

For Information

Legislative Council
Panel on Economic Services

Airport Authority Year 2000 Programme

INTRODUCTION

The Authority had earlier reported to the Panel on Information Technology and Broadcasting the position of its Y2K Programme as at 5 March, and subsequently to this Panel on the respective position as at 30 March and 30 April. As requested by Members at the Panel meeting on 11 May, this paper provides a comprehensive report on the progress of the Authority's Year 2000 (Y2K) Programme *as at 30 June 1999*. Reports from Hong Kong Air Cargo Terminals Ltd. and Asia Airfreight Terminal Co. Ltd. are at Annexes 2 and 3 respectively.

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THE PROGRAMME

2. The Authority started to build up its Y2K inventory in early 1998. The Authority adopts the British Standards Institution's (BSI) 1997 document defining Y2K compliance as the standard in its Y2K work. In September 1998, after the initial airport system problems were resolved, the Authority instituted a comprehensive Y2K Programme. The Authority's Y2K Programme aims to minimise the risks of the Y2K problem on the Authority's operations, to safeguard the continuity and normal operations of the airport and the provision of a safe and effective service to the public before, during and after the transition to the millennium.

3. The Authority accords the highest priority to its Y2K Programme, with a commitment to make necessary financial and other resources available to the Programme. It recognises that the Y2K problem is not simply an IT problem, but a management challenge and a corporate-wide concern as well. A concerted effort has been maintained throughout the Authority, the momentum of which will persist till the transition through the millennium.

4. Apart from ensuring that the problem was understood at all levels, the Authority has also been working closely with its business partners to ensure that all possible preparations are being made to minimise any Y2K

impact. The Authority also reports to the Information Technology and Broadcasting Bureau (ITBB) through Economic Services Bureau (ESB) and Civil Aviation Department (CAD) on the status of the Programme, including that of the contingency planning aspects.

Management Structure

5. The Board appointed a Y2K Steering Committee in September 1998, chaired by the Chief Executive Officer and comprises senior management from various departments and the Authority's Y2K consultant, to direct and steer the Programme. At the Authority's invitation, representatives from ESB, ITBB and CAD have been attending Steering Committee meetings as observers since 11 May 1999.

6. A Y2K Central Programme Office and Contingency Planning Project Office with 28 full-time staff and secondees have been set up to manage and co-ordinate the day-to-day Y2K compliance efforts. In addition, a total of 41 managers from various technical departments have been nominated as Y2K Project Managers. Their responsibility is to manage, other than their normal day-to-day duties, the verification of individual systems, together with any necessary rectification work.

7. Users are closely involved in the process. The Authority has identified for each system in its Y2K inventory a System Owner, who is the user representative. These System owners are accountable for ensuring the continuity of business operations, signing off Y2K verification, as well as developing, testing and implementing contingency measures, under their respective function areas. Teamwork between users and technical staff is strongly emphasised to all concerned as a key success factor.

8. For the electrical and mechanical systems like lifts, escalators, aircraft loading bridges, etc., the Authority has a team of 13 staff seconded from the Electrical and Mechanical Services Department (EMSD) to work on Y2K verification testing and contingency planning.

9. KPMG, the Authority's Y2K consultant, advises on the development of the Y2K programme methodology, strategy, policy and guidelines. It is also required to report regularly on progress and issues and provide advice and recommendations to the Board and the Y2K Steering Committee.

10. The Authority has also seconded nine experienced staff from DMR Consulting Group, a consultant group with extensive experience in

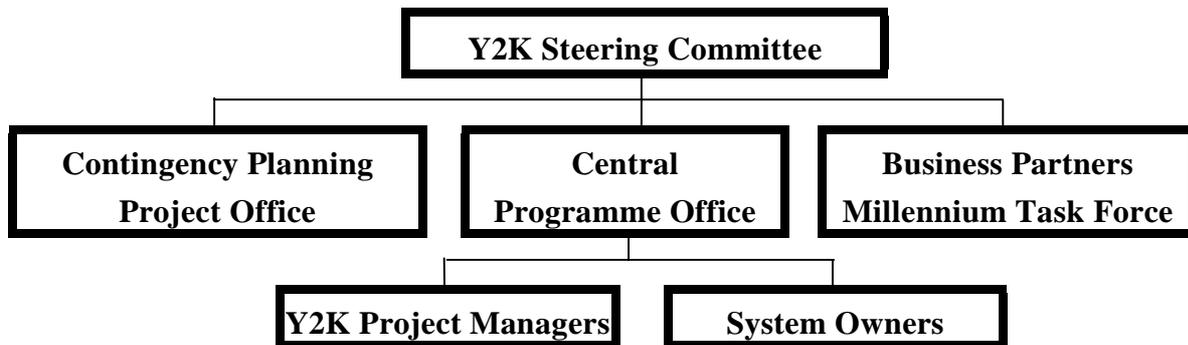
Y2K testing, project management and airport/airline operations to manage and support the Y2K testing effort. These seconded staff are required to ensure the efficacy of the testing process, and to support individual Y2K Project Managers on test criteria, methodology and documentation.

