INTERNAL AUDIT DIVISION

REPORT 2016/115

Audit of the management of software licenses in the Office of the United Nations High Commissioner for Refugees

Overall results relating to the effective management of software licenses were initially assessed as partially satisfactory. Implementation of five important recommendations remains in progress

FINAL OVERALL RATING: PARTIALLY SATISFACTORY

12 October 2016
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AUDIT REPORT

Audit of the management of software licenses in the Office of the United Nations High Commissioner for Refugees

I. BACKGROUND

1.   The Office of Internal Oversight Services (OIOS) conducted an audit of the management of software licenses in the Office of the United Nations High Commissioner for Refugees (UNHCR).

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 objective of software license management is to manage, control, and protect UNHCR's software assets, including management of the risks arising from the use of software assets. Proper management of software licenses helps to minimize risks by ensuring that: licenses are used in compliance with licensing agreements and deployed cost-effectively; software purchasing and maintenance expenses are properly controlled; legal agreements that accompany procured software licenses are adhered to; and purchase of unnecessary licenses is avoided.

4.   According to the UNHCR Operational Guidelines for Budgeting and Procurement of ICT Equipment and Services (UNHCR/OG/2015/6), the Division of Information Systems and Telecommunications (DIST) will make provisions for standard corporate software licenses, such as operating systems, desktop productivity software, security software, registration software, the enterprise resource planning system (ERP), and the results-based management system.

5.   The Vendor Management Unit in DIST is responsible for acquisition and ensuring cost effectiveness of software licenses at UNHCR. This includes overseeing public tenders for ICT goods and services, the vendor review and negotiation process, and interaction with the Legal and Supply functions within UNHCR. The staff in the Cross Functional Unit of the Customer Support Service in DIST maintains the license register and assists with the procurement of licenses and tracking/monitoring of the use of licenses.

6.   The total value of purchase orders processed for software licenses and maintenance for DIST and other UNHCR Divisions between 1 January 2014 and 31 December 2015 amounted to $19 million.

7.   Comments provided by UNHCR are incorporated in italics.

II. OBJECTIVE AND SCOPE

8.   The audit was conducted to assess the adequacy and effectiveness of UNHCR governance, risk management and control processes in providing reasonable assurance regarding the **effective management of software licenses**.

9.   The audit was included in the OIOS 2016 risk-based internal audit work plan for UNHCR because of the potential risk of disruption to UNHCR programmes if the software licensing needs are not adequately planned and the licensing requirements are not complied with.

10.   The key control tested for this audit was ICT support systems. For the purpose of this audit, OIOS defined this key control as one that provides reasonable assurance that UNHCR's software licenses meet its operational needs and are used in accordance with relevant licensing agreements.

11.   The key control was assessed for the control objectives shown in Table 1.

12.   OIOS conducted the audit from February to June 2016. The audit covered the period from 1 January 2014 to 31 December 2015. The audit was conducted at the UNHCR Headquarters in Geneva. In addition, teleconferences were held with DIST staff members based in Amman and Budapest.

13.   OIOS conducted an activity-level risk assessment to identify and assess specific risk exposures, and to confirm the relevance of the selected key control 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

14.   The UNHCR governance, risk management and control processes examined were initially assessed as **partially satisfactory[1]** in providing reasonable assurance regarding the **effective management of software licenses**. OIOS made five recommendations to address issues identified.

15.   UNHCR had adequate arrangements in place for software maintenance and updates, authorization of installation of software products, and corporate governance processes for software management. However, there was a need for UNHCR to: (a) implement an effective software inventory and license management process; (b) ensure that the number of licenses procured is commensurate with the staffing and the devices deployed; (c) review and revise guidance to ensure that software licenses are used in accordance with the respective licensing agreements; and (d) ensure that field operations acquire software assets in a coordinated and competitive manner and in consultation with UNHCR Headquarters.

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

Table 1
Assessment of key control

Business objective	Key control	Control objectives			
		Efficient and effective operations	Accurate financial and operational reporting	Safeguarding of assets	Compliance with mandates, regulations and rules
Effective management of software licenses	ICT support systems	Partially satisfactory	Partially satisfactory	Partially satisfactory	Partially satisfactory
FINAL OVERALL RATING: PARTIALLY SATISFACTORY					

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[1] A rating of **"partially satisfactory"** means that important (but not critical or pervasive) deficiencies exist 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.

