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To: Ms. Jane Holl Lute, Assistant Secretary-General
Office of Mission Support
Department of Peacekeeping Operations

From: Patricia Azarias, Director
Internal Audit Division I, OIOS

P. Azarias

Subject: **OIOS Audit No. AC2003/600/01: Review of the Department of Peacekeeping Operations' Information and Communications Technology function**

I am pleased to present herewith our final report on the subject audit. I would like to thank you for the detailed comments which you sent us in your communication of 27 April 2004. We have taken cognizance of these comments and have made modifications to our draft report of 9 March 2004 as appropriate.

This report makes 14 recommendations. Based on the comments received, we have closed recommendation 4 in the OIOS Recommendations Database. The other recommendations will remain open pending the receipt of documentation supporting the actions taken by DPKO to implement them, or completion of the implementation actions as noted in the text of the report.

IAD is assessing the overall quality of its audit process. I therefore kindly request that you consult with your managers who dealt directly with the auditors and complete the attached client satisfaction survey form at your earliest convenience.

I would like to thank you and your staff for the assistance and co-operation provided to the auditors.

Copies to:

Under-Secretary-General, DPKO
UN Board of Auditors
Programme Officer, OIOS

United Nations
OFFICE OF INTERNAL OVERSIGHT SERVICES
Internal Audit Division

Audit subject:	Review of the Department of Peacekeeping Operations' Information and Communications Technology function
Audit No.:	AC2003/600/01
Report date:	18 June 2004
Audit team:	Leonard Gauci, Auditor-in-Charge

OIOS review of DPKO's Information and Communications Technology function

Executive Summary

OIOS agrees with the nature and scope of services currently provided by DPKO's Communications and Information Technology Services (CITS). It takes note of the efforts made by CITS to move away from numerous application systems and databases distributed in the various missions towards centralized and integrated systems. OIOS agrees with this policy and that of introducing web-based technologies. However, an overall strategy for information and communications technology (ICT) which supports the Department's operations needs to be developed and implemented. OIOS is particularly concerned that there is still no published Information Management Strategy for the department since a meaningful ICT strategy can only be developed once the Information Management Strategy is in place.

The lack of a clear ICT strategy and evaluation techniques, and the absence of a quantifiable return on investment have led to the development of systems, the implementation of which would have been questionable on a cost/benefit justification. Furthermore, the fact that systems have tended to be developed on a piecemeal basis has made it difficult to assess and compare the cost of developing a system against the option of purchasing an ERP package.

OIOS agrees with DPKO's policy of using staff contracted by the United Nations International Computing Centre (ICC) to provide technical support services in the areas of applications development and support, network support and operations support. In its opinion, however, no new application systems should be commissioned until the ICT strategy has been finalized and approved, and the criteria for new systems, including tangible returns on investment, have been clearly defined. All proposed systems should be subject to an evaluation between systems development and a package solution. The scope of a software development project should be defined at the outset and the criteria for systems delivery and acceptance should be incorporated in the software development agreements.

Capacity building should be based on an ICT strategy that is linked to the goals of the department, and to quantifiable returns on investment. OIOS acknowledges the difficulty in undertaking long-term planning due to the unpredictability inherent in the Department's operations. However, the move towards Enterprise systems and the outsourcing to ICC means that this should not affect planning for systems development resources.

The Department should nominate its representatives on the Project Review Committee of the Secretariat's ICT Board. It should also take immediate steps to set up an internal ICT committee with user representation to oversee the ICT function.

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I. INTRODUCTION

1. In February 2002, the General Assembly requested the Secretary-General to entrust the Office of Internal Oversight Services with the task of conducting an evaluation of the impact of the recent restructuring of the Department of Peacekeeping Operations on its backstopping of peacekeeping operations performance, and the impact on the efficient and effective use of the resources of the Department, and to report to the General Assembly at its resumed session.[1] Information and communications technology was one of the functions covered under this review.

2. The audit was conducted between September 2003 and January 2004 in accordance with the standards for the professional practice of internal auditing in United Nations organizations, and included such tests and other procedures as the auditors deemed necessary under the circumstances.

3. OIOS' report on the Evaluation of the impact of the recent restructuring of DPKO being presented to the General Assembly contains issues that are mainly of a strategic nature. For the sake of consistency these issues are further discussed in this report together with others that are of an operational nature and have not been included in the report to the General Assembly.

II. AUDIT OBJECTIVE AND METHODOLOGY

4. The objective of the audit was to take stock of improvements in information technology management within DPKO. To achieve this objective, OIOS evaluated actions taken by DPKO to develop and implement a comprehensive information technology systems strategy that integrates field missions with the Secretariat's overall information and communication technology strategy, and for developing and implementing a strategic plan for building and sustaining the Department's information technology capability. It assessed whether the diverse projects are concurrently implemented and strategically aligned and whether the plan for achieving strategic goals in the area of information technology has been developed, approved, implemented and is being managed efficiently.

5. An assessment was made of the information systems currently being used and their interaction with the field missions. OIOS examined the outcome of the measures envisaged for constructing corporate strategic databases and providing management with decision support information for tactical and strategic analyses. It looked at the implementation of programmes to maintain the system in line with the expanding needs of administrative and logistic activities in the field.

6. The review was based on a series of questionnaires and interviews with key personnel involved in the Department's information and communications technology function, including staff on contract from the United Nations International Computing

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[1] A/RES/56/241 of 01.02.02, para. 18

Centre. The work carried out at headquarters was supplemented by a site visit to the United Nations Logistics Base in Brindisi.

III. FINDINGS AND RECOMMENDATIONS

1. Implementation of a comprehensive information and communications technology strategy

7. In February 2002, the General Assembly requested DPKO to develop and implement a comprehensive information technology systems strategy that integrates field missions with the Secretariat's overall information and communication technology strategy.[2] In an earlier resolution[3], the Department's Communications and Information Technology Service (CITS) was given the task to develop and implement a comprehensive strategic plan and for building and sustaining an information technology capability for the whole Department.

