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INTEROFFICE MEMORANDUM MEMORANDUM INTERIEUR

INTERNAL AUDIT DIVISION
OFFICE OF INTERNAL OVERSIGHT SERVICES

TO: Mr. Alan Doss
A: Special Representative of the Secretary-General
United Nations Mission in Liberia

DATE: 3 April 2007

REFERENCE: AUD-7-5:75 (07- 00148)

FROM: Dagfinn Knutsen, Acting Director
DE: Internal Audit Division, OIOS



SUBJECT: **OIOS Audit No. AP2006/626/05: Management of telecommunications in UNMIL**
OBJET:

1. I am pleased to present the final report on the above-mentioned audit, which was conducted during July to November 2006.

2. We note from your response to the draft that UNMIL has accepted all the recommendations. Based on the response, we are pleased to inform you that we have closed recommendations 1 and 3. In order for us to close out the remaining recommendations (i.e., 2, 4, 5, 6 and 7), we request that you provide us with additional information as indicated in the text of the report. Please refer to the recommendation number concerned to facilitate monitoring of their implementation status. Please note that OIOS will report on the progress made in implementing its recommendations, particularly those designed as critical (i.e., recommendations 2 and 6), in its annual report to the General Assembly and semi-annual report to the Secretary-General.

3. IAD is assessing the overall quality of its audit process and kindly requests that you consult with your managers who dealt directly with the auditors and complete the attached client satisfaction survey form.

4. I take this opportunity to thank the management and staff of UNMIL for the assistance and cooperation provided to the auditors in connection with this assignment.

Copy to: Mr. Jean-Marie Guéhenno, Under-Secretary-General for Peacekeeping Operations
Mr. Philip Cooper, Director, ASD/DPKO
Mr. Stephen Lieberman, Director of Administration, UNMIL
Mr. Swatantra Goolsarran, Executive Secretary, UN Board of Auditors
Mr. Jonathan Childerley, Chief, Oversight Support Unit, Department of Management
Mr. Mika Tapio, Programme Officer, OIOS
Mr. Prances Soosa, Chief Resident Auditor, UNMIL

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Office of Internal Oversight Services

Internal Audit Division



Management of telecommunications in UNMIL

Audit no: AP2006/626/05
Report date: 3 April 2007
Audit team: Kimondo Karanu, Auditor-in-Charge

EXECUTIVE SUMMARY

Management of telecommunications in UNMIL (Assignment No. AP2006/626/05)

OIOS conducted an audit of telecommunications management in UNMIL between July and November 2006. The objective of the audit was to ascertain whether the existing controls on infrastructure management were sufficient and whether the services were delivered in an efficient, effective and economical manner. The specific areas reviewed were governance, planning and organization, financial and human resources management, and the existing policies and procedures as they pertain to telephone billing, technical support, security, change management and disaster preparedness.

The Communication and Information Technology Section (CITS) in UNMIL reports to the Chief of Integrated support Services (CISS) and is responsible for developing the Information and Communications Technology (ICT) infrastructure, delivering technical support services across the Mission, and managing and maintaining ICT equipment. The infrastructure was built practically from scratch because it had been completely destroyed in the war that preceded the establishment of the Mission.

Despite the harsh climate in Liberia, CITS has developed outdoor and indoor ICT infrastructure comprising microwave, ultra high frequency (UHF) and very high frequency (VHF) radio communications, a Global System for Mobile Communications (GSM) service, Private Automatic Branch Exchange (PABX) network of over 2,000 extensions, and local area networks of computers.

OIOS found that the controls in place for safeguarding the telecommunications infrastructure are sufficient. However, best practices need to be adopted in project management to improve accountability and delivery of telecommunications services in an efficient, effective and economical manner. Improvements are also required in the organization and supervision of work and in the promulgation of procedures.

In addition, the UNMIL Administration needs to: adopt project management procedures; establish business continuity management; establish procedures for verifying vendor invoices; review the CITS organization structure; fill vacant positions in CITS; and improve user support services.