ICT support systems

<u>UNHCR needed to implement an effective software inventory and license management process</u>

17.   UNHCR ICT Security Operational Guidelines specify that responsible UNHCR managers should ensure that all ICT assets, such as software, information files, ICT equipment and ICT services, are clearly identified and their inventory drawn up and maintained. The International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) form the specialized system for worldwide standardization. The ISO/IEC Standard 19770-1:2012(E) requires all software products to be listed in the asset inventory where they are used and where the original media are kept, together with the relevant licensing information. The Standard further requires that adequate procedures are in place to maintain accuracy of the inventory and that stock checks are carried out at least annually to account for and protect all software assets.

18.   DIST was currently maintaining a spreadsheet based inventory register for software assets procured and used at the corporate level. The recorded information comprised of the vendor name, license name and type, quantity, pricing method, part number, license key, serial number and location of the original media, and the internet links to download the software/patches/updates from the vendor's website.

19.   Audit tests on the inventory register recordings and the software procurement data extracted from Managing for Systems, Resources and People (MSRP), the UNHCR enterprise resource planning system, identified some gaps. The combined value of assets omitted from the inventory register exceeded $1 million. The register did not include, *inter alia*, software assets purchased or their maintenance paid for by Headquarters but used only by Field Offices (example: BioRegistrator – used in at least 10 field locations) and software assets procured as a service by Headquarters (example: FleetWave). Furthermore, the inventory register covered only software assets procured at Headquarters and did not include software purchases totaling $2 million made by 42 country operations in 2014 and 2015.

20.   To enhance the management of software assets, DIST had procured in 2012 a service management tool to cover 10,000 nodes, along with the cost of related professional services, for $444,000. DIST paid another $510,000 in support costs for the service management tool for the period from 2012 to 2015, taking the total payments to $954,000, of which DIST estimated that $104,000 (or about 10 per cent) related to the software license management functionality. The service management tool was considered critical for the effective deployment and management of the new infrastructure that was being rolled out at that time.   In addition to the software license and software usage management capabilities, the service management tool provided the functionality for operating system and software deployment, patch management, imaging and user management, discovery, inventory, power management, and remote control.

21.   However, during the period from 2012 to 2015, the service management tool's software license management functionality was not effectively used. DIST explained that additional resources required for its productive use, such as professional services and investment in enhanced reporting, were not available. Consequently, DIST relied on alternative measures, such as using key management services and the above-mentioned spreadsheet based inventory register, for its license management processes. These alternative measures, however, had limitations.

22.   DIST acknowledged the gaps in keeping the license register updated but explained that the primary focus was first to record all the significant value contracts. DIST also added that efforts were ongoing to add other products to the register.

23.   Failure to account for all software purchases could prevent UNHCR from ensuring compliance with software agreements and identifying redundant software purchases or other cost-saving opportunities. The cited control weaknesses occurred because UNHCR had not effectively implemented processes to discover and track all software licenses and conduct the software license inventory process.

> **(1) The UNHCR Division of Information Systems and Telecommunications should implement an effective software inventory and license management process to discover and track all software licenses deployed on the devices connected to the UNHCR network.**
>
> *UNHCR accepted recommendation 1 and stated that DIST would implement it.* Recommendation 1 remains open pending receipt of evidence of implementation of a license management process that accounts for all software licenses procured and deployed across the Organization.

<u>There was a need to ensure that the number of licenses procured is commensurate with the staffing and the devices deployed</u>

24.   ISO/IEC Standard 19770-1:2012(E) on software asset management requires reconciliations to be undertaken at least quarterly between effective licenses owned and licenses required for software used, taking into account the way licensing requirements are determined as per license terms and conditions. The Standard further requires that organizations undertake license optimization consisting of cost-benefit analysis of drivers of licensing costs, and a periodic review (at least annually) of whether software and related assets are deployed in the most cost-effective manner possible, culminating in recommendations for possible improvement.