8. DPKO does not have a formal information technology systems strategy. Management explained that in June 2001, the Field Administration and Logistics Division did have a strategic plan but this was not finalized and approved beyond the Director level. In the absence of a formal strategy, CITS has been following the Under-Secretary-General's yearly Programme Management Plan and has sought to align its policies on information systems in support of this plan.

9. The support account for peacekeeping operations for 2003/2004 included proposed funding for an ICT benchmarking study (estimated cost $202,000) to assess the effectiveness and efficiency of information systems management within the Department[4]. This study, which is scheduled for completion by the middle of this year, represents an independent review of DPKO's current communication and information technology capabilities.

10. The absence of a comprehensive information technology systems strategy approved at the highest level has led to systems, such as the old field assets control system, being introduced in response to operational requirements and pressing demands from headquarters and field operations.

11. A revised information and communication technology strategy for the Secretariat worldwide was presented in November 2002[5]. The information technology strategy and policy issues of the Department need to be aligned with those of the Secretariat's overall information and communication technology strategy. Failure to do so could result in duplication or incompatibility of systems.

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[2] A/RES/56/241 of 01.02.02, para. 8
[3] A/C.5/55/46/Add.1 para. 5.92 of September 2001
[4] A/57/732 para. 36
[5] A/57/620 of 20 November 2002

The post of Director of Change Management (DCM) was created in September 2001, approved in July 2002 but only encumbered in July 2003. One of the roles of the DCM is that of Chief Information Officer with responsibility of leading the Department's Information Management Programme and identifying and prioritizing the Department's information management needs[6].

13. The DCM represents DPKO on the Secretariat's ICT Board. He is also responsible for chairing the Department's ICT Committee "to ensure coordination and set priorities for the introduction of IT solutions to DPKO activities, ensuring coordination between Headquarters and field activities". An ICT Committee for DPKO was established in December 2001 but it has not been active since June 2002.

14. The DCM has specifically been tasked with the creation of an information management (IM) strategy that will address all the Department's information requirements. The IM strategy still has to be developed. At the time of our review, an internal committee to deal with IM policy issues and consult towards developing the IM strategy still had to be set up.

15. OIOS is concerned about the absence of well-defined timelines to carry out this exercise. The delay in developing this strategy will impact on finalizing the ICT strategy.

> **Recommendation 1**
> DPKO should take immediate steps to set up a committee for Information Management strategy and policy. A detailed work plan with timelines, benchmarks and resources for developing and implementing this strategy should be prepared expeditiously (AC2003/600/01/01)[7].

Management response: ***DPKO concurs with the recommendation.*** *The ICT Committee will be reactivated in April 2004, the strategy will be developed during the year and implemented immediately thereafter.*

OIOS takes note of management's response. It will close this recommendation when it receives documentation showing that the ICT Committee has been reactivated and an Information Management strategy has been implemented.

> **Recommendation 2**
> DPKO's Communications and Information Technology Service should adopt an action plan, with clearly set deadline and resources, for developing ICT strategy and the comprehensive strategic plan for DPKO and field missions. DPKO should ensure that this plan is in line with the

[6] A/C.5/55/46/Add.1 para. 5.3
[7] Draft report of OIOS on the Evaluation of the impact of the recent restructuring of DPKO: recommendation SP-03-001-024

Department's Information Management Strategy and with the global ICT strategy of the Secretariat (AC2003/600/01/02)[8].

Management response: ***DPKO concurs with the recommendation.*** *CITS is in the process of finalizing an action plan with clearly set deadlines and resource requirements for updating the Department's ICT strategy and the comprehensive strategic plan for DPKO and field missions. To this end, CITS is working jointly with the Department of Management's Information Technology Services Division to ensure compliance with the Secretariat's ICT Strategy. The CITS ICT draft action plan is scheduled to be submitted for DPKO Senior Management review during the second quarter of 2004.*

OIOS takes note of management's response. It will close this recommendation when it receives a copy of the action plan and evidence of Senior Management's approval of the plan.

16. A Secretary-General's bulletin issued in November 2003 on the ICT Board states that the mandate of this Board is "to ensure a coherent and coordinated global usage of information and communications technology across departments and duty stations, in line with the objectives of the Secretariat and the central policy direction provided by the Steering Committee on Reform and Management"[9]. It calls for all departments and offices away from Headquarters to establish information and communications technology Committees similar to the Board, and calls upon departments to establish departmental strategies aligned with the overall objectives of the Secretariat.[10]

17. The same bulletin establishes a Project Review Committee "to apply uniformly the standards decided upon by the Information and Communications Technology Board to information and communications technology initiatives within the Organization and to recommend whether such initiatives should proceed."[11] This Committee will review proposed ICT projects to justify the rationale behind the investment, ensure that the total cost of projects is accurately projected, standard development methodologies are applied and all relevant documentation is available.

18. As indicated in paragraph 13, DPKO's ICT Committee has not yet been established. Until this takes place, the Department will not have a role in the Project Review Committee and therefore will not be in a position to submit proposals for new systems and other ICT initiatives to this Committee for its review and approval.

Recommendation 3

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[8] Draft report of OIOS on the Evaluation of the impact of the recent restructuring of DPKO: recommendation SP-03-001-023

[9] ST/SGB/2003/17 para. 1.1

[10] ST/SGB/2003/17 of 21 November 2003 para 4.4

[11] ST/SGB/2003/17, para. 5.2

DPKO should take immediate steps to set up its ICT Committee as per Section 4.4 of ST/SGB/2003/17. The user community should be adequately represented on the Committee (AC2003/600/01/03)[12].

Management response: ***DPKO concurs with the recommendation.*** *The ICT Committee will be reactivated in April 2004 with representation from all areas of the Department.*

OIOS takes note of management's response. It will close this recommendation when it receives documentation showing that the ICT Committee is holding regular meetings and that all areas of the Department are represented on the Committee.