The UNMIL Administration, following discussions of the audit results with OIOS, already implemented several recommendations prior to the issuance of this report. These include convening the Information and Communications Technology Review Committee and expanding its representation; adjusting the organizational structure of CITS; and introducing accounting procedures for telephone services.

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ABBREVIATIONS USED

CISS	Chief Integrated Support Services
CITS	Communications and Information Technology Section
CCO	Chief Communications Officer
CCITS	Chief, Communications and Information Technology Section
COMCEN	Communication Centre
DOA	Director of Administration
DPKO	Department of Peacekeeping Operations
FMSS	Financial Management Support Services
GSM	Global System for Mobile Communications
ICT	Information and Communications Technology
ICTRC	Information and Communications Technology Review Committee
MOU	Memorandum of Understanding
MOSS	Minimum Operating Security Standards
OIOS	Office of Internal Oversight Services
OPPBA	Office of Programme Planning, Budget and Accounts
PABX	Private Automatic Branch Exchange
PSTN	Public Service Telephone Network
PIN	Personal Identification Number
SDS	Strategic Deployment Stocks
SOP	Standard Operating Procedures
TBU	Telephone Billing Unit
UNHQ	United Nations Headquarters
UNLB	United Nations Logistics Base
UNMIL	United Nations Mission in Liberia
UPS	Uninterruptible Power Supply
UHF	Ultra High Frequency
VHF	Very High Frequency
VOIP	Voice Over Internet Protocol
VSAT	Very Small Aperture Terminal

I. INTRODUCTION

1. OIOS conducted an audit of telecommunications management in UNMIL between July and November 2006. The audit was conducted in accordance with the International Standards for the Professional Practice of Internal Auditing.

2. The Communications and Information Technology Section (CITS) is one of four technical sections which, together with Transport, Engineering and Supply Sections, report to the Chief of Integrated Support Services (CISS) who reports to the Director of Administration (DOA). CITS is responsible for delivering communication services to the administrative, military and substantive functions of the Mission by:

- Developing all telecommunications infrastructure in the Mission area;
- Providing technical support to users; and
- Maintaining and repairing Information and Communications Technology (ICT) equipment.

3. All telecommunication infrastructures in Liberia were destroyed during the war. CITS therefore faced the challenge of building infrastructure from scratch, in an environment where governance of telecommunications did not exist to regulate the service in the country, such as the allocation of transmission frequencies. It is very rainy in the country, which makes rural roads impassable and outdoor work impossible for most of the year. Provision of technical support to users in the outlying regions is also greatly hampered by often impassable roads and the requirement to comply with the Minimum Operating Security Standards (MOSS).

4. Despite these difficult circumstances, the Mission CITS has built a communications network comprising:

- UHF (ultra high frequency) and VHF (very high frequency) base stations and radios that serve those on travel or in very remote locations;
- PABX (private automatic branch exchange) units and telephone extensions that provide national coverage and international direct dialing to offices and residences;
- A GSM (global system for mobile communications) network;
- Local and wide area networks of computers, routers and switches that provide email, office productivity tools and enterprise applications;
- Satellite transceivers and modems that transmit data, voice and video conferences between local stations, UNHQ in New York and UNLB in Brindisi;
- Microwave links erected at strategic locations to cover the majority of the country.

5. The Mission is in the process of replacing the existing satellite technology with microwave technology, which is faster, more robust, cheaper to maintain, and provides more throughput of voice and data. Satellite-based telephony is quicker to install using mobile earth stations, which makes it the technology of choice at start-up. Its effectiveness is, however, compromised by delays arising from the transmission of signals to and from a satellite located 36,000 km in space. This setup, coupled with limited bandwidth, manifests in slow response time of enterprise applications that are centered in the United Nations Logistics Base (UNLB) and other web-based applications. The Mission intends to improve the efficiency of services by developing a communications backbone system when the microwave linkages are in place.