(a) Desktop licenses

25.   UNHCR procured devices (laptops and desktops) that contained the basic operating system installed by the original equipment manufacturer. DIST installed a UNHCR standard copy of the operating system and desktop productivity software on all these devices before they were connected to the UNHCR network. UNHCR had a corporate level agreement with a vendor for the procurement/upgrade of licenses for the operating systems and desktop productivity software. This agreement provided UNHCR with the flexibility to purchase incremental licenses once a year after taking into account the real increase in the number of qualified devices (laptops and desktops) and users during the previous 12 months.

26.   UNHCR had paid $1.5 million for software licenses for 10,500 devices for 2015, which was only slightly higher than the 10,200 devices registered in the UNHCR directory services. OIOS noted that satisfactory processes existed in DIST to assess and provide for the additional license needs in accordance with the changes in the staffing and the number of devices. However, additional audit tests performed to obtain assurance on the 10,200 devices registered in the directory services by correlating devices and user data from other sources disclosed the following inconsistencies:

- The number of devices recorded in the service management tool was 13,897 or almost 3,700 more than the number of devices registered in the directory services. Old, obsolete and unusable devices continued to exist in the service management tool but were not registered in the directory services. DIST had not removed them from the service management tool.

- UNHCR operations in 23 countries with 550 staff members had not implemented directory services or did not plan for such implementation.

- UNHCR workforce at the end of 2015 was 12,104 (including about 3,075 affiliated work force personnel but excluding 3,156 staff members, such as drivers, who were not provided with individual desktop or laptop computers). However, 19,269 users were registered in the directory services, which was significantly higher than the official staffing levels. DIST explained that the user listing needed a clean-up and added that at least 6,000 entries in the directory services (such as staff members no longer with UNHCR) needed to be removed.

27. These inconsistencies, if not rectified, could result in an incorrect assessment of the overall licensing requirements. They arose because DIST had not implemented procedures to periodically monitor the recordings in the directory services and the service management tool and to investigate data discrepancies between them.

> **(2) The UNHCR Division of Information Systems and Telecommunications should strengthen controls over software license optimization by: (a) carrying out a thorough review of the users and devices recorded in the directory services and the service management tool and ensure that the information registered therein reflects the actual staffing numbers and assets in use; (b) remove old, unusable and obsolete devices from the service management tool; and (c) reassess the adequacy of the licensing requirements for desktop productivity software based on the outcome of the recommended review exercise.**
>
> *UNHCR accepted recommendation 2 and stated that DIST would implement it.* Recommendation 2 remains open pending completion of the review and clean-up of the users and devices recorded in the directory services and the service management tool.

(b) Server systems

28. OIOS observed that satisfactory processes existed for the procurement of licenses for its ERP and electronic document management systems - two key corporate systems at UNHCR - in line with the requirements for expanding operations.

29. However, inconsistencies existed regarding the procurement of licenses for the proGres registration system. In 2014, 150 server licenses and 3,400 user licenses were procured at a total cost of $400,000 as part of the proGres version 4 project when the system was still being developed. Consequently, the licenses paid for in 2014 were not used. DIST subsequently identified this anomaly and renegotiated the total license cost to $430,000 for a three-year period starting April 2015 which amounted to $40,000 for 2015-16, $143,000 for 2016-17, and $247,000 for 2017-18. The bulk of these costs was for basic user licenses that amounted to $14,000 (200 users), $93,000 (1,320 users) and $172,000 (2,460 users) respectively. For the first year, 116 of the 200 licenses were utilized while, for the second year, 400 of the 1,320 licenses had been used and the remaining licenses needed to be used by 31 March 2017. Should the proGres implementation strategy fail or not proceed as planned and should the number of users not match the licenses paid for, UNHCR would be exposed to additional waste of resources. DIST explained that it was exploring options to use some of these licenses in other areas and added that it had developed a prototype for an education management system.

30. This situation arose because of delays in the proGres version 4 rollout due to scope variations and budget constraints.

> **(3) The UNHCR Division of Information Systems and Telecommunications, in coordination with the Division of Programme Support and Management, should ensure that the number of licenses required for proGres version 4 is aligned with the system development and related rollout strategies and that the potential financial implications**

> **of over/under licensing are periodically assessed if the system rollout strategy undergoes modification.**
>
> *UNHCR accepted recommendation 3 and stated that DIST had already implemented the recommended processes and would provide evidence of licensing requirements and reconciliations.* Recommendation 3 remains open pending receipt of a report on the actual licenses put to use in comparison to procured numbers for the proGres version 4 project.

