

**For discussion  
on 17 January 2011**

**Legislative Council Panel on Security  
Review on Procurement of Fire Services Equipment**

**Purpose**

This paper briefs Members on the findings of a study conducted by the Efficiency Unit (EU) on the procurement of fire services equipment and the Administration's plan for the implementation of the recommendations set out in the study report.

**Background**

2. At the meeting on 6 July 2010, Members were informed vide LC Paper No. CB(2)1948/09-10(05) that the Security Bureau (SB) and the Fire Services Department (FSD) had co-commissioned the EU to conduct a study to improve the procurement process of fire services equipment. The scope of the study include –

- (a) the procurement arrangement of FSD;
- (b) the organisation and manpower for procurement at the FSD;
- (c) the potential application of information technology management systems in support of logistics management; and
- (d) review on the training arrangement for frontline staff in the use of newly procured equipment.

3. During the course of the study, the EU consulted frontline staff of FSD and visited various units responsible for procurement and acceptance testing as well as the end-user units. The EU had also taken into account the views raised by staff representatives. The EU completed the study and submitted a report to the SB and the FSD in December 2010. The Executive Summary of the study report is attached at **Annex** for Members' reference.

**Findings and recommendations**

4. The study has identified issues of concern in the areas of procurement process, organisation, performance management and information

technology –

- (a) The FSD lacks a holistic plan on major equipment procurement. For individual procurement projects, the department also lacks a structural planning and management process;
- (b) For uniform, information on consumption and inventory level of individual sizes of uniform is not readily available. The batch processing of large amount of requests for uniform has lowered the efficiency of uniform delivery;
- (c) FSD does not have a dedicated team to manage major procurement projects. Depending on the type of equipment involved, the procurement work is currently handled by various business units. While the Logistics Unit is staffed by supplies professionals, it is tied up with minor purchases and can only provide limited support for major procurement projects;
- (d) The FSD does not have an effective management framework for monitoring its procurement performance and early detection of potential issues; and
- (e) As FSD does not have an integrated procurement computer system, many transactions have to be conducted in a manual, labour intensive manner. There is no readily available management information to enable the department to monitor the effectiveness of its procurement and inventory management operations, assess its suppliers' performance and support procurement planning.

5. To address the above issues, the EU recommended the FSD to take the following improvement measures –

***Improving procurement planning and processes***

- A procurement strategy that supports FSD's corporate objectives should be drawn up. The strategy should include a long-term plan on procurement of strategic fire services equipment. To enhance project delivery, a comprehensive project plan should be developed for each major procurement exercise. The project plan should encompass the whole procurement project cycle, including training arrangements to ensure that end-user can use the new equipment effectively.
- For uniforms, comprehensive records on the consumption and inventory of uniforms should be built. A replenishment mechanism, with pre-determined safety stock levels, should also be established.

Furthermore, the existing arrangement of batch processing of requests should be improved, for example through reducing the batch size by half and increasing the frequency of receiving requests, so that uniforms could be replenished more efficiently. In the longer run, the FSD should develop market interest for uniform supply and explore the feasibility of end-to-end delivery of uniforms to frontline fire stations and ambulance depots by suppliers.

### ***Setting up a dedicated Procurement Group***

- FSD should reorganise the staff of relevant units and establish a dedicated Procurement Group to coordinate all procurement projects. The Procurement Group should comprise supplies officers with experience in procurement and fire services personnel with operational experience. To cater for projects with various levels of complexity, a centre-led procurement model is recommended. Under this model, the Procurement Group should take charge of the entire procurement process for general equipment. For complex procurement involving specialised equipment, a cross functional project team comprising members from the Procurement Group and user section(s) should be formed. This would enable the project team to possess the necessary procurement expertise as well as subject knowledge of the equipment to be procured.
- Appropriate training should be provided to staff of the Procurement Group. A knowledge management system should also be developed to enable effective retention and sharing of procurement knowledge and experience. In addition, FSD should explore the feasibility of delegating the authority for minor purchases to user sections.

### ***Strengthening performance management***

- The FSD should develop performance measures to ensure that the right equipment is procured at the right time. Moreover, a performance reporting mechanism should be set up so that the management can regularly review and monitor the performance of the procurement function.

### ***Adopting risk mitigation measures***

- The FSD should take specific measures for individual procurement items in order to lower the risk of purchasing unsuitable equipment. For example, the FSD may introduce additional testing requirements in the tender specifications and stipulate more vigorous tender assessment criteria.

### ***Improving information technology capability***

- An integrated computer system should be developed to help improve FSD's procurement efficiency and effectiveness. The FSD is planning to develop an Asset Management and Maintenance System (AMMS). The key modules include planning, acquisition, inventory control, asset management and maintenance, etc. The EU will conduct a business process review shortly to ensure that the computer system to be developed can achieve the intended purpose. We plan to consult the Legislative Council on the detailed plan and the resources required for the AMMS within this year.
- Before the AMMS is put into operation, the FSD should introduce a simple database in the department's uniform store, together with the use of e-forms, to enhance the efficiency of managing the inventory record of uniforms, stock replenishment and request for uniform replacement.

