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21 June 2018

Dear Ms CHAN,

**Panel on Economic Development
Supplementary Paper for Meeting on 28 May 2018**

Thank you for your letter of 30 May 2018 to the Transport and Housing Bureau requesting the Government to provide supplementary information on the proposed government facilities and resources required to support the Three-Runway System (3RS) at the Hong Kong International Airport (HKIA) as discussed at the meeting of the Panel on Economic Development (the Panel) on 28 May 2018. Having consulted the relevant departments, we would like to provide the information as follows.

(a) Criteria adopted by the Civil Aviation Department for setting the air traffic control services charge and the en-route navigation charges in order to recover the costs of the 3RS

2. To cope with the air traffic growth to be brought about by the 3RS and enhance the handling capacity of the HKIA, the Government has applied for a funding of \$1,902.9 million from the Legislative Council (LegCo) for the construction of a new air traffic control (ATC) tower, air navigation service (ANS) equipment shelters, platforms and sites as well as associated facilities.

Concurrently, the Government also has to seek another funding of \$3,108 million for the procurement of new ANS equipment and associated facilities to be installed at on-airport locations, and for the replacement/upgrade of the various aged ANS equipment items at off-airport locations. The estimated recurrent cost required for this project is \$96.3 million (subject to further detailed assessment).

3. According to the “user pays” principle of the Government, the Civil Aviation Department (CAD) will fully recover the cost for the provision of ANS through the following two methods: (1) collecting en-route navigation charges (ENCs) from airlines (for aircraft overflying the Hong Kong Flight Information Region without taking off/landing at the HKIA); and (2) collecting ATC services charge from the Airport Authority Hong Kong (AAHK) (for aircraft taking off/landing at the HKIA).

4. Under the aforesaid principle, in setting the ATC services charge and the ENCs in future, the CAD will include a few items in the costs to be recovered through the ATC services charge and the ENCs. These items include the depreciation cost of the total capital expenditure (including the \$1,902.9 million for the construction of the new ATC tower and the \$3,108 million for the acquisition of new ANS equipment and the replacement/upgrading of the existing ones) required for the operation and support of the 3RS, the related additional recurrent cost as well as the inflation factor.

5. The capital expenditure of \$1,902.9 million and \$3,108 million will be charged starting from the end of 2024. The \$1,902.9 million for the construction of the new ATC tower and associated facilities will be amortised over 40 years, whereas the \$3,108 million for the acquisition of new ANS equipment or replacement/upgrade of the existing ones will be amortised over 20 years. As for the actual amounts to be charged at the time, they will depend on such factors as the ratio of air traffic overflying Hong Kong to air traffic landing at the HKIA, as well as inflation. The amortised cost for a particular year will be apportioned pro rata by the AAHK and the airlines through ATC services charge and the ENCs respectively.

6. It is worth noting that the majority of airlines which have to pay the ENCs to the CAD are non-Hong Kong registered airlines. Compared with similar charges levied by nearby countries or places, Hong Kong’s ENCs are considered relatively low. Hence, the expected increase in the ENCs should not undermine the competitiveness of the aviation industry in Hong Kong. Moreover, in setting the airport charges levied on airlines, the AAHK would take into consideration a basket of factors, including the ATC services charge to be paid by the AAHK to the CAD. Currently, the ATC services charge only accounts for a small part of the airport charges levied on airlines by the AAHK. The CAD will thoroughly consult the relevant stakeholders, including the AAHK and the aviation industry, before revising the ATC services charge and the ENCs in future.

(b) Breakdown of costs for supporting the 3RS

7. The total estimated cost in money-of-the-day (MOD) prices for the first batch of government facilities to support the 3RS is about \$8,100 million, including about \$4,800 million for the infrastructure works (**69GI**, **70GI** and **176BF** projects) and about \$3,300 million¹ for the non-works items of procuring ANS equipment and fire services vehicles. For details, please refer to the following table:

Estimated Cost for First Batch of Government Facilities

	Infrastructure works (69GI , 70GI and 176BF projects)	Non-works items (procurement of ANS equipment and fire services vehicles)	Total
Cost for supporting the 3RS	\$4,790.2 million	\$1,749 million ² (Among which \$570 million ³ will be used to procure the new equipment items required to directly support the newly built third runway and associated new areas, and replace the existing equipment items which are located in the area of the two runways and have been in use for 20 years or so. Generally speaking, these equipment items will jointly serve the 3RS.)	\$6,539.2 million (including \$570 million under the non-works items; see Note 3)
Cost to be incurred regardless of the existence of the 3RS	-	\$1,587 million ⁴	\$1,587 million
Total:	\$4,790.2 million	\$3,336 million	\$8,126.2 million

¹ Subject to further detailed assessment.