11. The whole Programme is overseen by the Head of System Services with the assistance of two managers respectively looking after the progress of the Authority's own compliance efforts and the liaison with business partners. They are IT professionals with over 20 year experience. The contingency planning aspects of the Programme are taken care of by a manager with over 20 years of airport planning and operational experience.

12. Also involved is the Authority's Internal Audit Department which is actively reviewing the Y2K Programme management particularly in areas of testing and contingency planning.

13. The organisation chart below illustrates the management structure of the Programme. (Please refer to paragraph 41 below on the role of the Millennium Task Force.) The Authority regularly reviews the progress of the Programme and the demands imposed to ensure that adequate resources are available in good time.

Programme Management Structure



Size of the Problem

14. The Authority's Y2K inventory shows a total of 124 systems. These include both IT and non-IT systems and consist of about 4 000 different components.

15. Many of the Authority's systems interface with those belonging to its business partners and other parties. As a result, the Authority can be

affected should any of these external systems fail to function in the Y2K environment. For example, the 12 airline departure control systems (DCS's) in use in the Terminal Building are connected to the Authority's Baggage Handling System through the SITA network and equipment. These DCS's are located offshore and clearly it is difficult for the Authority to control their compliance. While SITA has claimed its network and equipment to be compliant, the Authority is formulating contingency measures to protect the operation of its own systems.

16. There are another 9 systems related to the North Runway and the Northwest Concourse extension projects. These systems are being implemented in phases. Although limited daily operation of the North Runway began on 26 May, these systems have yet to be fully commissioned. Y2K tests have been incorporated into the commissioning process of these systems, and they will be Y2K compliant when the North Runway and the Northwest Concourse are brought into full service.

PROGRESS TO DATE

17. The process to establish Y2K compliance involves -

- (a) determining from the contractor or the vendor the compliance of a specific system;
- (b) taking rectification action to upgrade non-compliant hardware and/or software;
- (c) testing and verifying that the system performs correctly under different date case scenarios, e.g. 31.12.1999, 1.1.2000, 29.2.2000, even if it is claimed to be compliant by the contractor or the vendor.

18. The Authority has classified the 124 systems into three categories, high medium and low criticality, based on the potential impact on airport operations should they fail. The tabulation below sets out the criteria used in determining the criticality status of the systems.

Criteria used in Ranking of System Criticality

Criticality	Failure of which would result in any of the following
High	<ul style="list-style-type: none">● intolerable financial loss● major operational disruption, perhaps even suspension of airport operations● an impact on safety and security standards● severe damage to public image and media

	exposure ● likely expensive and extended litigation
Medium	● tolerable financial loss ● localised operational disruption ● damage to public image and media exposure ● litigation
Low	● minor financial loss ● minimal operational disruption ● minimal damage to public image ● litigation unlikely

19. Among the 124 existing systems, 53 are of high criticality, 38 medium and 33 low. The ranking system ensures that high criticality systems are given precedence in compliance efforts should there be any conflicts of competing priority in resources.

Compliance Verification Progress

20. The Authority's policy is to verify each and every system's compliance status, even if it is claimed to be compliant by the contractor or vendor. For systems found to be "non-compliant", once a system is rectified, verification tests on its compliance would also start. In this regard, the Authority has adopted a parallel processing approach in respect of rectification and verification.

21. As at 30 June, the Authority has been on schedule in its Y2K Programme. The Authority has completed verification of 120 (97%) of the 124 existing systems. The compliance status of these 120 systems has been verified such that -

- (a) they are Y2K compliant; or
- (b) they will not be affected by the Y2K problem; or
- (c) any non-compliant component in them does not affect the useful functioning of the system or airport operations.

Ann.1 Further details of the progress are set out at Annex 1.

Systems Still Under Rectification/Verification

22. The Authority has completed compliance verification of all its existing systems except –

- (a) the Supervisory Control and Data Acquisition/ General Building Management System (SCADA/GBMS)
- (b) the Human Resources Management System (HRMS),
- (c) the Access Control System (ACS), and
- (d) the Baggage Handling-System (BHS).

