



INTERNAL AUDIT DIVISION

REPORT 2016/165

Audit of management of engineering projects in the United Nations Organization Stabilization Mission in the Democratic Republic of the Congo

There was a need to implement a proper governance structure for managing all major engineering projects and better plan and monitor projects

15 December 2016
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Audit of management of engineering projects in the United Nations Organization Stabilization Mission in the Democratic Republic of the Congo

EXECUTIVE SUMMARY

The objective of the audit was to assess the adequacy and effectiveness of governance, risk management and control processes over management of engineering projects in the United Nations Organization Stabilization Mission in the Democratic Republic of the Congo (MONUSCO). The audit covered the period from 1 January 2015 to 31 July 2016 and included a review of governance, oversight and management of engineering projects.

MONUSCO had prepared proposals for major engineering projects and task orders for non-major projects. However, the Mission needed to: (a) properly constitute a Project Management Group (PMG); (b) ensure adequate planning and monitoring of projects; (c) use the approved information management system to record project details and progress; and (d) enforce the requirement for detailed project closure reporting.

OIOS made five important recommendations. To address issues identified in the audit, MONUSCO needed to:

- Properly constitute its PMG with clear terms of reference to oversee all major construction projects and to ensure that the PMG performs its mandated tasks, including: (a) oversight of the planning and implementation of all major projects; and (b) ensuring the Head of Mission approves all major projects valued at over \$5 million;
- Take effective measures to: (a) confirm the availability and capability of military enablers during project planning; (b) factor realistic lead-time for the procurement of materials in project plans; (c) include all information such as start and completion dates in all project proposals and task orders; and (d) monitor the cost of all projects;
- Provide access to Engineering Section staff and ensure the use of an approved information management system to record project details and progress;
- Enforce the requirement for detailed project closure reporting; and
- Establish a filing system for classifying, retaining and retrieving engineering project documents.

MONUSCO accepted the recommendations and has initiated action to implement them.

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Audit of management of engineering projects in the United Nations Organization Stabilization Mission in the Democratic Republic of the Congo

I. BACKGROUND

1. The Office of Internal Oversight Services (OIOS) conducted an audit of management of engineering projects in the United Nations Organization Stabilization Mission in the Democratic Republic of the Congo (MONUSCO).
2. The Engineering Section is responsible for providing engineering services in MONUSCO including planning, designing, constructing and maintaining buildings, roads and airports. During the period from 1 January 2015 to 31 July 2016, MONUSCO implemented 142 engineering projects valued at \$43.3 million.
3. The Engineering Section is headed by a staff at the P-5 level that reports to the Chief, Service Delivery and is supported by 46 international staff, 50 United Nations volunteers and 436 national staff. The Section also routinely augmented its resources with personnel provided by the United Nations Office for Project Services. The 2014/15 and 2015/16 budgets for the Engineering Section were \$40.1 million and \$42.7 million, respectively.
4. Comments provided by MONUSCO are incorporated in italics.

II. AUDIT OBJECTIVE, SCOPE AND METHODOLOGY

5. The objective of the audit was to assess the adequacy and effectiveness of governance, risk management and control processes over management of engineering projects in MONUSCO.
6. This audit was included in the 2016 risk-based work plan of OIOS due to the operational and financial risks related to engineering projects in MONUSCO.
7. OIOS conducted this audit from August to October 2016. The audit covered the period from 1 January 2015 to 31 July 2016. Based on an activity-level risk assessment, the audit covered higher and medium risks related to engineering projects, which included: (a) project governance and oversight; and (b) project management.
8. The audit methodology included: (a) interviews of key personnel; (b) review of relevant documentation; (c) analytical reviews of data; and (d) sample testing of controls. OIOS selected a judgmental sample of 20 projects with a combined value of \$22 million and with individual values ranging from \$15,000 to \$14 million.

III. OVERALL CONCLUSION

9. MONUSCO prepared proposals for major engineering projects and task orders for non-major projects. However, the Mission needed to: (a) properly constitute a Project Management Group (PMG) and ensure that it performed its mandated tasks; (b) ensure adequate planning and monitoring of projects; (c) use the approved information management system to record project details and progress; and (d) implement measures to ensure detailed project closure reporting was done.

IV. AUDIT RESULTS

A. Project governance and oversight

There was need to properly constitute and revise the terms of reference of the PMG

10. The Departments of Peacekeeping Operations and Field Support (DPKO/DFS) guidelines on governance of major construction projects require: (a) MONUSCO to establish a PMG to formally authorize and monitor all major engineering projects, which are defined as projects with an estimated cost of \$1 million or more and oversee their planning and implementation; and (b) the Head of Mission to formally approve each construction project valued at over \$5 million.

