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13 May 2014

Clerk to the Panel on Economic Development
Legislative Council
Legislative Council Complex
1 Legislative Council Road
Central, Hong Kong
(Attn: Ms. Michelle NIEN)

Dear Ms. NIEN,

Our reply to the questions raised by Hon. Albert CHAN on 21 March is set out in the ensuing paragraphs.

The key objective of the Civil Aviation Department (CAD) in replacing its air traffic control system is to enhance the capacity and efficiency of air traffic management, with a view to supporting the continuous growth in air traffic, and meeting the global development in air transport and aviation technology, as well as the latest aviation requirements of the International Civil Aviation Organisation. The system procured by the CAD fully meets the international requirements for air traffic management. The Government maintains stringent requirements in relation to procurement. The CAD has strictly followed the relevant rules and procedures as stipulated in the Government Stores and Procurement Regulations (SPR) and the Agreement on Government Procurement of the World Trade Organisation (WTO GPA) throughout the procurement process of the new air traffic control system.

Procurement of the new system

As mentioned in our reply dated 23 December 2013 to the Hon. Albert CHAN, the tender document for the procurement of the new Air Traffic Management System (ATMS) was prepared by the CAD in accordance with the SPR. The tender document had been vetted and approved by the Government Central Tender Board (GCTB), which was chaired by the

Permanent Secretary for Financial Services and the Treasury (Treasury) and comprised representatives from the Government Logistics Department and Department of Justice. The tender document had spelt out the technical requirements for the new system, including a robust and reliable system architecture, enhanced flight plan and data processing capability, high automation with advanced safety conflict alert functions, advanced flight trajectory prediction function, etc. These requirements were formulated based on the latest technical, operational and safety standards adopted worldwide in regard to ATMS, and the experience of operating the existing system, with a view to enhancing the capacity and functions of the system and to be on par with the latest international standards. In accordance with the SPR, the CAD had established a Tender Assessment Panel (TAP) for the procurement of the new ATMS. Prior to the evaluation of tenders, all TAP members were required under the SPR to declare that they had no actual, potential or perceived conflict of interest throughout the tendering process. After the panel assessment, the findings and recommendations of the CAD TAP were submitted to the GCTB for final consideration and approval. These procedures and arrangements served as checks and balances to ensure the impartiality and fairness of the tendering process.

The requirements in the tender documents

When the CAD conducted the tender exercise for the new ATMS in 2011, an unsuccessful tenderer alleged that the AutoTrac3 of the Raytheon Company of the United States had failed to meet the requirement of possession of "proven performance record" as specified in the tender document, hence in breach of the relevant provision of the WTO GPA. In accordance with the relevant provisions of the WTO GPA, the Government had immediately referred the complaint to the Review Body on Bid Challenges[1], a dedicated and independent body established under the WTO GPA, for review. After careful review of the case, the Review Body found that the system proposed by the Raytheon Company did possess the necessary "proven performance record". The Review Body had not seen any unfairness or bias which the Government had operated on any tenderer including the complainant. The complaint[2] was therefore dismissed.

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1 The Review Body provides a dedicated, independent and impartial avenue to review challenges by suppliers who are involved in the relevant procurement against any alleged breach of the WTO GPA during the procurement process. It is served by a Secretariat within the Trade and Industry Department, and comprises 12 members selected from a wide spectrum of society, including legal, engineering, accountancy fields, and are appointed by the Secretary for Commerce and Economic Development.

2 Details of the case and the decision of the Review Body could be assessed via the link below – http://www.tid.gov.hk/english/trade_relations/tradefora/reviewbody/reviewbody_hear_0211.html

Functions of the new system

The Raytheon Company of the United States, which was awarded the contract of the new ATMS, has over 50 years of experience in designing and manufacturing air traffic control and radar systems. Its systems are widely used by civil aviation authorities around the world, including the United States, Dubai, India, etc. Since its commissioning in 1998, the Hong Kong International Airport (HKIA) has been using the first-generation ATMS provided by the Raytheon Company, which has been in smooth operation over the years. As compared with the existing system, the capacity and functions of the AutoTrac3 have been greatly enhanced. The new ATMS can handle approximately 8 000 flight plans and 1 500 targets every day, which is about 5 times and 1.5 times the capacity of the existing system respectively. In addition, the new ATMS adopts several advanced technologies, including (1) "Multi-sensor Tracking" which fuses and processes the radar and surveillance sensors information; (2) "ATS Inter-facility Data Communication" which exchanges the aeronautical information with the adjacent air traffic control centres and coordinates the transfer of aircraft control; (3) advanced flight trajectory prediction algorithm to enhance conflict prediction, alert and resolution capability; and (4) "Electronic Flight Strip" which automatically displays the important flight information for reference by air traffic control officers. The enhanced functions of the new ATMS would be able to cope with the future air traffic growth at the HKIA.

