Panel on Security of the Legislative Council

**Implementation of Phase II of
the updated Information Systems Strategy
for the Immigration Department -Automated Passenger Clearance System
and Automated Vehicle Clearance System**

INTRODUCTION

This paper informs Members of the progress of the implementation of Phase I of the updated Information Systems Strategy (ISS-2) for the Immigration Department (ImmD) and the implementation plan of the Automated Passenger Clearance (APC) System and Automated Vehicle Clearance (AVC) System, two key projects under Phase II of the ISS-2.

BACKGROUND

2.   In 1999, ImmD, with the assistance of a consultant, formulated the ISS-2 which aims to meet the growing demands for public services of higher quality, to be delivered at a lower cost and in a more responsive manner.   The projects under the ISS-2 will be implemented in five phases according to a structured programme. Members were informed of the ISS-2 and the implementation plan of its first phase at the meetings on 1 November and 6 December 2001 (LC Paper No. CB(2)1984/00-01(03) and CB(2)547/ 01-02 (03)).

PROGRESS OF PHASE I OF ISS-2

3.   Implementation of Phase I of the ISS-2 has been proceeding smoothly. The iPermit System was successfully launched in March 2002, reducing the processing time of applications for visit permits submitted by residents of Taiwan from five working days to only a few minutes.   Implementation of the Information Technology Infrastructure Upgrade Programme[1] started in January 2002 and is expected to be completed in October 2004. The tendering exercise for the procurement of hardware, software and services for the Immigration Control Automation System (ICAS) Enhancement Programme[2] is in progress. Implementation of the enhanced ICAS is slated for April 2004.   An updated ISS-2 implementation plan is at Annex A for reference.

PHASE II OF ISS-2

4.   APC and AVC are the two most important projects under Phase II of the ISS-2.   In the light of the perennial growth in passenger and vehicular traffic at control points, ImmD commissioned consultants in February this year to study the feasibility of introducing automated immigration clearance processes at immigration control points for both passenger and vehicular traffic by using the smart identity cards to be issued to Hong Kong residents in mid-2003 and the fingerprint recognition technology.   The feasibility studies, which were completed in September 2002, concluded that it is technically viable and financially justified to implement the APC and AVC projects. With the implementation of the two projects, the overall passenger and vehicle throughput at control points can be greatly improved.

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[1] Information Technology Infrastructure Upgrade Programme is to upgrade the IT infrastructure of ImmD, which provides the infrastructural communication network and system architecture underpinning all application systems of the Department.
[2] ICAS Enhancement Programme is to enhance the existing ICAS which supports the immigration clearance services at control points.

Automated Passenger Clearance

5.   At present, each immigration counter is manned by an immigration control officer (ICO). Hong Kong residents will present their Hong Kong identity cards to the ICOs for immigration process.

6.   Under the APC proposal, a number of immigration counters at various control points will be converted into unmanned APC channels. Hong Kong residents holding smart identity cards (except those under 11 whose smart identity cards do not have any fingerprint templates) can choose to perform self-service clearance themselves through these channels or use the counters manned by ICOs. The APC channels will have the following salient features-

    (a)   it is a self-service clearance process guided by user friendly visual messages;

    (b)   one ICO may initially supervise up to five APC channels; and

    (c)   through redesigning the counters, it is expected that two existing immigration counters can be converted into three APC channels, thus increasing the overall passenger throughput.

Automated Vehicle Clearance

7.   It is also proposed to install AVC equipment at all existing kiosks at the three vehicular control points namely, Lok Ma Chau, Man Kam To and Sha Tau Kok control points, leaving a few of the kiosks manned by ICOs to process drivers and passengers without smart identity cards. Drivers holding Hong Kong smart identity cards may choose to perform self-service immigration clearance by using their smart identity cards. The AVC kiosks will have the following salient features -

(a) it is a self-service clearance process guided by user friendly visual messages;

(b) for those drivers choosing to carry an electronic tag issued by ImmD, when a transponder system installed in front of the immigration kiosk receives the signal from the electronic tag, the AVC System will transmit the essential data required for self-service immigration clearance from the database to the workstation in the kiosk concerned. This will save the driver's effort and time to insert his smart identity card into the card reader and remove the card from it; and

(c) one ICO may initially supervise up to six unmanned AVC kiosks.