2. Determining tangible returns from investments made in ICT

19. The revised information and communication technology strategy for the Secretariat worldwide identifies the statement on return on investment as the foremost determining factor in assigning priorities to ICT projects and initiatives. It includes the use of mandatory cost-benefit analyses as a prerequisite for the development of all new systems and for the initiation of ICT-related projects to ensure a consistent approach and returns on investment[13]. The General Assembly also requested the Secretary-General to provide a mechanism to assess the rationale for investment.[14]

20. In DPKO, there has been an unstructured approach and a lack of consistent methodologies for selecting and developing software applications. Cost-benefit analyses have not been carried out nor tangible returns on investment identified. By the end of 2004, it is projected that $6 million will have been invested in Galaxy but the full benefits from this system still have to be attained. Better planning was required to deal with the much higher number of applications before taking the decision to implement the project on a Secretariat-wide level, and a lot of work is still required before the system is operating at its full potential. In the case of the Fields Assets Control System (FACS), the functional requirements of the field missions were not adequately analyzed with the result that applications had to be replaced within a relatively short time of being introduced. The FACS became fully operational in the various missions during the period July 1997 to December 2000 but in 2003 it was already being replaced by Galileo.

21. The Advisory Committee commented that, in the Secretary-General's report on the progress in the implementation of the field assets control system[15], the efficiency gains or benefits resulting from the implementation of Galileo were not identified.[16] CITS have explained these efficiency gains to OIOS, namely: more efficient business

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[12] Draft report of OIOS on the Evaluation of the impact of the recent restructuring of DPKO: recommendation SP-03-001-025

[13] A/57/620 para. 77

[14] Resolution 57/304 of 15 April 2003, paragraph 4

[15] A/57/765 of 21 March 2003

[16] A/58/7 para. 121

processes as a result of better functionality, data-capture and integrity; improved data consistency, better reporting facilities and audit trails, freeing up of space on the servers and a reduction in database maintenance. OIOS takes note of these explanations but observes that no monetary quantification of these benefits was made available.

22. OIOS is cognizant that financial calculation of returns is not always an easy task and is not feasible in all cases. Nevertheless, there is a definite case for introducing this practice in DPKO. Some measurements of monetary return may be arrived at by calculating the time taken to perform or do something before the new software is introduced and the estimated time after it has been introduced, and multiplying the time saved by the hourly/daily rate to arrive at a dollar figure. If the technology is replacing/reducing the number of employees, the calculation is more direct. There are also industry tools directed at helping management to calculate the monetary returns on IT projects.

23. The Advisory Committee has commented on the apparent lack of a comprehensive identification of needs, including a cost-benefit analysis, and the requisite architecture on the nine information technology systems in the Department[17] (Annex B). It has recommended that in the context of the budgets of peacekeeping operations for 2004/05, an evaluation should be undertaken of the cost-benefit and the efficiency and productivity results of the information technology systems of the Department that will have been implemented by the end of 2003 to ensure that the objectives sought have been realized and to correct any weaknesses identified.[18] This evaluation has not yet been carried out. CITS stated that it is in the process of applying the selected high level business case methodology to the systems implemented in 2003 to produce an analysis of critical success factors, timescale and costs, funding appraisals, risk analysis, and return on investment. It intends to use this information to correct any weaknesses.

24. OIOS takes note of the above; however, such exercises should not be carried out retrospectively but at the project evaluation stage and should incorporate a projected financial impact assessment. OIOS hopes that once established the DPKO ICT Committee will work together with the Secretariat's Project Review Committee to address this weakness.

25. OIOS also noted that there was no established practice in DPKO of comparing the cost of developing a system in-house with that of purchasing a software package and that Galileo was the first system when such evaluation was undertaken.

> **Recommendation 4**
> DPKO should not develop or commission any new application systems until its ICT strategy is adopted and criteria for systems selection and development, including return on investment, where feasible, are set. DPKO's ICT

[17] A/57/772 para. 104
[18] A/57/772 para. 106

Committee, once established, should see to it that no new project is approved without a preliminary evaluation that includes its financial impact and that comparative analysis of purchasing a package system against developing it in-house, or subcontracting it, be made mandatory for all proposed systems (AC2003/600/01/04)[19].

Management response: ***DPKO concurs with this recommendation.***

OIOS takes note of management's response and considers this recommendation implemented.

3. Budgets and funding for ICT projects

26. During 2003, CITS was involved in the development and implementation of nine ICT projects. The status of these projects as at December 2003 is given in Annex B.

27. OIOS requested details of budgeted costings for the nine ICT projects at time they were approved for implementation. CITS replied that with the exception of Galileo, budgeted costings were not available at the time of approval since the system used within the Secretariat does not provide for budget lines that are specific to projects. CITS attributes the lack of monitoring of actual system development costs against the approved budget to the absence of an activity-based costing system within the Organization.

28. The projects submitted to the Project Review Committee for evaluation will need to be backed by a cost-benefit analysis showing a return on investment and clear identification of business needs. While the source of funding for projects will not be within the Project Review Committee's scope of review, in the opinion of OIOS, these details should be made available to the Department's internal ICT Committee to ensure transparency.

Recommendation 5
OIOS recommends that for all future systems development in DPKO the actual costs are clearly identified and monitored against budgeted costs during the project life cycle. Any material variances should be highlighted to the Department's ICT Committee. The source of funding should also be clearly identified and reported to the ICT Committee (AC2003/600/01/05).

Management response: *DPKO notes the recommendation. The standard methodologies for the development of systems and management of ICT projects, including use of mandatory cost-benefit analysis to ensure alignment and return on*

[19] Draft report of OIOS on the Evaluation of the impact of the recent restructuring of DPKO: recommendation SP-03-001-026

investment have not yet been finalized and implemented for the Secretariat. ***DPKO will implement the standard methodologies when they are finalized by the ICTB.***

OIOS takes note of management's response. It will keep this recommendation open until it receives evidence that the standard methodologies have been implemented.