6. The Mission is also in the process of decommissioning its GSM system with a commercial service provider. The in-house system was isolated and limited to about 200 users but the commercial system is expected to have over 600 subscribers and to provide linkage to other local mobile services and to international circuits. Overall, UNMIL expects the new service to be more cost effective than maintaining an in-house GSM system.

7. The comments made by the Management of UNMIL on the draft audit report have been included in this report as appropriate and are shown in *italics*.

II. AUDIT OBJECTIVE

8. The objectives of the audit were to ascertain whether:

- (a) Managerial controls in place are adequate to safeguard the telecommunications infrastructure and other related assets; and
- (b) The delivery of telecommunications services at UNMIL is carried out in an efficient, effective and economical manner.

III. AUDIT SCOPE AND METHODOLOGY

9. The audit focused primarily on the management of communications technology. Information technology matters were included where matters concerning the two technologies could not be separated. The managerial aspects reviewed were:

- ICT governance
- Planning and organization
- Financial management
- Human resources management
- Telecommunications policies and procedures
- Telephone billing
- Technical support
- Security
- Change management
- Disaster preparedness

10. Documents containing telecommunications policies, standard operating procedures (SOP), administrative instructions, work plans, network diagrams, service contracts, organization charts and job descriptions were reviewed. OIOS also:

- Surveyed CITS management views through the use of a questionnaire
- Interviewed CITS management and supervisory staff
- Reviewed records pertaining to activities in the financial year 2005-06
- Analyzed communication services data
- Inspected installation sites
- Discussed the audit observations with the unit supervisors and management of CITS, and UNMIL Administration.

IV. AUDIT FINDINGS AND RECOMMENDATIONS

A. ICT Governance

Operations of the Information and Communications Technology Review Committee (ICTRC)

11. According to the Secretary General’s Bulletin ST/SGB/2003/17 on Information and Communications Technology Board, the board should meet at least once every 6 weeks to review ICT initiatives that would, subject to certain conditions stipulated in ST/AI/2005/10, cost above \$200,000 over a four year period. Section 4.4 of the bulletin also states that “All departments and offices away from Headquarters shall establish internal or local information and communications technology groups or committees following the pattern of the Board.” In compliance thereto, an ICTRC was formed in UNMIL in March 2006 comprising the following members:

Table 1: The Information Technology Review Committee for UNMIL

Chairperson – Director of Administration		
Representation	Members	Alternate
1. Finance/Budget Section	Chief Budget Officer	Chief Finance Officer
2. Procurement Section	OIC Procurement Section	
3. CITS	Chief CITS	Chief IT Officer
4. Technical Services	Chief Integrated Support Services	Deputy CISS
5. Administrative Services	Chief Administrative Services	Chief Finance Officer
6. Civilian police	Chief of Logistics	
7. UN military observers	Senior Officer	
8. Military staff officers	Chief Communications Officer (G6)	

12. The \$200,000 threshold is however viewed as relating to application development only, which is minimal in the Mission. Without the ICTRC providing oversight, the continuing investments in ICT, especially expansion of communication infrastructure in the outlying

sectors, are left to the technological perspective of CITS and are not being sufficiently vetted for alignment with the Mission's strategic direction.

13. Paragraph 29 of the General Assembly report A/58/740 titled Functional requirements of field missions for communication and information technology, states that “Specialized ICT services are required to support the activities of the political, civil affairs, human rights, public information and other substantive components.” However, the composition of the ICTRC does not include representation from these Mission components, which denies them the ability to provide input on ICT matters. Their omission from the ICTRC could cause important decisions on communication services to lack the necessary business perspective.

14. OIOS’ observation on convening the Committee and the scope of its representation were discussed during the exit conference. Subsequently, the first meeting of the ICTRC was held on 14 November 2006 and the following issues were discussed:

- The current membership.
- The Committee’s mandate with the objective of clarifying the nature and extent of projects to be referred to the Committee for consideration.
- Agreement on Mission procedures for receiving projects for approval.
- Past and present CITS projects limited to Application Development, Systems Development or Application Support groups.