Views of the air traffic controllers and overseas experience

To ensure smooth transition from the existing ATMS to the new ATMS, the CAD has since 2007 engaged air traffic control officers in the process and sought their views on the various aspects relating to the new system, including the planning for and functions of the new system, the human-machine interface, console ergonomics, work flow, transition and implementation of the new system to ensure that the new system could meet the operational requirements. Moreover, upon the award of contract for the new ATMS, the CAD has arranged briefings at various internal meetings to maintain communication with its frontline staff.

As regards the operation of the new ATMS, the CAD has designed and provided, at different stages, a series of training programmes via workstations, air traffic control simulators and on-site systems to allow air traffic control officers to familiarise themselves with the operation of the new system, thereby ensuring the smooth commissioning of the new ATMS. The training was launched in early 2013. So far, most of the air traffic control officers and operational support staff (about 280 persons) have received the relevant basic

training, during which the officers also provided feedbacks on the various aspects regarding the operations of the system. The CAD has considered these feedbacks, and has made necessary enhancements to the work flow of the new ATMS.

In line with the common practices adopted by the civil aviation authorities worldwide, the CAD had conducted comprehensive market research of the ATMS prior to the preparation of the tender document. CAD had conducted five overseas visits visiting major air traffic control centres in the United Kingdom, Australia, Italy, France, Norway, Guangzhou and Beijing, etc, to exchange views with the air traffic control personnel there and tap into their knowledge and experience in the operations of their ATMS. The purpose of these visits was to enhance the CAD's understanding of the latest technical, operational and safety standards adopted worldwide in regard to the air traffic control systems, thereby facilitating CAD to incorporate the latest technical and safety requirements in the tender documents. As the tender document was not formulated for any specific supplier, the delegation did not pay on-site visit to the ATMS operated by specific suppliers. The total expenditure for the conduct of the five overseas visits above was about HK$730,000.

Stability of the new system

Regarding the reported incidents of the ATMS used in the airport of New Delhi, Mumbai and Chennai in India, the CAD had enquired with the Airports Authority of India (AAI) and had been advised that some of the reported incidents were due to the problematic power supply of the airport or improper handling procedures. It was not related to the operation of the AutoTrac3. The AAI also remarked in its reply that it was satisfied with the overall performance of the AutoTrac3. The AutoTrac3 was fully commissioned by the AAI in 2011. The AAI was awarded the Jane's 2012 ATC Operational Efficiency Award[3] and the ATC Global Awards 2013 - Air Navigation Services[4]. These awards aim at commending and rewarding parties and organisations with good performance records in air traffic control and great achievements in driving forward the air traffic management industry.

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[3] The award is presented by Jane's Airport Review under IHS (Information Handling Services). This organisation is an independent and well recognised platform in the aviation industry. The award aims at commending and rewarding party with good performance records over the past 12 months across seven key areas of air traffic control. The Airports Authority of India was the winner of Operational Efficiency Award in 2012.

[4] The award is presented by the ATC Global in association with Air Traffic Management magazine. It aims at commending and rewarding individuals and organisations to drive forward the air traffic management industry.

Training arrangements for CAD staff

The CAD attaches great importance to staff training and, in light of the operational needs of the officers, arranges for them to attend suitable overseas training programmes from time to time to receive training on aeronautical skills, safety, monitoring, incident investigation, air traffic control and other aviation-related aspects. The purpose of such training is to enhance their understanding of the development of the international civil aviation industry, enrich necessary knowledge and skills, and facilitate their exchange of skills and experiences with overseas aviation personnel. In 2008, the CAD had arranged for two Chief Operations Officers to take up a one-year course in France on aviation safety and aeronautical communications, navigation and surveillance. The total expenditure on course fee and accommodation amounted to about HK$400,000 per person. This training arrangement is not related to the procurement of the new ATMS.

The Government attaches paramount importance to maintaining aviation safety. The new ATMS is a complex and sophisticated system. To ensure its safety, reliability and stability, the CAD will conduct detailed and stringent functional acceptance tests before putting the new ATMS into operational use. The CAD is making every effort to complete the necessary preparation for the new Air Traffic Control Centre, and will conduct comprehensive safety assessment in accordance with the established international aviation safety management standards and procedures.

Thank you for the Members' concern on the matter.

Yours sincerely,

(Desmond WU)
for Secretary for Transport and Housing

c.c. Director-General of Civil Aviation (Attn: Mr. Simon LI)