29. The total cost of developing and providing support for the Galaxy system for the period from 2001 to 2004 is now estimated at about $6 million. Development costs are calculated at $3,901,463. The balance is in respect of implementation, production and application support ($1,280,195), hardware and software ($639,647) and technical supplies and ancillaries ($200,000).

30. In July 2002, the total application development budget for Galileo, inclusive of hardware, software, training and miscellaneous services, was calculated at $3.5million. This amount includes costs for development amounting to $1,324,928 which DPKO contracted to the United Nations International Computing Centre (ICC). In November 2003, DPKO and ICC entered into two Service Delivery Agreements (SDA) related to Galileo. One covers the development of release 2 and involves one-time costs of $884,928 and programme management and quality assurance costs totalling $500,078. The latter costs will be shared between this project and the development of Mercury2. The other SDA, effective 1 January 2004, is for the support of Galileo with annual recurring costs of $627,041.

31. With Galaxy and Galileo, the need for upgrades and new releases were not adequately identified at the project planning stage. OIOS is concerned that the criteria for defining the point at which a software development project is complete have not been defined in the past and are not included in the current SDA with ICC.

32. A cost-benefit analysis will only be meaningful if a project is evaluated in its entirety and not on a piecemeal basis. This also applies when assessing the options of software development and the implementation of a package. There should be clear criteria, together with formal user acceptance, that define the point when a project is complete, and the point at which the service by the contractor becomes one of support and maintenance.

Recommendation 6

OIOS recommends that new systems are planned to incorporate all user and functional requirements, and that agreements regarding software development and systems implementation should clearly define the acceptance criteria and the point of delivery of the system (AC2003/600/01/06).

Management response: ***CITS agrees with this recommendation.*** *DPKO is further strengthening its requirement elicitation procedures by adopting the ICTB High-*

Level Business Case and Full Business Case methodologies promulgated by the Secretariat's Project Review Committee to further standardize the requirements elicitation procedures. These developments and the adoption of a Secretariat-wide standard should facilitate the client and end-user understanding of the need for stakeholders to be comprehensive in defining requirements at the outset of the project. The DPKO ICT Committee will oversee the presentation of HLBC for DPKO.

OIOS takes note of management's response and will keep this recommendation open until it receives evidence of its implementation.

4. DPKO's ICT structure and resources

ICT structure

33. The ICT function within DPKO is primarily the responsibility of the Communications and Information Technology Service within the Logistics Support Division. CITS provide applications for all peacekeeping and Department-administered operations in the field worldwide as well as communications and network services. Finance Management and Support Service offers first line support for financial systems and support of IMIS on a substantive level while Personnel Management and Support Service acts as the focal point for substantive HRM areas for field missions, including automation of related business processes in Galaxy, implementation and support of IMIS releases 1 and 2, and other HRM systems used by DPKO in the field.

34. CITS is headed by a Chief of Service, a post that has been upgraded to D1. Details of the current CITS Organizational set-up at UNHQ are set out in Annex A-1. There is a CITS function at each active mission. The Chief of CITS in each field mission serves as the focal point for ICT matters for that mission and liaises with the Chief CITS in UNHQ on technical matters. At the end of 2003, the number of IT staff in the various missions (including UNLB) was 293. A breakdown is given in Annex A-2.

35. OIOS considers the current position of CITS within the Department as appropriate since this facilitates the logistics aspects and coordination of the work. Any review in relation to the current position of CITS within the Department should be undertaken in line with the ICT strategy.

36. DPKO runs a major IT and communications operation at the United Nations Logistics Base in Brindisi. Brindisi acts as a communications hub for the entire network and hosts the Network Control Centre that provides monitoring on a 24/7 basis. DPKO has 26 ICT posts in Brindisi and staff provides support to the core UNLB functions and to missions. There are also 47 persons contacted from the United Nations International Computing Centre. These are involved in systems development and support, operations and technical support, and the help desk function.

37. OIOS looked at the possibility that CITS transfer certain functions from

headquarters to Brindisi. The Chief, CITS has to deal with a number of offices based in headquarters and transferring his office would not be practical. The same applies to most of the sections within CITS due to their the day-to-day interaction with the various offices that are located at headquarters, such as finance, procurement division, the legal office and ITSD, as well as the office of the Chief, CITS itself. One sees little advantage to be gained from such relocation; if anything this may cause delays and an increase in official travel costs. The only functions that may be relocated to Brindisi would be those associated with projects that are nearing completion - in which case the post-implementation monitoring function can be performed in Brindisi - and some of the 10 posts within the Field Mission System Section. Some of these posts could be utilized to support the centralization of systems in Brindisi but others would need to remain at headquarters to provide input to future development requirements. The above could mean the relocation of 5 to 6 professional posts.

> **Recommendation 7**
> DPKO should consider the transfer to Brindisi of those posts related to systems that have been implemented and are now based at UNLB (AC2003/600/01/07)[20].

Management response: *Resolution 57/320 of 18 June 2003 requested the Secretary General "to provide a comprehensive examination of the merits of establishing a global procurement hub for all peacekeeping missions in Brindisi recommended by the Advisory Committee on Administrative and Budgetary Questions, the merits of relocating to Brindisi all support account posts and non-post resources at Headquarters pertaining to the Logistics Support Division, as well as those related to communications and information technology services related to peacekeeping missions." A report on this examination entitled "Analysis of Establishing a Global Procurement hub for all Peacekeeping Missions in Brindisi", has been drafted and will be presented to the General Assembly.* ***A response to OIOS recommendation No. 7 is therefore pending deliberation by the GA.***

OIOS takes note of management's response and will keep this recommendation open pending an update from DPKO.