BENEFITS

8.   The successful implementation of the APC and AVC Systems will enable ImmD to increase the overall passenger and vehicle throughput significantly, thereby reducing the waiting time of passengers and drivers at control points.

9.   With the introduction of APC and AVC, the existing 'one-officer-one-counter/kiosk' mode of operation at control points will change in that one ICO will be able to supervise several APC channels/AVC kiosks.   It is estimated that after full implementation of the two Systems, there will be staff savings of 217 posts (comprising 207 Senior Immigration Assistant and 10 Immigration Officer posts), representing savings in recurrent cost of $93 million per annum at 2002-03 price level.   Upon full implementation of APC in 2006-07, the number of clearance counters will be augmented (since, roughly speaking, two conventional counters can be converted to three unmanned APC channels), resulting in improvement in productivity and throughput at control points.   It

is estimated that the implementation of APC Project will avoid the creation of 115 posts of Senior Immigration Assistant at an annual staff cost of $47 million as from 2007-08, which would otherwise be required to operating the additional number of counters by the immigration staff.

10. The staff savings which are to be realized progressively from 2004-05 and onwards can be redeployed to meet other operational needs such as opening more visitors counters and manning the new control points at Shenzhen Carport, Shenzhen Western Corridor and Lok Ma Chau Spur Line to be in operation in end 2004, 2005-06 and 2006-07 respectively. Hence, there will not be any staff redundancy.

FINANCIAL IMPLICATIONS

11. The total non-recurrent expenditure for development and implementation of the APC and AVC Systems is estimated to be $426 million over four years from 2003-04. The total recurrent expenditure is estimated to be $47.6 million per annum. We expect to be able to achieve break-even four years after full implementation of the APC and AVC Systems in 2006-07. The costs may be broken down into the following components -

		$(in million)
(a)	Non-recurrent project expenditure (for the acquisition of computer hardware and software, implementation and contract staff services, site preparation, training, consumables and miscellaneous items and contingency (at 10%))	352.20

		$(in million)
(b)	Other non-recurrent expenditure (for in-house development staff and accommodation for system development team)	73.77
	Total	**425.97**
(c)	Annual recurrent expenditure (for hardware and software maintenance, maintenance and contract staff services, consumable and miscellaneous items, communication lines and staff and accommodation for system on-going support team)	47.55

IMPLEMENTATION PLAN

12.   We aim to seek funding approval from the Finance Committee of the Legislative Council as soon as possible.   With the funding approval, ImmD will start the development of the two projects in February 2003 and our aim is to roll them out in 2004-05.   Detailed implementation plans are set out at Annexes B and C.

13.   Consideration has been given to compressing the project activities to expedite the delivery of AVC and APC.   However, these are complex projects deploying advanced technology.   It will need at least 22 months to go through the project development cycle which includes tendering, system development and design, site preparation, testing, training, etc.   This implementation plan has also taken account of the implementation dates of the upgraded information technology infrastructure (October 2004) and enhanced ICAS

(June 2004) of ImmD, with which AVC and APC will interface, as well as of the programme of the region-wide identity card replacement exercise which will start in mid-2003 and last for four years.

Security Bureau
November 2002

List of projects and macro implementation plan of the Updated Information Systems Strategy for the Immigration Department

Phase	Project No.	Name of Project & Description	Implementation	Status
Phase 0 (1999-2000)	1	**HKSAR ID Card** [D] To develop and implement the necessary infrastructure and application system for issuing new ID cards to the public.	May 2003	Feasibility study (FS) was completed in June 2000. With the funding approval obtained from the Finance Committee in March 2001 and May 2002, development work is in active progress.
Phase I (2000-01)	2	**Business Process Re-engineering** [E] To streamline and centralise work processes with the aim of significantly improving productivity, and bringing the greatest benefit from new and improved information systems.	Throughout the implementation of the updated ISS	Business process re-engineering (BPR) studies was conducted in 2000 on applications for extension of stay and visas; validation of right of abode claim; management of births, deaths and marriage records. Recommendations of the studies become useful input to the FS on the Enhancement of Processing Automation System (PAS) being conducted. BPR was conducted earlier this year on keeping of microfilm and paper records. As a result, the overall efficiency has been increased and a saving of 17 posts was realized. Studies on other areas will be mounted to identify the business process re-engineering opportunities prior to implementation of the related information systems.