15. The ICTRC in UNMIL agreed to incorporate two additional members, one each to represent the Rule of Law and Operations and the Governance and Recovery divisions. The committee also resolved to convene on an *ad hoc* basis as and when required in accordance with departmental instructions vide 2005-UNHQ-047303 of 3 August 2005, “DPKO Information and Communications Technology (ICT) Governance Structures for Field Missions”.

Project management

16. The Mission environment is chaotic by nature, especially in the formative stages. Communication needs often change and priorities shift to adjust to the changing environment. Because of these changes, the Mission must ensure that documentation of project plans is adequately documented. Proper project planning and implementation of ICT projects would ensure that:

- (i) Effective controls are in place from the outset,
- (ii) Efficient use of resources is monitored throughout the project life cycle, and
- (iii) Economical balance between quality and expediency is achieved.

17. The Mission community requires rapid delivery of services often to remote sites and under difficult accessibility. Prior to the inception of UNMIL, a technical survey team conducted feasibility studies and outlined the requirements for communications systems. At the start of the Mission CITS used the report as a template to develop connectivity. As the Mission progresses, operational requirements have dictated to what degree there is a need to fine tune and reconfigure the network. For example, establishing the satellite and microwave backbone networks required proper planning to determine the path profile in determining fade margins, the various losses, overall gain of the system, expansion and interlinking capacity, bandwidth and

throughput of data. The only plans in place are Section's work plan, augmented by data network, microwave, satellite and VHF technical diagrams.

18. The individual projects listed in the periodic work plans are not assigned parameters such as start and completion dates, resource inputs, product or service outputs, and accountability and evaluation criteria for proper implementation. Infrastructure projects are monitored through weekly meetings of CITS Unit Supervisors who verbally report their activities. The activity reports are recorded in the minutes of the meetings based on the discussions but not on specific projects. The absence of documented project parameters and corresponding progress reports makes it difficult for UNMIL management to set realistic milestones and confirm when they are reached. Inadequate documentation also blurs transparency making it difficult for management to verify when and whether the expected outcome, such as improved transmission speed, is actually achieved and to what extent. Therefore, management controls in ICT projects are weak, which leaves management at the risk of making decisions based on subjective and unsubstantiated conjecture. Consequently, the investments in communications technology being undertaken by the Mission involve the risk of:

- (a) Inefficiency arising from overruns in project durations and budgets,
- (b) Ineffectiveness arising from poor coordination of human resources and the inability to monitor progress of work and achievement of outcomes, and
- (c) Decreased economy due to diminished quality of the products and services.

19. The need for a dedicated project management team was discussed at the exit conference. Consequently, CITS has established a Project Coordination Unit to be headed by the Chief, Microwave and VSAT Unit to develop and maintain project documentation and to serve as the secretariat to the currently informal project coordination group of unit supervisors.

Change management

20. Besides rationalizing costs and value versus benefits and risks, proper change controls ensure that multiple aspects of the proposed change are considered in tandem and that they align acquisition and development activities with the strategic direction of the Mission. Conversely, the absence of an effective change control mechanism may result in conflicting activities and waste of resources.

21. For example, the Mission recently replaced a commercial service that provided only pre-paid accounts, and its in-house GSM mobile telephone system, with the services of a local GSM provider. The new company, with whom the Mission entered an MOU on 1 July 2006, links a toll-free Closed-User-Group of UNMIL staff to the regular Public Service Telephone Network (PSTN) and also provides post-paid itemized billing. However, records in Galileo indicate that when the Mission began decommissioning its GSM system it also acquired an additional \$600,120 worth of equipment and spare parts for the outgoing system (Purchase Order 7MIL-200027; 24 July 2006) after the Mission had signed the MOU with the incoming service provider. The Mission explained that a long-standing inability to integrate dialing of numbers between the new vendor and UNMIL's PABX had at the time justified retaining UNMIL's GSM. The Mission became aware in late September 2006 that the integrated dialing had been enabled, effectively rendering UNMIL's standalone GSM system redundant, but could not cancel the transaction because the consignment was already in transit. Since ICT change

management procedures are not formalized in the Mission and documentary evidence was not available to support the chronology of events, it was not possible to conclude whether the expenditure of \$600,120 was unavoidable.