Resources

38. The 2003/04 budget for communication and information technology for DPKO totals $101 million, $68.3 million for communications and $32.7 million for information technology.[21]

[20] Draft report of OIOS on the Evaluation of the impact of the recent restructuring of DPKO: recommendation SP-03-001-026
[21] A/C.5/57/34/Rev.

39. CITS was preceded by the Communications and Electronic Support Section that at the end of 1999 had a staff compliment of 27 comprising 15 professionals and 12 general service staff. CITS at headquarters now has a staff compliment of 25 professionals (two of whom are on loan) and 11 general service staff. CITS management is of the opinion that the current number and skills of ICT staff in both headquarters and the missions is not adequate to meet the requirements of the Department and to support the systems that are in place, notwithstanding the use of contractual personnel.

40. OIOS feels that in the absence of monitoring tools such as time records, it is difficult to establish whether there is a shortage in personnel and if so to quantify the resources required. In certain instances, for example the number of technicians required to support the servers, one can adopt industry benchmarks but this method cannot be applied to all cases. In the case of software development, the reference should be the ICT strategy. OIOS is of the opinion that management should introduce individual work plans and time records. This will enable management to identify delays in specific areas as a result of shortage of staff and to make an informed case for requesting additional posts or funding for the outsourcing of services.

> **Recommendation 8**
> CITS should introduce individual work plans and time records and use them for analyzing the adequacy of resources for implementing the planned tasks (AC2003/600/01/08)[22].

Management response: ***DPKO agrees with the importance of individual work plans but does not agree with the recommendation to use time records to analyze performance.*** *The UN Standard Performance Appraisal System (PAS) is the monitoring tool for individual work plans. Thus individual work plans are already implemented and reviewed in CITS through the PAS on a continual basis. Regarding time records, while this type of monitoring could be somewhat useful for analytical purposes, CITS does not have sufficient human resources to absorb the increased workload associated with their production or management. CITS does use individual work plans to manage and optimize resource utilization to achieve this end, however, the use of time sheets creates an additional burden for which CITS is not staffed. In the case of ICT, performance measurements are based on on-going monitoring of service provision on a twenty-four by seven basis and hinge on the overall evaluation of the connectivity of the transfer of voice, data and video services within mission environments and between all missions and UNHQ.*

OIOS takes note of management's response. While it agrees that if used effectively the PAS can provide management with a monitoring tool for individual work plans, it reiterates the importance of time records given the nature of the work and services

[22] Draft report of OIOS on the Evaluation of the impact of the recent restructuring of DPKO: recommendation SP-03-001-027

provided by CITS. OIOS feels that as a minimum, CITS should introduce time records on a pilot basis and assess the resources that would be required for full implementation. Accordingly, this recommendation is being reiterated.

5. Arrangements with the United Nations International Computing Centre

41. In December 2000, the Department entered into a memorandum of understanding (MOU) with the ICC to provide technical support services to DPKO in the areas of applications development and support, network support and operations support (Help Desk).

42. The first MOU was for a period of two and a half years, allowing the first six months for staff recruitment. In December 2001, this MOU was amended at the request of DPKO to accommodate new requirements and to remove certain functions that no longer required the support of ICC. An addendum in July 2002 incorporated development work for the Strategic Deployment Stock system (Galileo) and Funds Monitoring Tool projects, expanded the Help Desk and increased support for the Wide Area Network. A January 2003 addendum covered work for Galaxy support, Mercury re-engineering and integration with Galileo, and Fleet Management System development and integration with Galileo. In 2003, a new MOU was signed. This incorporated two Service Delivery Agreements (SDAs) for the provision of technical services at headquarters and at UNLB. Under an August 2003 SDA, ICC was contracted to take over the operation of the Network Control Centre in Brindisi by April 2004. In November 2003, DPKO entered into another two SDAs with ICC; one for the support of Galileo, and another one for development work related to Galileo2 and Mercury2. In September 2003, there were 94 ICC staff members, 47 stationed in headquarters and 47 in UNLB. The Organizational set-up is shown in Annex A-3.

43. In the area of software development and certain ICT support services, the use of consultants can have financial advantages since the required personnel can be employed for the term of the project or according to the demand for the service. Other advantages are flexibility when it comes to choosing technical expertise and a faster recruitment process.

44. OIOS feels that the use of staff on temporary contracts is also appropriate given the nature of the Department's operations, which call for the downsizing of certain missions, and more importantly the need to set-up new ones within a very short timeframe. Using the services of ICC reduces the lead-time for recruitment.

45. OIOS agrees with the policy of contacting out certain technical services to ICC. In the case of software development however, all new initiatives should first be subject to justification on a return on investment basis and an evaluation of development against the purchase of a package system, as per recommendations 4 and 6 above. Furthermore, CITS should ensure that future systems development contacted out to ICC or other third

parties follow the methodologies and software development standards that have been adopted by the Secretariat.

> **Recommendation 9**
> DPKO should apply the same procedures as in recommendations 4 and 6 above prior to entering into any new agreements with the ICC. DPKO should update its MOU with the Centre to specify that software development tools and procedures be fully in line with the established Secretariat policies (AC2003/600/01/09)[23].

Management response: The MOU for development and support with the ICC specifies that the "architectural design on the software will be as per DPKO guidelines and software development technologies." While the current Service Delivery Agreements with ICC have a scope of development including requirement specification to be agreed upon and accepted by DPKO stakeholders, **DPKO agrees with the recommendation and will ensure that all future SDAs have a formal, clearly defined user acceptance criteria and specify point of delivery of the system.**

OIOS takes note of management's response and will keep this recommendation open until it receives evidence of its implementation.

6. Procedures for problem handling and program change controls

46. At the time of our review, procedures, including escalation procedures, were being developed for the handling of hardware, system software and network related problems. There were plans to implement a software tool that would log requests for modifications to programs but the infrastructure for this was not yet in place. For example in the case of Galileo, OIOS noted that modifications to the system by the ICC programmers were based on notes taken during meetings with users but there was no standard documentation to record the change request and evidence approval by technical staff and users.