11. While the Mission established a PMG, the Group did not oversee all major engineering projects, which were: road project in Goma valued at \$4 million; runway and airport upgrade project in Beni valued at \$2.3 million; and land development project in Goma valued at \$14 million. The PMG was only overseeing the land development project. The PMG also did not include a Force Engineer.

12. A review of the activities of the PMG showed that it did not formally authorize and adequately oversee the planning and implementation of the land development project. It convened only two of the required seven times during the audit period and did not follow up during the second meeting on the implementation status of seven action points identified during its first meeting. The Head of Mission also did not approve the land development project. This occurred because the Engineering Section and Mission Support did not advise the senior mission leadership about the need to: constitute a PMG to oversee all major projects; include the Force Engineer; obtain the approval of the Head of Mission for all major construction projects valued at over \$5 million; and take effective measures to ensure the PMG performed its mandated tasks.

13. As a result, there was a risk: that the Mission's construction activities were not fully in line with its concept of operation; and of delays in project completion. For example, the first phase of the land development project had been delayed by two months as at 31 October 2016. The lack of an effective project oversight mechanism also posed the risk of reduced accountability for construction activities.

(1) MONUSCO should: properly constitute a Project Management Group (PMG) by including the Force Engineer and providing the Group with clear terms of reference to oversee all major construction projects; take measures to ensure that the PMG performs its mandated tasks, including oversight of the planning and implementation of all major projects; and ensure that the Head of Mission approves major projects over \$5 million.

MONUSCO accepted recommendation 1 and stated that it was reconstituting its PMG, with clear terms of reference, and would ensure that the Head of Mission approved major projects over \$5 million. Recommendation 1 remains open pending receipt of evidence that MONUSCO has reconstituted its PMG with clear terms of reference and the Head of Mission has approved major projects over \$5 million.

B. Project management

Need for improved planning and monitoring of engineering projects

14. The DPKO/DFS Engineering Support Manual requires MONUSCO to: prepare a detailed plan for each project with planned start and completion dates, sequence of activities, timing and milestone dates; monitor the implementation of engineering projects against the relevant detailed plans and prepare related progress reports.

15. A review of the Galileo project tracking module and records of 20 projects (including 2 major and 18 non-major) indicated that the Engineering Section had prepared a proposal for each major project and a task order for each non-major project with the estimated cost and description of resources required. Also, bills of quantities were prepared and they formed the basis for determining resource requirements of each project which were included in the proposals and task orders. The Mission, through the Supply Chain Management Section, reviewed the availability of materials in stock.

16. However, projects were not properly planned as: (a) the availability and capability of military enablers and realistic lead-times for the procurement of materials were not properly factored into the planning; (b) project designs and scope of works required frequent changes during execution; and (c) task orders for six projects with a combined value of \$156,396 did not include the planned start and completion dates. Also, projects were not adequately monitored as progress reports did not compare actual and budgeted costs.

17. The above occurred because the Engineering Section did not take effective measures to: (a) confirm the availability and capability of military enablers during project planning; (b) factor realistic lead-time for the procurement of materials in the plans; (c) include all information such as start and completion dates in proposals and task orders; and (d) monitor the cost of projects. As a result, the Mission delayed completing 11 of 20 reviewed projects by an average of 12 months and incurred \$103,816 in additional labor costs for the renovation of its headquarters in Kinshasa.

(2) MONUSCO should implement measures to: (a) confirm the availability and capability of military enablers during project planning; (b) factor realistic lead-time for the procurement of materials in project plans; (c) include all information such as start and completion dates in all project proposals and task orders; and (d) monitor the cost of all projects.

MONUSCO accepted recommendation 2 and stated that it would confirm the availability and compatibility of military engineering capabilities during project planning, factor realistic lead-times for the procurement of materials in project planning and ensure that all project proposals and task orders include all required information. Recommendation 2 remains open pending receipt of evidence that planning of engineering projects include confirmation of the availability and compatibility of military enablers and realistic lead-time for the procurement of materials, that all project proposals and task orders include all required information and that project costs are monitored.

Need to enhance mechanisms for recording and tracking engineering projects

18. The DPKO/DFS Engineering Support Manual requires MONUSCO to maintain a system for recording projects budget and actual costs, planned and actual start and completion dates, and details of change orders.

19. A review of the Mission's Galileo project tracking module and 20 project records indicated that the Engineering Section had not recorded in Galileo all required details such as budgeted and actual costs, planned start and completion dates, and details of change orders for any of the 20 projects. This occurred because project managers were not given proper access to update Galileo; only Supply Chain Management Section had been given access privilege to Galileo. As a result, there was reduced capacity for the Engineering Section staff to control and provide accurate accounting of projects. For example, MONUSCO could not provide information on the value of 77 projects implemented in Bukavu, Goma and Kinshasa.