22. To ensure thorough consultations and effective oversight of future decisions on ICT that bear significant financial or operational impact, the Mission's ICTRC should include, as an agenda item, the discussion of ICT change management in its meetings, as necessary. Considering that prior to the new consignment the Mission had GSM equipment worth \$815,725 in use and another \$850,755 in stock and that ICT is very dynamic and obsolescence of equipment occurs rapidly, it will not be prudent to keep the \$2,266,600 worth of redundant GSM equipment and spares in UNMIL.

Recommendations 1 and 2

The UNMIL Administration should:

- (i) Make available the global system for mobile communications equipment and spares totaling \$2,266,600 to start-up missions or to the reserve stocks at the United Nations Logistics Base for other missions' use (AP2006/626/05/01); and
- (ii) Ensure that the Mission's Information and Communications Technology (ICT) Review Committee oversees ICT change management when changes to systems, processes and infrastructure are expected to have significant financial or operational impact to the Mission (AP2006/626/05/02).

23. *The UNMIL Administration accepted recommendation 1 and stated that the equipment is on the surplus list and had been offered to the peacekeeping mission in Chad.* Based on the Mission's response, recommendation 1 has been closed.

24. *The UNMIL Administration accepted recommendation 2 and stated that the mission's ICTRC will debate the issue at its next meeting.* OIOS will keep this recommendation open pending the outcome of the ICT Review Committee's discussion and establishment of modalities to oversee significant changes to ICT systems, processes and infrastructure.

B. Disaster recovery and business continuity

Business continuity management

25. DPKO has promulgated a Disaster Recovery and Business Continuity Management Plan aimed at ensuring "the security of data and continuity of mission operations in the event of catastrophic situation and/or evacuation of essential mission staff ..." Responsibility is assigned to CITS and the Business Continuity Specialist in the Mission to coordinate with Mission administration to determine the minimum technical infrastructure required and the level of service needed at the standby facility. This responsibility has not been carried out in UNMIL because the position of a Business Continuity Specialist has been vacant.

26. A comprehensive system exists for backing-up data comprising alternate sites at Star Base and the Pan African Plaza building and further backups are kept in UNLB. There are, however, no plans to ensure that business units would continue to carry out critical operations and provide services at any levels in case communication services were rendered unavailable following a disaster. The common misconception that disaster recovery and business continuity matters are the sole responsibility of ICT technicians is apparent. The absence of work-around procedures designed by the business units puts the operations of the Mission at a high risk of being significantly disrupted in case conventional communication facilities and services are disrupted by a disaster.

27. Due to the overriding importance of keeping Mission-critical systems operational at all times, UNMIL has never intentionally shut down communication services in order to simulate disaster scenarios. The Mission has also not carried out any analysis of post-disaster processes that would be required to support a minimum level of operations critical to the Mission. According to CITS, redundant communication links are in place which are tested when they are installed and when failures occur during operations. The Mission does not develop and retain any documentation from those tests. These omissions are expected to be remedied by the recent assignment of the Business Continuity and Security responsibility for the Mission to the Server Support Group.

Recommendations 3 and 4

The UNMIL Administration should:

(i.) Sensitize business units on disaster recovery and business continuity issues and require them to carry out an analysis of the impact that unavailability of information and communications technology services would have on their operations (AP2006/626/05/03); and

(ii.) On the basis of the business impact analyses (in recommendation 3), design alternative work processes in case of significant disruption to communication services and to determine the minimum infrastructure requirements in case of emergency relocation (AP2006/626/05/04).

28. *The UNMIL Administration accepted recommendation 3 and stated that all business units have been sensitized to the importance of business continuity planning.* OIOS notes that the Director of Administration wrote a note in this regard to Section Chiefs on 21 March 2007. Based on the Mission's response, recommendation 3 has been closed.