> **Recommendation 10**
> CITS should liaise with the ICC and draw up a formal set of procedures covering changes to the Department's core application systems, and set up timelines for finalizing and implementing these procedures and those for dealing with hardware, system software and network related problems (AC2003/600/01/10).

Management response: **This recommendation has been implemented.**

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[23] Draft report of OIOS on the Evaluation of the impact of the recent restructuring of DPKO: recommendation SP-03-001-028

OIOS takes note of management's response. It will close this recommendation when it receives a copy of the procedures that have been agreed with ICC.

7. Help Desk function

47. OIOS's evaluation of the services provided by the Help Desk through the arrangements with the ICC was positive. The upgraded software package (COMET2), which was in the process of being implemented at the time of our review has an incident-logging facility and enhanced reporting features. Whereas with the original software, the monitoring of a problem was restricted to the site where it was logged, COMET2 provides one unified reporting system, thereby allowing monitoring by New York, Brindisi and any mission with access to the software. Implementation of automatic logging of help desk calls was also in hand. However, OIOS sees room for improvement in the monitoring of the turnaround time for dealing with requests submitted to the Help Desk since existing statistics are not reliable. This would enable management to identify areas where the service can be enhanced.

> **Recommendation 11**
> CITS should implement procedures for monitoring the turnaround time in clearing requests logged with the Help Desk (AC2003/600/01/11).

Management response: **This recommendation has been implemented.**

OIOS takes note of management's response. It will close this recommendation when it receives evidence of the procedures that have been implemented for monitoring turnaround time.

8. Information management at the mission level

48. Most missions have a capacity to produce their own systems. Apart from the core systems such as Galaxy, Galileo and Mars, there are various applications at a mission level covering work related to civilian police, human rights, military, humanitarian, and electoral functions. Up to 2000, these had received little attention from headquarters but efforts are under way to harmonize and streamline them.

49. OIOS noted successful and cost-effective implementation by DPKO of storage area network technologies and ensuring that the local infrastructure in the field is adequate and capable of connecting to headquarters either through satellite or land-based links. The adopted shift towards web-based technologies will establish more centralized technology, provide faster access and more consistent information for the various offices within DPKO in their daily work and interaction with the field missions and will facilitate information management at the mission level.

50. CITS efforts to address the problem of duplicate data entry and data storage

resulted in the number of active databases it supports having been reduced from over 3,000 to about 800 with the aim of going down to around 175 during 2004. All web applications will be hosted at a centralized data centre in UNLB. OIOS welcomes the move from numerous application systems and databases distributed in the various missions towards centralized and integrated systems but believes that safeguards should be put in place to maintain this achievement. For example, OIOS noted that CITS Brindisi developed 56 Lotus Notes based applications (some of which are simple spreadsheets) during 2003 and this office currently supports 88 such applications/spreadsheets.

51. OIOS is of the opinion that development in missions of software applications and databases above a certain level should be centrally monitored to ensure that this is done on a cost-benefit justification and there is no duplication or incompatibility.

> **Recommendation 12**
> The DPKO ICT Committee should establish clear guidelines, policies and standards for ICT field projects. The web-base catalogue of existing systems and databases should be made available as the primary source for satisfying ICT requirement. The ICT Committee should establish a ceiling for ICT field projects, with the stipulation that all new proposals from the field to acquire or develop applications systems and databases that exceed such ceiling should be subject to review and approval by the Committee (AC2003/600/01/12).

Management response: ***DPKO agrees with this recommendation.*** *In April 2004, the Chief CITS will brief all missions on the creation of the PRC and the adoption of the High Level Business Case as mandated by the ICTB to ensure DPKO compliance with ST/SGB/2003/17 of 21 November 2003 paragraph 4.4. Mission ICT staff will be briefed on the need to establish information and communication committees mirroring the ICT PRC to establish mission strategies and align these with DPKO's IM strategy and the ICT Strategy of the Secretariat. As part of this endeavour, ICT staff will be briefed on the measures taken to uniformly adopt clear guidelines, policies and standards for all DPKO field projects.*

OIOS welcomes the actions being taken by management. It will keep this recommendation open pending receipt of documentation showing that the ICT Committee has implemented the steps outlined in the recommendation.

9. End user computing

52. OIOS appreciates that once users have access to the various PC-based applications, it is not feasible to have centralized control over this area. OIOS sees the

role of CITS as that of providing guidelines from time to time, either directly to the users or to management/focal points within the various units of DPKO, including the missions. These guidelines would cover things such as safeguards over the integrity of data in reports that are generated from user-developed spreadsheets, security of diskettes, CDs and other back-up media, and the installation and upgrading of virus-detection software on laptops.

> **Recommendation 13**
> Periodically, CITS should issue guidelines to users outlining the risks related to end user computing and provide guidance on safeguards and best practices to mitigate these risks (AC2003/600/01/13).

Management response: ***CITS agrees with this recommendation.*** *The Chief CITS will brief all missions on the Secretary-General's Bulletin of the Use of Information and Communication Technology Resources and Data policy currently in draft form. In addition, CITS is working closely with ITSD and UNLB to inform all DPKO staff members of the threat to our information and communications networks and the remedial measures being undertaken by ITSD and CITS to inform end-users on actions and safe practices, which, at the user level, can assist CITS and ITSD in safeguarding the Department's information communication networks. Periodically, CITS does, and will continue, to issue guidelines to users outlining risks related to end user computing.*

OIOS takes note of management's response. It will close this recommendation when it receives a copy of the latest guidelines issued to users.

10. Disaster recovery and business continuity planning

53. CITS informed OIOS that planning related to business continuity, disaster recovery, backup and contingency measures has been undertaken and consolidated. Business continuity is based on a three-tier concept that utilizes UNLB, DPKO headquarters in New York and the United Nations office in Geneva as disaster recovery sites.