Completion of the compliance verification of these systems extends beyond June because -

- (a) the SCADA/ GMBS is still undergoing acceptance testing and commissioning and is only ready for Y2K testing in late June;
- (b) the HRMS contractor suffers from resource constraints and could not deliver a Y2K compliant version earlier; and
- (c) on-site tests for both ACS and BHS can only commence in July when the related contingency plans have been developed and tested to avoid possible disruption to the operation of the Passenger Terminal during such on-site tests.

SCADA/GBMS

23. The SCADA/GBMS, a low criticality system, is claimed to be Y2K compliant by the contractor. Verification tests on this system have started and are expected to be completed by 31 July.

HRMS

24. The HRMS is a medium criticality system. According to the contractor, it is non-compliant. Our original target was to have this system rectified and verified by 30 September. The contractor has agreed to deliver to the Authority a Y2K compliant version of the system, which is heavily customised to suit the Authority's specific requirements. However, the Authority is not optimistic that the delivery will be on time because (a) the contractor seems to be suffering from a constraint in resources and (b) many of its customers in Hong Kong are also demanding Y2K compliant versions of its products.

25. As a fallback measure, the Authority will have manual workarounds in place to cover the non-compliant functions by September 1999. It is expected that airport operations will not be affected by the compliance status of this system.

ACS and BHS

26. Both ACS and BHS are high criticality systems. They are claimed to be Y2K compliant by the contractors. The Authority has successfully completed verification tests of the key components in a simulated environment. A special working group led by senior management of the Authority's Airport Management Division is tasked to manage the compliance verification and the development of contingency measures for these systems.

27. In respect of ACS, on-site tests have also started and are carried out after midnight in order not to affect airport operations. Verification is expected to be completed by 31 August.

28. As regards BHS, on-site verification tests of the Programmable Logic Controllers (PLCs) in the arrival and departure baggage handling subsystems were completed successfully in May. Current results indicate that the arrival baggage handling sub-system can run in standalone mode in case of any Y2K disruption. Further on-site verification tests on other components of the system are in progress. Verification is also expected to be completed by 31 August.

CONTINGENCY PLANNING

29. Given the uncertainties surrounding the Y2K problem, there is no guarantee that a system will be "problem-free" even if it has successfully undergone the Y2K compliance verification process. Furthermore, because many of the Authority's systems interface with other external systems, there is always a risk of disruption through interface points. Contingency plans are therefore being developed and refined to ensure that critical operations can continue in the event that one or more systems should suffer a Y2K related failure. To underline the importance of contingency planning, the Authority has set up a Y2K Contingency Planning Project Office to take up the overall responsibility for this part of the Programme.

30. The Authority started the Y2K contingency planning in December 1998. The scope of the Contingency Planning Initiative includes -

- (a) development of workable contingency plans, which will be predominantly manual, for critical operational processes; and
- (b) identification of failure scenarios for the systems that support airport operations and development of corresponding fallback measures to ensure continuity of operation.

In other words, during the contingency planning process individual systems are mapped to the Authority's various operational processes and steps. This mapping, together with analysis of the operational processes and steps, provides a clear picture of how the failures of individual systems will impact on airport operations.

31. With the assistance of consultants, analyses to identify the critical operational processes on the following five key areas of airport operations were carried out at the beginning of the year -

- (a) arriving passengers and baggage movement
- (b) departing passengers and baggage movement
- (c) transfer and transit passengers and baggage movement
- (d) aircraft ground movement and ground servicing
- (e) cargo and mail movement

With inputs from line management of the Authority and business partners, the Authority has identified within each of the above areas key operational processes and steps which are critical to the continuity of airport operations.

32. A series of workshops involving both technical and operational staff of the Authority and personnel from relevant business partners were held to develop contingency measures for the key operational processes and steps identified, building on existing measures and consolidating them into a coherent plan. The contingency measures developed have been drilled with desktop exercises involving AA and business partners' staff. A further physical walk-through drill with simulated flights and passengers would be conducted in early July to verify the procedures in a live environment. A comprehensive and properly tested contingency plan will be available for distribution by the end of July.

33. After the contingency plan is formally issued at the end of July, more comprehensive drilling in live operational environments, including coordinated drills with business partners, will follow in the remaining months before the year end, to familiarise the front line staff with the contingency procedures.

34. At present, contingency measures have been developed on the assumption that a system or multiple systems cease to function completely. However, some systems can be operated in a semi-manual or reduced functionality mode. Systems are being analysed to determine these reduced functionality fallback scenarios. A series of workshops are being conducted with Project Managers and System Owners to review risk and to facilitate the

incorporation of system fallback measures into the overall operational contingency planning effort.