(3) MONUSCO should ensure that the Engineering Section staff have appropriate access rights to the approved information management systems in order to record projects' budgeted and actual costs, planned and actual start and completion dates, and details of change orders.

MONUSCO accepted recommendation 3 and stated that it had introduced a mechanism to ensure that all required information was captured in order to address the limitation of the project planning module in Galileo. Recommendation 3 remains open pending receipt of evidence that the Mission has recorded project details in the approved information management systems such as Galileo and Umoja.

Need for improved project closure reporting

20. The DPKO/DFS guidelines on governance of major construction projects and the MONUSCO standard operating procedures on engineering require project managers to initiate project closure and prepare a project closure report for each completed engineering project.

21. A review of the records of 14 of 111 completed projects, including one major project indicated that project managers prepared the required project closure reports. However, the project closure reports for 12 sampled projects were not sufficiently comprehensive and accurate as they did not include: comparative analyses of budgeted and actual costs, the planned and actual completion dates, and key lessons learned. This occurred because MONUSCO had not implemented effective measures to enforce the requirement for detailed project closure reporting. For example, there was no evidence that the completed closure reports were reviewed by senior staff of the Engineering Section. As a result, the Mission missed opportunities to identify lessons and use them to enhance the planning and implementation of future engineering projects.

(4) MONUSCO should prepare detailed project closure reports that include comparative analyses of budgeted and actual costs, the planned and actual completion dates, and key lessons learned.

MONUSCO accepted recommendation 4 and stated that it was in the process of closing outstanding projects in Galileo and would ensure that all project closure reports contain the required analyses of budgeted and actual costs, planned and actual completion dates and any key lessons learned. Recommendation 4 remains open pending receipt of copies of project closure reports with sufficient details.

Need to maintain project records with complete information

22. The United Nations archiving and record management policy requires MONUSCO to keep project documents for at least five years after completion of the projects.

23. A review of project files for 20 projects indicated that they did not contain one or more of the required documents including: proposals, approvals to implement the projects and material requests. This was because MONUSCO had not established and implemented a document filing system for its engineering projects. As a result, there was a risk of adequate records of completed projects, which may reduce the Organization's ability to identify lessons and use them to improve the design and implementation of future projects.

(5) MONUSCO should establish a filing system for classifying, retaining and retrieving engineering project documents.

MONUSCO accepted recommendation 5 and stated that it had taken steps to improve the filing system for engineering projects by ensuring that files were complete and properly organized. Recommendation 5 remains open pending receipt of evidence of implementation of the improved filing system for engineering projects.

V. ACKNOWLEDGEMENT

24. OIOS wishes to express its appreciation to the management and staff of MONUSCO for the assistance and cooperation extended to the auditors during this assignment.

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

STATUS OF AUDIT RECOMMENDATIONS

**Audit of management of engineering projects in the
United Nations Organization Stabilization Mission in the Democratic Republic of the Congo**

| Rec. no. | Recommendation | Critical ¹ / Important ² | C/ O ³ | Actions needed to close recommendation | Implementation date ⁴ |
|----------|--|---|----------------------|---|----------------------------------|
| 1 | MONUSCO should: properly constitute a Project Management Group (PMG) by including the Force Engineer and providing the Group with clear terms of reference to oversee all major construction projects; take measures to ensure that the PMG performs its mandated tasks, including oversight of the planning and implementation of all major projects; and ensure that the Head of Mission approves major projects over \$5 million. | Important | O | Receipt of evidence that MONUSCO has reconstituted its PMG with clear terms of reference projects and the Head of Mission has approved major projects over \$5 million. | 30 June 2017 |
| 2 | MONUSCO should implement measures to: (a) confirm the availability and capability of military enablers during project planning; (b) factor realistic lead-time for the procurement of materials in project plans; (c) include all information such as start and completion dates in all project proposals and task orders; and (b) monitor the cost of all projects. | Important | O | Receipt of evidence that planning of engineering projects include confirmation of the availability and compatibility of military enablers and realistic lead-time for the procurement of materials, that all project proposals and task orders include all required information and that project costs are monitored. | 30 June 2017 |
| 3 | MONUSCO should ensure that the Engineering Section staff have appropriate access rights to the approved information management systems in order to record projects' budgeted and actual costs, planned and actual start and completion dates, and details of change orders. | Important | O | Receipt of evidence that the Mission has recorded project details in the approved information management systems such as Galileo and Umoja. | 30 June 2017 |
| 4 | MONUSCO should prepare detailed project closure reports that include comparative analyses of budgeted/actual costs, the planned/actual completion dates, and key lessons learned. | Important | O | Receipt of copies of project closure reports with sufficient details. | 30 June 2017 |
| 5 | MONUSCO should establish a filing system for classifying, retaining and retrieving engineering project documents. | Important | O | Receipt of evidence of implementation of the improved filing system for engineering projects. | 31 March 2017 |

¹ Critical recommendations address critical and/or pervasive deficiencies in governance, risk management or control processes, such that reasonable assurance cannot be provided with regard to the achievement of control and/or business objectives under review.