54. When we visited UNLB in December, planning only covered the disaster recovery portion of CITS. A full business continuity plan still had to be developed for the whole UNLB operation. In the current world situation, there is a heightened risk of loss of key facilities such as the computer room in UNLB or the satellite hub. This area is sensitive due to the "star" configuration of the network hub. Although the satellite link is only one way of transmitting information, it is the most important one.

55. Business continuity planning is a major project that requires careful and thorough planning, funding, timelines, and resources. The plans also need to be tested on a regular basis. Arrangements have to be made with the supplies of hardware, software and

communications equipment, as well as ITSD. DPKO also needs to enter into a formal agreement with ICC to provide the necessary support and to test the arrangements.

Recommendation 14

OIOS recommends that comprehensive business continuity plans are finalized and the necessary arrangements to support these plans are made with the suppliers of hardware, software and communication equipment (AC2003/600/01/14).

Management response: ***CITS agrees with this recommendation.*** *A comprehensive DPKO business continuity plan is currently in the planning and drafting stages and will be reviewed at CITS planning meeting for feedback and finalization in April 2004.*

OIOS has taken note of management's response. It will close this recommendation when it receives documentation showing that the DPKO business continuity plan has been finalized and approved at a Departmental level.

IV. ACKNOWLEDGEMENT

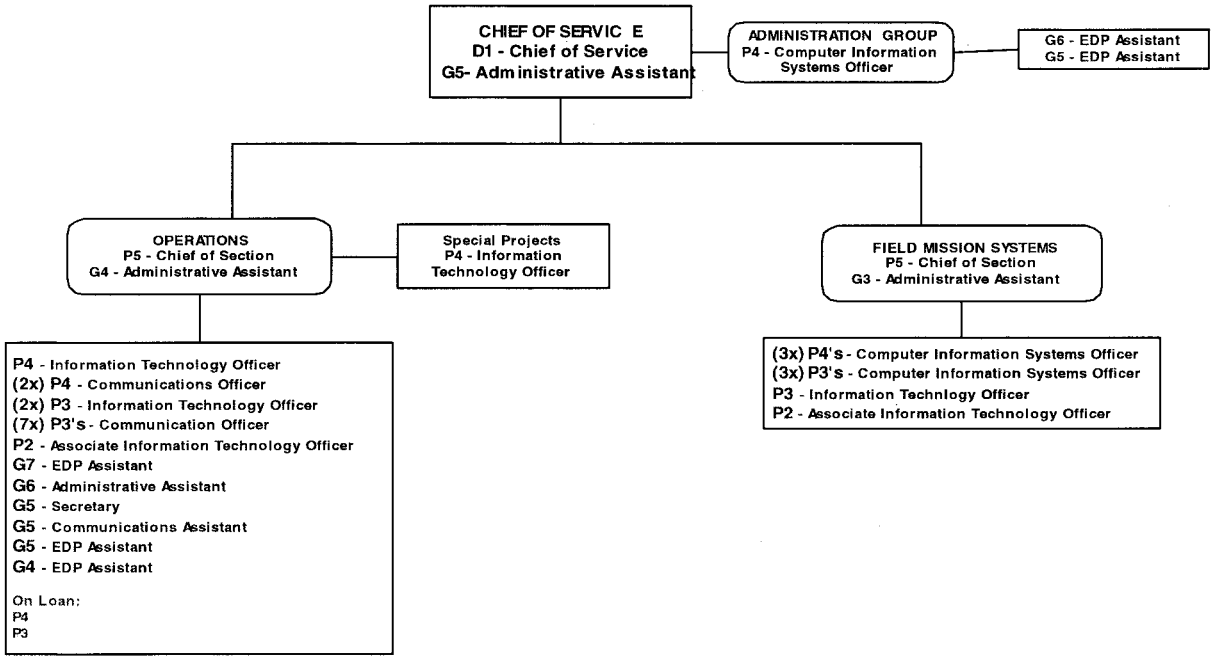
56. We wish to express our appreciation for the assistance and cooperation extended to the auditors.

Patricia Azarias, Director
Internal Audit Division I/OIOS

ANNEX A-1

Details for post and current organizational set-up CITS in UNHQ

Source: CITS



ANNEX A-2

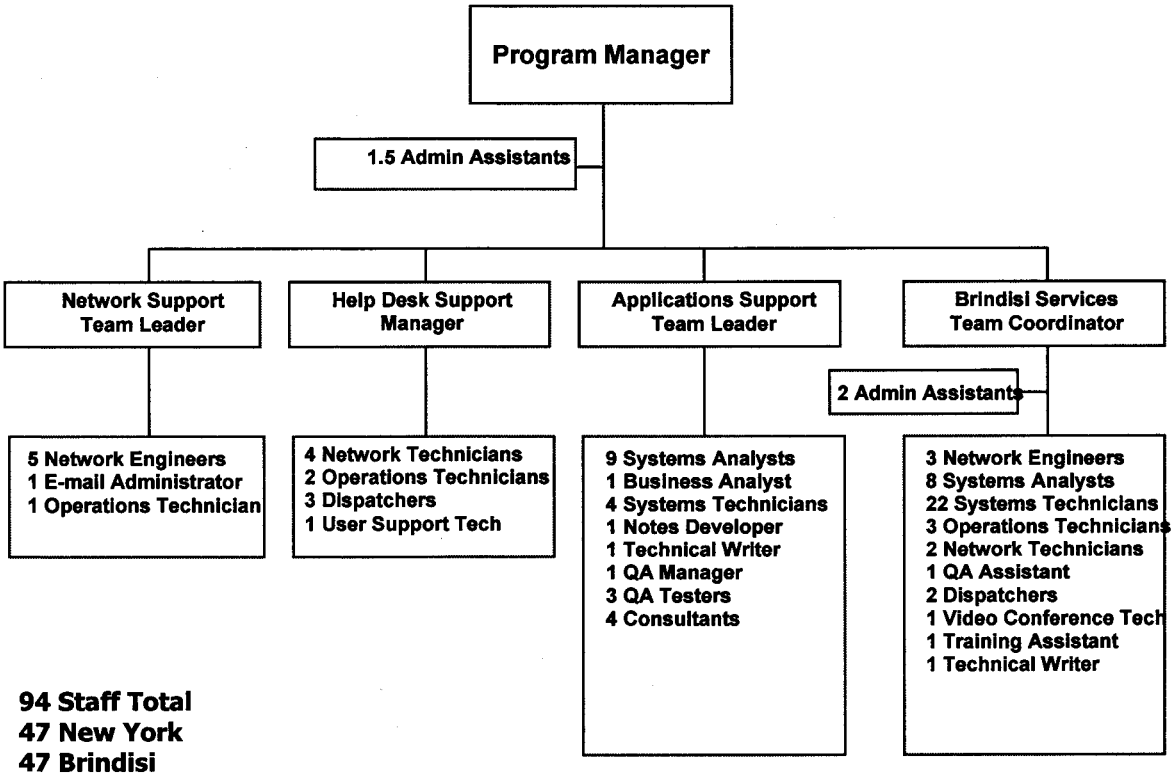
DPKO CITS ICT staff in the missions (incumbents as at December 2003)