<u>There was a need to develop and implement guidance to ensure that software licenses are used in accordance with the respective licensing agreements</u>

31.   The UNHCR ICT Security Operational Guidelines require DIST, in close coordination with responsible UNHCR managers, to develop procedures to guide UNHCR offices and staff on their obligations derived from software licensing agreements. Further, ISO/IEC standard 19770-1:2012(E) requires software licenses to be used in accordance with the terms and conditions attached to their usage.

32.   On 1 June 2016, DIST promulgated standard operating procedures on ICT Services - Asset Management. These procedures included a section on Software License Management that referred to the need to comply with licensing requirements. However, the manner in which compliance with licensing requirements would be secured and achieved was not adequately explained. OIOS therefore assessed that DIST had not put in place appropriate procedures, in coordination with UNHCR managers, for ensuring compliance with the terms and conditions of software licensing agreements. Independent software licensing reviews carried out by two major software vendors in 2013-2014 for their software products purchased by UNHCR did not identify any violations of the terms and conditions of their usage. However, they identified variations between the number of licenses needed and actually deployed, and UNHCR was subsequently invoiced for the differential amounts ($169,000 for both) as part of the true-up exercise.

33.   As noted in paragraph 19 of this report, UNHCR country operations purchased software worth $2 million in 2014 and 2015 which were not part of the centrally maintained inventory. Since DIST was not tracking or monitoring such software, it was also not in a position to ensure that UNHCR staff in the field would use the purchased software in accordance with the licensing requirements.

34.   These shortcomings exposed UNHCR to the risk of having to make financial payouts if licensing compliance audits were undertaken by vendors.

> **(4) The UNHCR Division of Information Systems and Telecommunications should review and revise the procedures to guide UNHCR offices and staff in terms of their obligations derived from software licensing agreements.**
>
> *UNHCR accepted recommendation 4 and stated that DIST would implement it.* Recommendation 4 remains open pending revision of the procedures that guide UNHCR offices in terms of their obligations derived from software licensing agreements.

<u>There was need for UNHCR field operations to acquire software assets in a coordinated and competitive manner and in consultation with Headquarters</u>

35.   The 2015 Operational Guidelines for Budgeting and Procurement of ICT Equipment and Services stress the importance of ICT procurement planning for the acquisition of new and the replacement of obsolete ICT assets. According to these guidelines, the ICT procurement plan should be shared with the Regional ICT Officer or the Customer Support Service of DIST to ensure compliance with established

ICT standards, and also with the Division of Emergency, Security and Supply (DESS) for possible integration into the global ICT sourcing strategy.

36.   OIOS review of the procurement data for 2014 and 2015 identified that UNHCR country operations did not adequately coordinate their software purchases with DIST resulting in non-competitive and expensive procurement.   Five operations handling the Iraqi and Syrian situations spent about $0.6 million on standard software products, such as a server operating system, database management systems and software for network devices. These software items should have been procured centrally by DIST using frame agreements or corporate level agreements. For example, the UNHCR Representation in Lebanon procured server products, including licenses, for $105,000 for their local needs, and the price paid was $15,000 more than what DIST had previously paid for the same items.

37.   The review also showed that 11 operations (Côte d'Ivoire, Israel, Turkey, Russia, Thailand, Bosnia and Herzegovina, Italy, Lebanon, Jordan, Indonesia and Ukraine) purchased licenses worth $19,000 for various software products. These licenses were also purchased by UNHCR centrally, and need not have been separately purchased at these locations. In some cases, the prices paid by these offices were higher than what DIST would have paid under the relevant corporate agreements.

38.   The above situation occurred because the UNHCR field operations purchased the standard software products locally without coordinating with DIST or the Regional ICT Officer. This resulted in expenditures that could have been avoided with better planning and exposed UNHCR to the risk of acquiring excess numbers of licenses over and above operational requirements.

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(5) The UNHCR Division of Information Systems and Telecommunications (DIST), in coordination with the Regional Bureaux, should remind UNHCR field operations that they are required to coordinate their acquisition of software licenses with DIST and use frame or corporate agreements to procure standard software products locally.