29. *The UNMIL Administration accepted recommendation 4 but stated that the current staffing table did not provide for posts with the required expertise to conduct business process analysis and engineering, and that the Mission would request consultant funding in the next budget.* OIOS will keep this recommendation open pending the impact analysis and the design of work-around procedures.

C. Accounting for communication services

Accounting for pre-paid telephone services

30. UN Financial regulations require proper accounting of UN assets. The Telephone Billing Supervisor in UNMIL is responsible for (i) placing orders for pre-paid telephone account recharge cards; (ii) collecting the pre-paid cards from the vendor; (iii) storing them in a safe in his office; (iv) issuing batches to a clerk for distribution to individuals; and (iv) issuing other batches to certain staff members to distribute in their respective sections/units. A running inventory of the receipts, issuances and balances at hand is not maintained. Also, the specified duties are not segregated. Although the bulk issues to various sections/units are adequately accounted for by the respective sections/units, the receipt required from recipients of individual recharge cards from the Telephone Billing Clerk are not always provided as some recharges are done on phone or e-mail. There is no SOP for the control of recharge cards. The lack of SOP, coupled with the insufficiency of records at the Telephone Billing Unit (TBU), makes it impossible to ascertain whether the recharge cards supplied to the Mission are applied to their intended purpose only and whether they are fully accounted for. Detection of any loss or misappropriation of the pre-paid cards would also not be possible.

31. The Mission has recently migrated from the pre-paid services of a previous vendor to the preferred post-paid services of the current vendor. The change over will reduce the volume of recharge cards, which will in turn diminish the risk of loss or misappropriation of the cards. Since pre-paid services will continue, albeit to a lesser extent, it is still necessary that UNMIL devises an accountability mechanism. Following discussion of this observation with TBU and the Finance Section, the latter suggested the: (i) maintenance of a receipt/issue book; (ii) establishment of a monthly ceiling; (iii) maintenance of a comprehensive list of bona fide recipients; (iv) conduct of regular physical counts; and (v) conduct proper hand over of the stocks when the regular custodian is away from the Mission area. The suggestions were immediately adopted by CITS and institutionalized as of 1 September 2006.

Verification of invoices

32. Section 7.3 (e) of contract 4/LBB/CON/004 with the service provider stipulates in bold print that the contractor must ensure that invoices “are accompanied by clear and specific details of the services that have been provided including an itemized traffic spreadsheet in an electronic format with each invoice” and that “the spreadsheet(s) shall include the numbers dialed, the time/date and the duration of calls”. However, there is no procedure in place for verifying the invoices. When the invoices are received by CITS they are certified by the Chief of CITS for payment by the Finance Section without any examination of or corroboration of the supporting details. The TBU only ascertains the name of the vendor and the account to be charged and then recommends the invoices to be certified for payment without explaining the differences that exist between UNMIL records and invoices from the contractor.

33. For example, between January and February 2006 the service provider billed for 112,215 international outgoing calls while UNMIL’s PABX had logged 101,577 calls during the same period. The difference of 10,638 calls (representing a 10 per cent variance) was explained as being caused by a 30 seconds variance in the time set to start recording a call. The service provider starts recording immediately while the UNMIL PABX starts recording 30 seconds into the call. Calls lasting below 30 seconds are not recorded by UNMIL and are generally considered

failed calls. Although this is a loophole that can be and has in fact been exploited elsewhere by certain individuals to make short successive calls which are not recorded, and therefore not charged, the alternative of charging from the moment a call begins would be unfavorable to the staff members because it would result in staff members being charged for unanswered calls. A mechanism that charges calls beginning the moment they are answered should be explored with the contractor. This mechanism would ensure that:

- The existing loophole of not charging calls below 30 seconds is eliminated;
- Traffic recorded by the UNMIL PABX and in the contractor invoices would be compared and any variance between them minimized; and
- The excess of charging staff members for the time that calls remain unanswered would be offset.