² Important recommendations address important (but not critical or pervasive) deficiencies in governance, risk management or control processes, such that reasonable assurance may be at risk regarding the achievement of control and/or business objectives under review.

³ C = closed, O = open

⁴ Date provided by MONUSCO in response to recommendations.

APPENDIX I

Management Response

Management Response

**Audit of management of engineering projects in the
United Nations Organization Stabilization Mission in the Democratic Republic of the Congo**

| Rec. no. | Recommendation | Critical ¹ / Important ² | Accepted? (Yes/No) | Title of responsible individual | Implementation date | Client comments |
|----------|--|--|--------------------|---|---------------------|---|
| 1 | MONUSCO should properly constitute its Project Management Group (PMG) by including the Force Engineer and providing it with clear terms of reference to oversee all major construction projects; take adequate and effective measures to ensure that the PMG performs its mandated tasks, including the oversight of the planning and implementation of all major projects; and ensuring the Head of Mission approves major projects valued at over \$5 million. | Important | Yes | Chief Engineer, DMS, project manager | 30 June 2017 | MONUSCO is reconstituting its Project Management Group to include all required members and will provide the group with clear terms of reference to perform its mandated tasks; and will ensure that the Head of Mission approves any future major projects valued at over five million dollars. |
| 2 | MONUSCO should take effective measures to: (i) confirm the availability and capability of military enablers during projects' planning; (ii) factor realistic lead-time for the procurement of materials are adequately considered in the plans; (iii) include all information such as start/completion dates in proposals and task orders; and (iv) monitor the cost of projects. | Important | Yes | Chief Engineer, Chief Procurement Officer, Force DCOS, DMS, Chief SD, Force Engineer, Chief SCM | 30 June 2017 | MONUSCO will (i) include in its project planning, confirmation that military engineering contingents are available, and their contingent owned equipment is compatible with the project requirements and that lead-times for the procurement of materials are realistic; and (ii) ensure that all project proposals and task orders include all required information. |
| 3 | MONUSCO should use the approved information management systems to record projects' budgeted/actual costs, | Important | Yes | Chief Engineer and project | 30 June 2017 | MONUSCO has introduced a mechanism to improve the project planning module which will ensure |

¹ Critical recommendations address critical and/or pervasive deficiencies in governance, risk management or control processes, such that reasonable assurance cannot be provided with regard to the achievement of control and/or business objectives under review.

² Important recommendations address important (but not critical or pervasive) deficiencies in governance, risk management or control processes, such that reasonable assurance may be at risk regarding the achievement of control and/or business objectives under review.

Management Response

**Audit of management of engineering projects in the
United Nations Organization Stabilization Mission in the Democratic Republic of the Congo**

| Rec. no. | Recommendation | Critical ¹ / Important ² | Accepted? (Yes/No) | Title of responsible individual | Implementation date | Client comments |
|----------|--|---|-----------------------|--|------------------------|--|
| | planned/actual start/completion dates, and details of change orders. | | | managers | | that all required information is captured in order to address the limitation of the module in Galileo. This includes inserting information in the remarks of the project document in Galileo related to non-expendable assets and other relevant information, which couldn't be appended in the system. In addition, all infrastructure assets and buildings constructed internally are being reported and recorded in Real Estate Module Umoja. |
| 4 | MONUSCO should prepare detailed project closure reports that include comparative analyses of budgeted/actual costs, the planned/actual completion dates, and key lessons learnt. | Important | Yes | Chief Engineer, Engineering Section Budget officer and various project managers | 30 June 2017 | MONUSCO is in the process of closing outstanding projects in Galileo and will ensure that all project closure reports contain the required analysis of budgeted and actual costs, planned and actual completion dates and any key lessons learnt. |
| 5 | MONUSCO should establish a filing system for classifying, retaining and retrieving engineering project documents. | Important | Yes | Chief Engineer and Operations Unit Engineer | 31 March 2017 | MONUSCO has taken steps to significantly improve its filing system by ensuring that all files are complete and properly organized in both hard and soft copy and are available in the Section's share drive. |