

ITEM FOR FINANCE COMMITTEE

CAPITAL WORKS RESERVE FUND HEAD 708 – CAPITAL SUBVENTIONS AND MAJOR SYSTEMS AND EQUIPMENT

Civil Aviation Department

New Subhead “Replacement of air traffic control radar simulator”

Members are invited to approve the creation of a new commitment of \$16.5 million for replacing the existing air traffic control radar simulator.

PROBLEM

The capacity and functionalities of the existing air traffic control (ATC) radar simulator of the Civil Aviation Department (CAD) cannot adequately support the rationalisation of airspace design and proper training of air traffic controllers.

PROPOSAL

2. The Director-General of Civil Aviation, with the support of the Secretary for Economic Development and Labour, proposes to replace the ATC radar simulator at an estimated cost of \$16.5 million.

JUSTIFICATION

3. The ATC radar simulator is an essential tool for simulating ATC scenarios and evaluating the design of new air routes and flight operation procedures for aircraft landing at the Hong Kong International Airport (HKIA) and nearby airports and aircraft overflying the 276 000 km² Hong Kong Flight Information Region managed by CAD. The simulation and evaluation is an indispensable process in the rationalisation of airspace to enhance the safety and efficiency of air traffic.

4. The existing simulator was commissioned in 1995 and is becoming obsolete. Designed in the early 1990's, the simulator lacks the capacity and functionality to cope with the complexity of present-day ATC simulation and evaluation. Its limited processing power and speed are unable to simulate the real-life air traffic scenarios in the Pearl River Delta (PRD), which are getting increasingly complicated because of the robust air traffic growth. The limitation of the existing simulator hampers the evaluation of possible new air routes or flight procedures aimed at improving ATC reliability and efficiency for the busy PRD airspace.

5. The simulator is also an important tool for providing initial radar training for CAD's student air traffic controllers and refresher training for licensed controllers to meet their licensing requirements. The existing simulator cannot cope with the training needs of controllers. Over the years, new functions have been incorporated into the actual ATC equipment operated by controllers, such as projection of aircraft flight path and alert of potential conflict between aircraft. The simulator however cannot feature these functions for controller training. Its capacity also gradually lags behind the increasing training demand as a result of the recruitment of more controllers.

6. The existing simulator is operating on obsolete hardware with limited software capabilities, rendering any meaningful system upgrading impossible. There is a need to replace the existing simulator in time to support rationalisation of airspace design and proper training of controllers. This is crucial to maintaining a safe and efficient air transport system for Hong Kong.

FINANCIAL IMPLICATIONS

Non-recurrent Cost

7. Based on the latest market information, the estimated non-recurrent cost of the proposal is \$16.5 million. A breakdown of the cost is set out below –

	\$ million
(a) equipment provision and installation	14.0
(b) modification of existing simulator room and associated building services	0.7
(c) technical services by CAD's maintenance contractor	0.3
	Sub-total
	15.0
(d) contingency (10%)	1.5
	Total
	16.5

8. As regards paragraph 7(a), the estimate of \$14 million is for the replacement simulator and expenses in relation to installation, commissioning, testing, spare parts, and staff training on equipment maintenance.

9. As regards paragraph 7(b), the estimate of \$0.7 million is for the essential modification and renovation works to the existing simulator room, with the following breakdown –

	\$ million
(a) re-partitioning/renovation of existing simulator room	0.25
(b) modification of fire-fighting system	0.30
(c) modification of power supply/lighting system	0.15
Total	<u>0.7</u>

10. As regards paragraph 7(c), the estimate of \$0.3 million is for CAD's maintenance contractor to dismantle the existing simulator and to assist in on-site installation and configuration of the replacement simulator.

11. The estimated cash flow requirement of the proposal is as follows –

Financial Year	\$ million
2006-07	3.21
2007-08	11.58
2008-09	<u>1.71</u>
Total	<u>16.5</u>

Recurrent Cost

12. Since this is a replacement of the existing system, there will not be any additional recurrent expenditure.

/Impact

Impact on Fees and Charges

13. While the amortised cost of the proposal will be recovered through the ATC charges¹ and En-route Navigation Charges², the impact on fees and charges is expected to be minimal.

IMPLEMENTATION PLAN

14. We plan to implement the proposal according to the following schedule –

Activity	Target completion date
Tender invitation	June 2006
Award of contract	December 2006
Equipment delivery	June 2007
Installation and commissioning	September 2007

15. The existing radar simulator will be of little resale value and very few components can be recycled. Disposal of some of the components, such as some computer boards and monitors, may be of environmental concern. Relevant requirements and procedures will be followed in the disposal of these components. Other components will be disposed of in the normal manner.

PUBLIC CONSULTATION

16. We consulted the Technical Sub-committee of the Aviation Development Advisory Committee and the Legislative Council Panel on Economic Services (ES Panel) on 17 and 27 March 2006 respectively. Both supported the proposal. In response to the suggestion of some ES Panel Members that the implementation process be expedited, we have critically reviewed the implementation timetable and would bring forward the commissioning of the replacement simulator by three months to September 2007.

Economic Development and Labour Bureau
April 2006

¹ ATC charges are collected by CAD from the Airport Authority on full cost recovery basis.

² En-route Navigation Charges (for overflying aircraft not landing at HKIA) are recovered by CAD directly from airlines.