Recommendation 5

The UNMIL Administration should establish procedures to verify Wind Telecomunicazioni S.p.A.'s call records against UNMIL's call records before certifying invoices for payment (AP2006/626/05/05).

34. *The UNMIL Administration accepted recommendation 5 stating that it will ensure procedures are in place to verify invoices from the service provider before certifying them for payment.* OIOS will keep this recommendation open pending issuance of the verification procedures.

Telephone billing

35. All staff members are supposed to pay for private international telephone calls. The Mission issues a PIN code to each staff member that gives the person access to direct international dialing. All outgoing calls are logged by the PABX and instantaneously recorded in specialized application software called Ringmaster that sorts calls according to the PIN code and applies the appropriate rates depending on the destinations. The sorted data is loaded into a Microsoft Access database that prints individual bills to the callers. The bills are sent to staff members to identify which of the calls were official and have them certified by their Chief of Section. Calls are assumed private and chargeable if a staff member does not return the bill to CITS. The Telephone Billing Unit then forwards the details of the charges to the Finance Section for the amounts to be deducted from the Mission subsistence allowance (MSA) of the individual.

36. The procedures for telephone billing are sufficiently controlled and are working well. However, based on the man-hours required to process the recovery of telephone charges, the Mission doubts whether any value is derived from processing printed bills for a few cents. It would make more business sense to defer small charges until they accumulate to a pre-determined minimum amount before recovery from the staff member. The Mission is at an advanced stage of implementing an online billing system that is expected to be more informative to the users while reducing the clerical effort of recovering telephone charges.

D. Organization of CITS operations

Staffing

37. Under the current organization structure, three of the eight positions that should report to the Chief of CITS are vacant. As a result of the position of Chief Communications Officer (CCO) being vacant since the beginning of the Mission, the Telephone, VSAT, Rigging, and Mobile units that should report to the CCO are instead each reporting directly to the CCITS, effectively reducing the span of control and making the structure more "top heavy". The positions of Asset Manager and a proposed Disaster Recovery and Network Security Officer are also vacant. Following exit conference discussions, the position of Asset Manager has been filled and the responsibility for Disaster Recovery and Network Security assigned to the Server Support Group.

38. As at 6 November 2006, the CITS had 137 staff on board. There were 24 vacant posts for which candidates were at various stages of recruitment. (Table 3)

Table 3: Staffing at CITS as at 6th November 2006

Category	Positions	On Board	Vacant
International	41	34	7
UN Volunteers	34	31	3
National Staff	68	64	4
Contractor personnel	15	5	10
Independent contractors (national)	None	3	
Total	161	137	24

39. Although all the vacant posts are currently under recruitment, the 15 per cent vacancy rate is significant and places the CITS at a risk of failing to adequately deliver services in support of the Mission's mandate.

Organization structure

40. An effective organization structure for CITS, that is aligned with modern technology and underpinned by sufficient supervisory staff from the outset, is necessary for the effective development and delivery of communication services in the Mission. The CITS in UNMIL is headed by a Chief of Section at the P5 level. It is functionally organized into two main branches that should be headed by staff members at the P4 level, one for Communications and the other for Information Technology. The structure is aligned with the traditionally separate technologies for Communications (radio and telephony) and EDP (computers), and is therefore not conducive for modern ICT.

41. The responsibilities carried out by the 14 functional units of CITS seem to gravitate, in terms of expertise and responsibility, into six clusters which for effective management could be further grouped into three main functions of property control, customer support and

infrastructure operations. In order to effectively manage a combination of routine operations (maintenance and user support) and project-based operations (infrastructure and systems), the CITS needs to adopt a matrix management approach which would combine the hierarchical attributes of functional management with the task-based attributes of project management. In a matrix structure, project teams would be composed of members from the various units in CITS who would report to both their functional supervisor and a project leader.