UNHCR accepted recommendation 5 and stated that DIST would implement it.   Recommendation 5 remains open pending receipt of the revised operational guidelines incorporating the requirement for the field operations to coordinate their acquisition of software licenses with DIST.

Satisfactory arrangements were implemented for software maintenance and updates

39.   Best practices on software acquisition call for UNHCR to develop a strategy and a plan for the maintenance of software applications. Furthermore, in the event of major changes to existing systems that result in a significant change to current designs and/or functionality, UNHCR should follow a similar development process as that used for the development of new systems.

40.   UNHCR regularly paid for software assurance and maintenance costs that provided it with the right to download updates/fixes and to upgrade to a higher version of the software. For instance, DIST paid for the maintenance costs of all corporate software products and thus retained the right to upgrade them to their latest version. The upgrade to the systems was systematically carried out after an elaborate assessment and a thorough project management process. OIOS concluded that UNHCR had satisfactory arrangements in place for software maintenance and updates.

Satisfactory controls existed for authorization of installation of software

41.   UNHCR ICT Security Operational Guidelines state that DIST, in close coordination with UNHCR managers, will put in place appropriate access controls to ICT systems to ensure access is available only to current staff members (or authorized individuals or entities) who require it in the course

of their official duties and that the rights of user access take proper account of the type and level of sensitivity of the information concerned.

42.   OIOS review indicated that only UNHCR validated and managed applications could be installed on UNHCR procured devices. Furthermore, users were not granted local administrative rights on their desktop/laptop computers and were effectively disabled from installing unmanaged applications (downloaded applications from internet and other personal software) on UNHCR devices. When users needed a modification to this established requirement, they were required to raise an incident through the Global Service Desk in DIST. Each such request was assessed and approved on the merits of the business requirements. Over 300 requests for administrative access (for a variety of reasons) to devices were received from the users and recorded by the Global Service Desk. OIOS review of 15 of these incidents confirmed that the process to grant administrative access to devices was functioning satisfactorily.

<u>Satisfactory corporate governance processes were in place for software management</u>

43.   ISO-IEC 19770-1 requires that responsibility for corporate governance of software and related assets is formally recognized. An assessment of the risks associated with software and related assets and management-specified mitigation approaches needs to be documented, updated at least annually, and approved by the corporate board or equivalent body.

44.   Whereas UNHCR had in place robust policies for asset management, these dealt mainly with physical assets. A specific regulatory framework for software asset management did not exist during the period covered by the audit. There were only references to software assets in two operational guidelines issued in 2015. Therefore, roles and responsibilities relating to software asset management were not adequately delineated. This contributed to many of the shortcomings identified in this report regarding the management and optimization of the purchase, licensing, deployment, maintenance and utilization of software assets within UNHCR. However, the standard operating procedures on ICT Services - Asset Management, issued on 1 June 2016 and referred to in paragraph 36 above, covered the following: documentation of key information on license agreements; software deployment; discovery and inventory of installed software through utilization of adequate tools and methods; and reconciliation of license data with software inventory to identify unauthorized installs, unfulfilled entitlements, and installs exceeding inactivity threshold. Therefore, OIOS considers that the pressing need for instructions has been partly fulfilled and is not raising a recommendation. The effectiveness of implementation of the new procedures will be assessed in future audits.

IV.   ACKNOWLEDGEMENT

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

(*Signed*) Eleanor T. Burns
Director, Internal Audit Division
Office of Internal Oversight Services

STATUS OF AUDIT RECOMMENDATIONS

Audit of the management of software licenses in the Office of the United Nations High Commissioner for Refugees

Recom. no.	Recommendation	Critical[1]/ Important[2]	C/ O[3]	Actions needed to close recommendation	Implementation date[4]
1	The UNHCR Division of Information Systems and Telecommunications should implement an effective software inventory and license management process to discover and track all software licenses deployed on the devices connected to the UNHCR network.	Important	O	Submission to OIOS of evidence of implementation of a license management process that accounts for all software licenses procured and deployed across the Organization.	30 June 2017
2	The UNHCR Division of Information Systems and Telecommunications should strengthen controls over software license optimization by: (a) carrying out a thorough review of the users and devices recorded in the directory services and the service management tool and ensure that the information registered therein reflects the actual staffing numbers and assets in use; (b) remove old, unusable and obsolete devices from the service management tool; and (c) reassess the adequacy of the licensing requirements for desktop productivity software based on the outcome of the recommended review exercise.	Important	O	Submission to OIOS of evidence of completion of the review and clean-up of the users and devices recorded in the directory services and the service management tool.	31December 2016
3	The UNHCR Division of Information Systems and Telecommunications, in coordination with the Division of Programme Support and Management, should ensure that the number of licenses required for proGres version 4 is aligned with the system development and related rollout strategies and that the potential financial implications of over/under licensing are periodically assessed if the system	Important	O	Submission to OIOS of a report on the actual licenses put to use in comparison to procured numbers for the proGres version 4 project.	31 March 2017

