the review that will be undertaken with the support of a PPE specialist.	The new AIs mentioned above under Recommendation 1 will include policy and procedures of asset disposal.	ADB (SSG/PCL)	30 September 2024