42. Following discussions regarding the organization structure of CITS, the Mission concurred with the observation and consequently realigned and merged some units. For example;

- COMCEN now reports directly to OIC Communications Unit,
- Applications Support and Development and Server Support Units are now merged into one unit,
- Help Desk support personnel and regional personnel have been given more autonomy and administrative access level rights, and
- Repair and maintenance of Uninterruptible Power Supply (UPS) units has been re-assigned from the IT Workshop to Mobile Communications Unit.

43. The Mission however considers it prudent, and OIOS concurs, to wait for the arrival of the Chief Communications Officer and the Chief of CITS before making any further changes.

Recommendation 6

The UNMIL Administration should conduct a comprehensive analysis of the functions of the Communications and Information Technology Section to establish an organization structure that is aligned with the modern trends of a unified information and communications technology and is disposed to respond equally to functional management as well as project management (AP2006/626/05/06).

44. *The UNMIL Administration accepted recommendation 6 and stated that a comprehensive analysis as recommended will take place after the arrival of the new Chief of CITS.* OIOS will keep this recommendation open pending completion of the exercise.

User support

45. By virtue of the largely merged modern technology, an effective user support function is expected to coordinate joint activities and optimize multiple skill sets. The recent advent of Voice Over Internet Protocol (VOIP) technology is yet another advance in ICT that has placed telephony and computers into an inseparable system. Technical support in CITS is however organized into two separate units with similar work and responsibilities; a Regional Support Unit and a User Support Unit. The Regional Support Unit has officers located at the sectors while the User Support Unit is based at the Mission headquarters in Monrovia. Both units, the largest in CITS, are manned by 14 staff members each and supervised by staff members at the FS5 and P3 level. It is not apparent why two separate units are required and why both report directly to the CCITS. Despite the high staffing ratio (20 per cent of total CITS staff), user support services by the CITS in UNMIL perform poorly. The technicians at sectors who are required to respond

quickly to local needs cite poor mobility due to bad roads, inadequate transportation, and restrictive MOSS requirements as impediments to their work. The technicians at headquarters cite exigency of work in senior management offices and dependency on actions of other Units.

46. There is no SOP to guide the technicians and the users on the course of action given the varied requests that are made. In the absence of a policy and standard procedures for technical support, most users resort to personal contacts for help. The Mission is in the process of implementing a Helpdesk application that will streamline work requests and processing. A campaign is also under way to train users in the basic elements of using ICT resources. A network of user focal points would further streamline user support.


Recommendation 7

The UNMIL Administration should appoint a staff member from among the information and communications technology users in every section/unit as the focal point to liaise with the Communications and Information Technology Section, to minimize calls to the Helpdesk for minor problems that can be resolved within a section/unit (AP2006/626/05/07).

47. *UNMIL Administration accepted recommendation 7 and stated that local networks of Users already operate as recommended.* OIOS will keep this recommendation open pending receipt of documentation showing that focal points for ICT have been appointed in all Sections/Units.

III. ACKNOWLEDGEMENTS

48. We wish to express our appreciation to the management and staff of UNMIL for the assistance and cooperation extended to the auditors during this assignment.


Dagfinn Knutsen, Acting Director
Internal Audit Division, OIOS

UNITED NATIONS



OIOS Client Satisfaction Survey

Audit of: Management of telecommunications in UNMIL

(AP2006/626/05)

	1	2	3	4	5
By checking the appropriate box, please rate:	Very Poor	Poor	Satisfactory	Good	Excellent
1. The extent to which the audit addressed your concerns as a manager.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The audit staff's understanding of your operations and objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Professionalism of the audit staff (demeanour, communication and responsiveness).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The quality of the Audit Report in terms of:					
• Accuracy and validity of findings and conclusions;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Clarity and conciseness;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Balance and objectivity;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Timeliness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The extent to which the audit recommendations were appropriate and helpful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The extent to which the auditors considered your comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your overall satisfaction with the conduct of the audit and its results.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please add any further comments you may have on the audit process to let us know what we are doing well and what can be improved.

Name: _____ Title: _____ Date: _____

*Thank you for taking the time to fill out this survey. Please send the completed survey as soon as possible to:
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