² The amount includes the cost for the provision of new ANS equipment and associated facilities at on-airport locations, and the cost for the procurement of fire services vehicles to support the 3RS. For details, please refer to LC Paper No. CB(4)1110/17-18(03), particularly paragraphs 2 to 3 in Enclosure 4, item (I) in Annex 2 to Enclosure 4 and paragraphs 2 to 3 in Enclosure 5.

³ The amount includes the costs for the 4 ANS equipment items newly acquired/to be upgraded at on-airport locations, i.e. Radio Communication System, Instrument Landing System, Surface Movement Radar and Advanced Surface Movement and Guidance Control System. For details, please refer to items (I)(B)(i), (ii), (iv) and (v) in Annex 2 to Enclosure 4 in LC Paper No. CB(4)1110/17-18(03).

⁴ The amount includes the cost for the upgrade/replacement of existing aged ANS equipment at off-airport locations. For details, please refer to LC Paper No. CB(4)1110/17-18(03), particularly paragraphs 4 to 6 in Enclosure 4 and item (II) in Annex 2 to Enclosure 4.

8. Regarding the CAD, it has to construct/replace/upgrade various facilities, so as to provide the necessary ANS for the operation of the new runway. In particular, the ANS equipment items (about \$1,587 million) at off-airport locations have been in use for 20 years or so. Regardless of the existence of the 3RS, these items have to be replaced. The CAD will also take the opportunity to upgrade its equipment to support the 3RS operation. Moreover, the ANS equipment at on-airport locations, in addition to the new equipment required to support the 3RS, will also include some of the existing equipment items which have to be replaced after about 20 years of service⁵.

9. As for the remaining government facilities, the relevant planning and preliminary design work are in progress. These facilities are mainly for security control, such as the facilities required for customs, immigration, quarantine, port health control and law enforcement at the newly built passenger building, the expanded Terminal 2 and other locations within the airport, as well as systems for aviation weather services under the Hong Kong Observatory. The preliminary estimate of the required cost for the remaining government facilities ranges from \$9,000 million to \$9,500 million in MOD prices. The actual situation and project estimate can only be confirmed after the completion of the planning and preliminary design work. The Government will seek funding for these remaining facilities from the LegCo later.

(c) Estimated air traffic demand and maximum runway capacity at the HKIA in 2024 and 2030

10. According to the HKIA Master Plan 2030 (Master Plan)⁶ and the environmental impact assessment (EIA) report on the 3RS, the estimated number of air traffic movements at the HKIA in 2025 (i.e. upon the full commissioning of the 3RS by the end of 2024) and in 2030 are as follows.

	Estimated number of air traffic movements at the HKIA
2025	Master Plan: about 509 000 EIA report on the 3RS: 505 000
2030	Master Plan: about 602 000 EIA report on the 3RS: 607 000

11. The estimated numbers of air traffic movements in the Master Plan and the EIA report on the 3RS are slightly different because the Master Plan was published in 2011. The estimated number of air traffic movements stated in the Master Plan was updated afterwards and included in the EIA report on the 3RS which was published in 2014.

(d) Breakdown of expenditure on the Controller Working Positions

12. There are various types of equipment in the Controller Working

⁵ See Note 3.

⁶ The estimated baseline under the Master Plan.

Positions (CWPs) inside the new ATC tower, including surveillance data display, electronic flight strips, voice communication system, ground radar display, weather data system, airport information system and closed-circuit television system.

13. As mentioned by the CAD at the Panel meeting on 28 May 2018, the CAD would consider different proposals regarding the installation of equipment at the CWPs. It has studied in detail the pros and cons of the different proposals, including factors such as the technical feasibility, complexity, impact on the existing system, cost-effectiveness and operational efficiency. After studying the proposals, the CAD is of the view that adopting the more advanced integrated CWPs (i.e. information presented to air traffic controllers will be consolidated to minimise the number of display devices) can enhance the operational efficiency and aviation safety, thereby achieving greater overall operational effectiveness for the ATC tower in the long run.

14. Since the design and mode of operation of the CWPs and/or aids provided by different suppliers vary, to ensure aviation safety, the CAD must make sure that the same type of equipment will be used at the new ATC tower as well as the existing main and backup towers. As such, the CAD has decided to adopt the more advanced integrated CWPs. This proposal will involve a total of 45 CWPs, including 19 CWPs to be installed in the new ATC tower and 26 CWPs to be replaced in the existing main and backup towers.

15. The preliminary estimate made by the CAD is \$350 million. In the light of the views (including those given by Members of the Panel) on the estimate for the CWPs, the CAD is currently reviewing whether there is room to further reduce the estimated expenditure and the detailed arrangement. It will provide the relevant information and explain in detail in the document to be submitted to the LegCo Finance Committee.

Yours sincerely,

(Ms Joyce CHAN)
for Secretary for Transport and Housing

c.c.

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