6. SB and FSD accept the EU's recommendations in full. The FSD has already set up a working group to follow up on the implementation of the above recommendations and improvement measures. In addition, SB will set up a task force comprising representatives from the SB, FSD and EU to monitor the progress of implementation.

### **Response to the recommendations of the Coroner's Court in respect of the Cornwall Court fire**

7. In respect of the No. 5 Alarm fire at Cornwall Court on Nathan Road, Mong Kok on 10 August 2008, the Coroner's Court handed down its decision on 2 November 2010, which included a number of recommendations for the FSD. As some of the recommendations are related to the procurement of fire services equipment, we would like to take the opportunity to brief Members on the progress of FSD's follow-up actions.

### ***Replacement of radio communications system***

8. We have always attached great importance to the work safety of frontline staff. Before the incident at Cornwall Court, the FSD has already started preparatory work for replacing the radio communications system. The new system is expected to commence operation in July 2011. It will offer improved voice quality and better protection against interference. To enhance radio communications inside buildings, the FSD will procure hand-held repeaters and install mobile repeaters on fire appliances for the transmission of communications signals at the fire scenes. Furthermore, when the digitised communications channels are in use, they cannot be interrupted by other users. This will avoid channel jamming under heavy use. With the above measures,

radio communication by firemen at the scene will be improved.

***Emergency button for new handheld radio sets***

9. An “emergency button” will be added to the new hand-held radio sets. Any fireman who requires urgent assistance at the fire scene can seek help from other colleagues on the same radio channel by activating this button immediately. Before the new communications system is ready for launch, the FSD will enhance training on radio communications for frontline staff. They will be reminded them to observe strict radio discipline, which includes keeping messages brief to avoid occupying a channel for too long and reducing the possibility of radio congestion at the scene.

***Assessment on the capacity of breathing apparatus cylinder***

10. The water capacity of the air cylinders currently used by FSD is 6.7 litres, which is similar to the capacity of cylinders commonly used around the world. A fireman’s rate of consumption of the air inside his breathing apparatus (BA) cylinders depends on a number of factors, which include the fireman’s experience and physical conditions, nature of his tasks, as well as the conditions at the scene of emergency. While larger cylinders would provide greater air capacity, the air consumption rate will also increase as the fireman needs to exert more energy in carrying the larger cylinders due to their increased size and weight. Larger cylinders will also reduce the firemen’s mobility. As a matter of fact, when fighting fire in a multi-storey building, firemen may not necessarily need to proceed to the fire ground at high level from the ground floor on foot. Alternatively, they may proceed to a level close to the fire scene by using firemen's lift, or establish a Forward Command Post on a refuge floor at higher levels to provide support. The air consumption rate can be effectively reduced in this manner. This will allow the firemen to reduce air consumption effectively. Based on these reasons, the FSD considers the capacity level of the existing BA cylinder appropriate. Notwithstanding the above, the FSD is conducting tests on larger cylinders to collect relevant data for comparison.

**Advice sought**

11. Members are invited to note the content of this paper.

**Security Bureau  
Fire Services Department  
January 2011**

## **Management Study on Procurement and Related Management Issues**

### **Executive Summary**

At the request of the Security Bureau and the Fire Services Department (FSD), the Efficiency Unit conducted a management study on the FSD with a view to expediting the procurement process of fire services equipment, and ensuring timely delivery and use of newly acquired equipment. This executive summary presents the main findings and recommendations of the study.

#### **Procurement of Fire Services Equipment**

2. The FSD employs various fire services equipment such as fire appliances, fireboats, protective equipment, fire fighting equipment, rescue equipment and communications systems to deliver its core service of fire fighting and rescue.

3. In 2009-10, \$515 million was set aside for the FSD to procure fire services equipment, an increase of 130% compared with 2008-09. This reflects the drastic increase in procurement activities arising from bunching of large-scale replacements of breathing apparatus, radio communications system and fire appliances.

#### **Main Findings**

4. In recent years, the department has introduced various measures to improve the procurement of fire services equipment. The major ones include making an early start on tender preparations for supply of some fire services equipment before funding approval, expanding the Standard Stowage Review Committee's scope to cover fire services equipment, closely monitoring of uniform inventory level, and improving the availability of training materials.

5. Our main findings are:

- (a) The FSD lacks a holistic strategy that sets out its long-term plan on procurement of strategic fire services equipment. This probably accounts for the bunching of major equipment replacements in recent years which taxed the department's efforts to effectively manage its

procurement projects. For individual procurement projects, the department does not have a structural planning and management process. This hinders its procurement effectiveness and efficiency, e.g. procurement of fire appliances.