Source: CITS

Mission	IT staff
BONUCA	2
MINUCI	4
MINUGUA	5
MINURSO	6
MONUC	46
UNAMA	25
UNAMSIL	20
UNDOF	7
UNFICYP	4
UNIFIL	8
UNLB	8
UNMEE	19
UNMIK	90
UNMISET	16
UNMOGIP	5
UNOB	2
UNOHCI	11
UNOMIG	7
UNSCO	1
UNTOP	1
UNTSO	6
Total	**293**

ICC: Details for post and current organizational set-up in UNHQ and UNLB

Source: CITS



94 Staff Total
47 New York
47 Brindisi

As of 8 Sept 2003

ANNEX B

Status of DPKO/CITS projects as at December 2003
Source: CITS

FIELD IMIS

Field IMIS releases 1 and 2 for international staff has been implemented in 15 missions to date, including MINUCI, with UNMIL planned for first quarter 2004. The Gap Analysis to determine the functional and technical requirements to implement releases 3 and 4 has been conducted and the report to the IMIS Steering Committee is being finalised.

GALAXY

Subsequent to implementation of Release 1, joint requirements planning sessions were held with DPKO/PMSS to determine enhancements required to meet their specific recruitment workflow needs. These technical requirements resulted in several technical functionalities (Release 1.A) that have been implemented and are additionally available to other agencies or recruitment offices if requested. Over 70 generic vacancies were posted by PMSS for the purpose of accepting and reviewing online applications to identify qualified candidates for rostering purposes. Post-specific vacancies were built and posted in UNIFIL and UNMIK missions as part of the first PMSS mission pilot.

GALILEO

The first release of the Galileo Inventory Management System (IMS) has been implemented in UNLB to manage the Strategic Deployment Stocks (SDS). Implementation of the system in the remaining missions is on-going, with the implementation of the system, which is considered a beta-test, currently on the way in the United Nations Mission in Kosovo (UNMIK).

MERCURY

Mercury release 1 has been successfully implemented in 21 sites and the re-engineering of the system into the Microsoft .Net framework using an SQL relational database, thereby allowing integration with the Galileo inventory management system is currently under development and is scheduled for completion during the second quarter of 2004.

CONTINGENT-OWNED EQUIPMENT (COE) – RELEASE 1

COE has been implemented in the nine missions with COE, including UNMIL in November 2003. During the third and fourth quarter 2003 CITS implemented new functionality to provide planning worksheets for the Force Generation Service in planning new deployments and introduced the vehicle planning report in UNHQ and field to determine to total number of contingent vehicles expected in a deployment. This is necessary for the calculation of mission POL requirements and third party insurance.

MOVEMENT CONTROL AVIATION INSPECTION MODULE

This was implemented via e-deployment during the third and fourth quarters of 2003. The development of the capability for mission staff to use a PDA during field inspections has been completed and the functionality will be implemented during the first quarter 2004. The development and implementation of the Movement Module is scheduled to be completed during the first quarter in 2004 providing functionality to support the business process of leasing aircraft for troop deployments, rotations and repatriations.

E-STARS SUITE

Team Agenda has been fully implemented in DPKO for senior level management and their designated assistants, thus facilitating the scheduling of meetings by consolidating the individual calendars of the Departments Principles, Directors and Deputies.
Mail Action Record System (MARS) has been implemented in the Office Mission Support (OMS) and additional functionality has been developed based upon requirements gathering in the remaining DPKO offices. The implementation throughout the remainder of the Department is schedule for first quarter 2004. In support of the sister United Nations entities MARS was provided to ESCWA.
DPKO Planner provides departmental wide dissemination of DPKO senior management official travel, representational activities, legislative body commitments, leave plans and other major events as is accessible by all DPKO staff.
Situation Reports Module/Report Tool (SMART) leverages existing Lotus Notes email infrastructure to transmit, in a secure and timely fashion the: daily, weekly, monthly Situation Reports from PDKO Missions to the Situation Centre and the subsequent electronic dissemination of these reports and the Situation Centre generated reports within DPKO to designated receipts. The electronic dissemination of these reports to other Secretariat Officials is currently being introduced thus further streamlining the distribution process.

DPKO PORTAL

Department of Peacekeeping Operations - Go Portal development of Phase 1 has been completed during the fourth quarter 2003 and the Director of Change Management will be reviewing the product and authorizing departmental content.

FUNDS MONITORING TOOL

This has been implemented in 14 fund-type2 missions supporting the Controller's increased delegation of financial authority. CITS has introduced additional functionality for multiyear analysis during the second quarter 2003. In the effort to increase managerial decision capabilities new reports are designed implemented based upon requests of the FMT Working Group.