35. Work is also progressing on establishing a Command and Control framework involving senior airport management. This management framework, which includes the establishment of a Command and Control Centre to co-ordinate and manage and disruptions that should arise during the Y2K critical periods, will be in place by the end of August.

36. In addition, effort is being placed in the development of risk mitigation measures, such as rolling forward the clock of those standalone systems where the date has no impact on the operation of the system. All such measures will be tested and in place before the transition to the new millennium.

BUSINESS PARTNERS

37. The Authority is responsible for the compliance of its systems, and its business partners are responsible for theirs. The Authority tracks the progress of business partners in the high and medium criticality groups (totalled 39, excluding CAD and EMSD) through monthly reports on their Y2K programmes, which are copied to ITBB, ESB and CAD. These business partners reported that they would be able to meet the June target date in general. The exceptions are three in the medium criticality group who reported that their target compliance dates are respectively August (for one) and September 1999 (for two).

38. While the Authority is doing all it can to track the progress of business partners' Y2K efforts, it is not in a position to verify the compliance of their systems. Putting legal implications and liability issues aside, the Authority simply does not have access to business partners' internal systems, such as HACTL's Community System for Air Cargo (COSAC), nor the resources, knowledge and expertise necessary to verify their compliance. For Members' reference, even if we exclude the retailers and caterers in the Passenger Terminal Building and the airlines which do not have their own passenger or cargo handling operation at the airport, the Authority still has some 60 business partners operating on the airport island.

39. However, the Authority places strong emphasis on the interface arrangements between the Authority's systems and those of the business partners. The Authority considers the compliance of these external interfaces an important element of its compliance efforts. Joint compliance tests on these external interfaces have been conducted with the relevant business

partners. An example is the compliance tests on the interface between the Authority's Airport Operations Database (AODB) and Cable & Wireless HKT's Flight Data Display System (FDDS). In this case, not only did HKT and the Authority participate in the tests, Cable & Wireless HKT's FDDS customers, such as HACTL, AVSECO, HAS, airlines, etc. who are also key business partners of the Authority, were also invited to witness the tests. All joint compliance tests with key business partners including Cathay Pacific, CAD, Cable & Wireless HKT, Hong Kong Observatory, Mass Transit Railway Corporation and SITA have been completed.

40. The Authority will, in concert with its business partners, use its best endeavours to ensure that airport operations will not be disrupted by Y2K problems and see to the provision of necessary contingency measures. Given the significance of the Y2K issue, its business partners treat the issue very seriously.

41. In order to discharge its role as a co-ordinator efficiently and to prioritise resources, the Authority has grouped its business partners into high, medium and low criticality. The Authority has invited the 26 high criticality business partners to be members of the Millennium Task Force, which aims to -

- (a) facilitate the exchange of information and sharing of experience related to Y2K compliance among members;
- (b) review the progress of work related to Y2K compliance for those systems required by airport operations;
- (c) identify the interfaces of their operation with the Authority's; and
- (d) identify any problems or delay in implementing Y2K compliance and to facilitate the formulation of contingency plans that require co-ordination among members.

The Task Force has been meeting on a monthly basis since January 1999, involving senior management staff responsible for Y2K compliance from the organisations involved.

42. The Authority also carries out site visits to business partners in the high and medium criticality groups in order to gain more detailed information from them and to confirm their compliance progress. As at 30 June, the Authority has visited 35 business partners in the high and medium criticality categories.

43. The Authority is working on the synchronisation of its own contingency plans with those of its business partners. Co-ordinated trials of the Authority's contingency measures and those of its high criticality business partners' will be carried out as far as possible over the next few months.

LOOKING AHEAD

44. One system, namely the HRMS, is still under rectification, and three others, namely the SCADA/GBMS, the ACS and the BHS, are still under verification. The Authority will ensure that progress is maintained regarding the above four systems and those that are yet to be commissioned, and to ensure that target dates are adhered to.

45. The Authority will continue to maintain a stringent control mechanism on any subsequent software changes to ensure that the compliant status of those verified systems is maintained.