- (b) For uniform, it is difficult to manage staff requests since the information on consumption and inventory level of individual sizes of uniform is not readily available. Various procurement practices have affected the market interest on supply of uniforms to the department. The batch processing of large amount of requests for uniform has lengthened the delivery time to about two months.
- (c) Depending on the type of equipment involved, fire services equipment procurement is mainly handled by various business units (eight in total) without supplies professionals. While the Logistics Unit is staffed by supplies professionals, it is tied up with minor purchases and can only provide limited support for major procurement projects.
- (d) The department does not have an effective management framework for monitoring its procurement performance and early detection of potential issues.
- (e) The department does not have an integrated procurement computer system. Many transactions have to be conducted in a manual, labour intensive manner. There is no readily available management information to enable the department to monitor the effectiveness of its procurement and inventory management operations, assess its suppliers' performance and support procurement planning.

## **Main Recommendations**

6. Our study indicates that the FSD should focus its effort to improve its procurement capability in relation to: planning and process, organisation, performance management, and information technology.

7. Our recommendations are summarised below.

### ***Improving procurement planning and processes***

8. A procurement strategy that supports FSD's corporate objectives should be drawn up. The strategy should outline the priority areas on procurement and include a long-term plan on procurement of strategic fire services equipment, e.g. fire appliances and information system, etc. To enhance project delivery, a comprehensive project plan should be developed

for each major procurement exercise. The project plan should encompass the whole project cycle from identification of needs to disposal of equipment. To ensure that end-user can use the new equipment effectively, the project plan should outline the training arrangements. Best project delivery practices such as project management and risk management should be employed.

9. For fire appliances, the above measures are of particular relevancy since many fire appliances are due for replacement in the coming years. To ensure timely completion of the procurement, the initiative of making an early start on tender preparations should be adopted for the procurement of fire appliances and other fire services equipment.

10. For uniforms, comprehensive records on the consumption and inventory of individual sizes of uniforms should be built. A replenishment mechanism, with pre-determined safety stock levels, should be established. To increase market interest on uniform supply contracts, existing contracts should be bundled into large term contracts with longer durations. Regarding the batch processing of requests, the batch size should be reduced by at least half to shorten the request-to-delivery time. In the medium-term, the FSD should explore the option of tapping the private sector's skills and technologies on logistics for end-to-end delivery of uniforms to end users.

### ***Enhancing organisational capability***

11. A Procurement Group comprising the Logistics Unit and fire officers with operational experience should be established to coordinate all procurement projects. To cater for projects with various levels of complexity, a centre-led procurement model is recommended. Under this model, the Procurement Group takes charge of the entire procurement process for general equipment. For complex procurement, e.g. those involving specialist equipment, a cross functional project team comprising members from the Procurement Group and user section(s) should be formed. This would enable the project team to possess the necessary procurement expertise as well as subject knowledge of the equipment to be procured.

12. We propose that the Procurement Group be set up by reorganising the Safety and Logistics Group and creating four new posts, namely, a Divisional Officer, an Assistant Divisional Officer, a Senior Station Officer/Station Officer and a Senior Supplies Officer. Appropriate training should be provided to the Procurement Group staff. A knowledge management system should be developed to enable effective retention of procurement knowledge.



13. FSD should also explore the feasibility of delegating the authority for minor purchases to user sections.

14. To cope with the additional workload arising from procurement of FA, the existing time-limited Electrical and Mechanical Engineer (Fire Appliances) post in the Workshops and Transport Division should be converted into a permanent one.

### ***Strengthening performance management***

15. Meaningful performance measures should be developed. As a start, the FSD should structure its performance measures along the objectives of (a) getting the right equipment to end users at the right time at acceptable cost, and (b) achieving the targets set out in the procurement strategy.

16. A performance reporting mechanism should be set up so that the management can regularly review the performance of the procurement function and ensure that it meets the operational needs of the department.

### ***Improve information technology capability***

17. An integrated computer system should be developed to help improve FSD's procurement efficiency and effectiveness. It is noted that the department is planning to develop an Asset Management and Maintenance System (AMMS). The key modules include planning, acquisition, purchase order, inventory control, asset management and maintenance, and disposal.

18. Given the complexity of the system, it has been decided that a business process review should be conducted by the Efficiency Unit. The review will map out the business process such as procurement, scheduled and unscheduled maintenance, asset replacement, inventory management, etc under the computerised environment. We will commence the review shortly.

### **Way forward**

19. There are long-term and short-term implementation arrangements. In the short term, FSD should :

- (a) establish a Procurement Group;
- (b) develop a comprehensive procurement strategy;
- (c) formulate project plans for all complex procurements;

- (d) develop performance measures and a reporting mechanism to facilitate the monitoring of procurement performance;
- (e) explore the feasibility of devolving minor purchases to user sections;
- (f) convert the existing time-limited engineer post into a permanent one;
- (g) make an early start on tender preparations for procurement of fire appliances and other fire services equipment;
- (h) build a comprehensive uniform inventory record and reduce the batch size of requests for uniform items.

20. In the medium to long term, the FSD should develop the AMMS to support planning and procurement. FSD should also develop market interest for uniform supply and explore end-to-end delivery of uniforms by private sector.

21. Fire services equipment is a critical component for delivery of FSD's fire fighting and rescue services. Upon endorsement of this report, a working group should be formed to work out and execute the detailed implementation plan. A high level task force should be set up to monitor the implementation.