[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.

[3] C = closed, O = open

[4] Date provided by UNHCR in response to recommendations.

STATUS OF AUDIT RECOMMENDATIONS

Audit of the management of software licenses in the Office of the United Nations High Commissioner for Refugees

Recom. no.	Recommendation	Critical[1]/ Important[2]	C/ O[3]	Actions needed to close recommendation	Implementation date[4]
	rollout strategy undergoes modification.				
4	The UNHCR Division of Information Systems and Telecommunications should review and revise the procedures to guide UNHCR offices and staff in terms of their obligations derived from software licensing agreements.	Important	O	Submission to OIOS of the revised procedures that guide UNHCR offices in terms of their obligations derived from software licensing agreements.	31 March 2017
5	The UNHCR Division of Information Systems and Telecommunications (DIST), in coordination with the Regional Bureaux, should remind UNHCR field operations that they are required to coordinate their acquisition of software licenses with DIST and use frame or corporate agreements to procure standard software products locally.	Important	O	Submission to OIOS of the revised operational guidelines incorporating the requirement for the field operations to coordinate their acquisition of software licenses with DIST.	31 March 2017

APPENDIX I

Management Response

Management Response

Audit of the management of software licenses in the Office of the United Nations High Commissioner for Refugees

Rec. no.	Recommendation	1. Critical[1]/ Important[2]	Accepted? (Yes/No)	Title of responsible individual	Implementation date	Client comments
1	The UNHCR Division of Information Systems and Telecommunications should implement an effective software inventory and license management process to discover and track all software licenses deployed on the devices connected to the UNHCR network.	Important	Yes	Deputy Director, Customer Support Service	Q2 2017	DIST will implement the recommendation.
2	The UNHCR Division of Information Systems and Telecommunications should strengthen controls over software license optimization by: (a) carrying out a thorough review of the users and devices recorded in the directory services and the service management tool and ensure that the information registered therein reflects the actual staffing numbers and assets in use; (b) remove old, unusable and obsolete devices from the service management tool; and (c) reassess the adequacy of the licensing requirements for desktop productivity software based on the outcome of the recommended review exercise.	Important	Yes	Deputy Director, ICT Operations Service	Q4 2016	DIST will implement the recommendation.

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[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 the management of software licenses in the Office of the United Nations High Commissioner for Refugees

Rec. no.	Recommendation	1. Critical[1]/ Important[2]	Accepted? (Yes/No)	Title of responsible individual	Implementation date	Client comments
3	The UNHCR Division of Information Systems and Telecommunications, in coordination with the Division of Programme Support and Management, should ensure that the number of licenses required for proGres version 4 is aligned with the system development and related rollout strategies and that the potential financial implications of over/under licensing are periodically assessed if the system rollout strategy undergoes modification.	Important	Yes	Deputy Director Business Relationship Management Service	Q1 2017	The UNHCR Division of Information Systems and Telecommunications has already implemented the recommended processes and will provide evidence of licensing requirements and reconciliations.
4	The UNHCR Division of Information Systems and Telecommunications should review and revise the procedures to guide UNHCR offices and staff in terms of their obligations derived from software licensing agreements.	Important	Yes	Deputy Director, Customer Support Service	Q1 2017	DIST will implement the recommendation.
5	The UNHCR Division of Information Systems and Telecommunications (DIST), in coordination with the Regional Bureaux, should remind UNHCR field operations that they are required to coordinate their acquisition of software licenses with DIST and use frame or corporate agreements to procure standard software products locally.	Important	Yes	Deputy Director, Customer Support Service	Q1 2017	DIST will implement the recommendation.