Airport Authority

7 July 1999

**Airport Authority Year 2000 Programme
Progress as at 30 June 1999**

Table 1: Compliance Status

	Criticality			Total	%
	High	Medium	Low		
Verification Completed	51	37	32	120	97%
Verification In Progress	2	0	1	3	2%
Rectification In Progress	0	1	0	1	1%
Total	53	38	33	124	100%
%	43%	30%	27%		

Table 2: Verification Progress

Date	Target Compliance				Actual			
	Total	Cum. Total	%	Cum. %	Total	Cum. Total	%	Cum. %
Nov-98	6	6	4.8%	4.8%	10	10	8.1%	8.1%
Dec-98	6	12	4.8%	9.7%	2	12	1.6%	9.7%
Jan-99	2	14	1.6%	11.3%	4	16	3.2%	12.9%
Feb-99	6	20	4.8%	16.1%	6	22	4.8%	17.7%
Mar-99	23	43	18.5%	34.7%	21	43	16.9%	34.7%
Apr-99	32	75	25.8%	60.5%	33	76	26.6%	61.3%
May-99	10	85	8.1%	68.5%	21	97	16.9%	78.2%
Jun-99	35	120	28.2%	96.8%	23	120	18.5%	96.8%
Jul-99	1	121	0.8%	97.6%				
Aug-99	2	123	1.6%	99.2%				
Sep-99	1	124	0.8%	100.0%				
Total	124				120			

HACTL Y2K Compliance: An Update for the Economic Services Panel of Legco

HACTL welcomed the opportunity to provide its progress reports on Y2K compliance to Legco on 19 April and 6 May 1999.

This serves as a further update on the Company's progress to date.

Members may wish to note that:

- a) All 28 critical computer and electronic systems at HACTL became compliant on 4 May 1999 after the satisfactory completion of all necessary *remediation* work. A company-wide system freeze plan is now in place to ensure that their respective Y2K compliance will be preserved and maintained through the millennium transition.
- b) *At the beginning of June*, HACTL's Business Continuity and Contingency Plan (BCCP) was presented *to - and won support from -* business partners and customers such as the Airport Authority, relevant government department, security contractors, freight forwarders and airline *customers*. *Our* customers as well as our key business partners *have assured us* that they will endeavour to dovetail their plans with ours.
- c) A validation test of the HACTL Business Continuity and Contingency Plan (BCCP) *was successfully carried out on 9 and 10 June 1999*, with critical customers and business partners invited to attend as witnesses.
- d) Training of HACTL's staff on contingency procedures is on-going and will be completed by the end of August. To ensure retention of training, refresher programmes will be conducted in due course. Drills involving customers and key business partners will be *carried out* in August and November to ensure that the community *will remain* familiar with the HACTL BCCP.
- e) To minimize the risk of potential operational disruptions on HACTL triggered by failure of suppliers, business partners and customers, systematic assessments through face-to-face meetings with relevant parties were carried out and completed in May.
- f) A HACTL Y2K Transition Control Centre is in the process of being set up and will be put into operation to direct cargo operations at HACTL commencing a week ahead of each of the three key dates namely : 9 September 1999, 1 January 2000 and 29 February 2000.

8 July 1999

Asia Airfreight Terminal Co Ltd
Update on year 2000 Compliance Programme

1. PURPOSE

- 1.1. This paper seeks to provide an update of the Year 2000 (Y2K) compliance programme of Asia Airfreight Terminal Co Ltd (AAT) as at July 2, 1999.

2. COMPLIANCE STATUS

- 2.1. We received one more confirmation letter from our vendors and therefore the percentage of positive replies has increased from 97% to 99%.
- 2.2. Of the nine mission critical systems identified, the end-to-end testing with Traxon and SITA were completed on June 30, 1999. This leaves only the Cargo Management System to be tested in July 1999 as scheduled.

3. CONTINGENCY PLANNING

- 3.1. The Business Contingency plan was accepted and endorsed by management on May 28, 1999. There are altogether eleven sections in the plan covering all critical system failures and related control policies. A copy of the Contingency plan was submitted to the Airport Authority for their review.
- 3.2. The first round of training was conducted and completed in June 1999. Refresher courses are scheduled in September and November 1999.
- 3.3. A drill to simulate the fallback procedures of ACCS and CMS was successfully carried out on June 16, 1999 with the participation of the Custom and Excise Department as well as Federal Express

Corporation. We plan to invite other airlines and forwarders to participate in other drills in August 1999.

- 3.4. Business partners were invited to a Y2K briefing and demonstration of key Y2K fallback measures in our terminal on June 30, 1999. Altogether, 21 organisations were represented in the briefing comprising 12 carriers, four representatives from HAFFA, three forwarders, two ramp handling operators, DBS Bank, Tradelink and the Airport Authority.

4 LOOKING AHEAD

- 4.1 The steering committee will closely monitor the progress of the Y2K project and will ensure that the terminal is ready for the Y2K challenge.
- 4.2 We are now working out the additional manpower required should the Y2K problem extends for more than three days. Our shareholders had at the last Board meeting held on June 11, 1999 agreed to supply additional manpower from their own organisations should the need arise.