Notes :
D denotes that the project is one of the 12 delivery projects.
E denotes that the project is one of the 18 enabling projects.

	3 (Part I)	**Electronic Visit Permit Application System (Pilot)** [D] To introduce a new computer system (called iPermit System) for handling applications and issue visit permits to Taiwan visitors through electronic means. (The experience gleaned from this pilot scheme will be useful for subsequent implementation of Part II of the scheme to cover other categories of visitors.)	April 2002	The introduction of the iPermit Scheme was advanced to March 2002. The iPermit System to support the issue of the iPermits was successfully rolled out on 18 March 2002.

Phase I (2000-01)	4
	
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		Infrastructure Upgrade Programme
		     Mainframe Investment [E]
		     To upgrade the processing and storage capacity of the mainframe to meet the needs of the updated ISS applications.
		
		     Midrange Investment [E]
		     To upgrade the server computers (which link the mainframe computer in the headquarters and the personal computers in outstations) to the current technology platform and to enhance processing power and storage capacity.
		
		     Desktop Investment [E]
		     To provide suitable modern personal computers on the desktop for immigration officers handling various applications in the headquarters and to the officers manning the clearance counters and kiosks at immigration control points to facilitate their daily work.
		
		     Communications Network Investment [E]
		     To upgrade the communication network (a core IT infrastructure component shared by all ImmD applications now serving the immigration headquarters, 30 branch offices and 10 control points) to support the updated ISS applications and new offices and control points.
			)
			)Phase I -
			)building an
			)Administrative
			)Network by
			)August 2003
			)
			)Phase II-
			)extending
			)new
			)Infrastructure
			)to control
			)points by
			)February 2004
			)
			)Phase III-
			)extending
			)new
			)Infrastructure
			)to travel
			)documents
			)issue
			)offices by
			)October 2004
				)
				)
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				)Funding approval from the Finance
				)Committee was obtained on 11 January 2002.
				)Development work is in active progress.
				)The Programme will be completed in
				)October 2004.
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Phase I (2000-01)	8	**Immigration Control Automation System (ICAS) Enhancement Programme** **ICAS Enhancement** [D] To enhance the existing system to address the aging and obsolescence problems and system limitation; and to raise the technology platform to support and interface with other initiatives of the updated ISS to improve the efficiency and effectiveness of operation of the immigration control points.	)))))) April 2004)))))))	)))Funding approval from the Finance)Committee was obtained on 11 January)2002. Development work is in active)progress. The Programme will be rolled out)in April 2004 and completed in June 2004.)))))
	9	**Improvement on Information Security** [D] The opportunity will also be taken to improve data security of ICAS.		
	10	**Information Systems (IS) Branch Organization Restructuring** [E] To restructure IS Branch (comprising 351 staff as at 1 August 2002) and strengthen it with IT professional staff to prepare for the implementation of the updated ISS.	Throughout the implementation of the updated ISS	With effect from 1 April 2001, the IS Branch of ImmD has been reorganised to integrate 48 IT professional grade staff (from ITSD) for enhanced coordination and effective implementation of the updated ISS. As an on-going exercise, divisions of IS Branch are being reorganized to achieve efficiency and save resources, and to enable the Branch to implement the updated ISS in a proactive and creative way.

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Phase II (2001-02)	11	**Automated Passenger Clearance** [D] To enable the clearance of passengers securely using smart card and biometrics technologies without the aid of an Immigration Officer with a view to speeding up passenger flow and optimising staff usage.	2004-05	FS was completed in September 2002. Implementation of the project is subject to funding approval from the Finance Committee.
Phase II (2001-02)	12	**Automated Vehicle Clearance** [D] To automate vehicle clearance at land crossing points through the establishment of self-service kiosks using vehicle identification and biometrics technologies with a view to raising the overall vehicle throughput and reducing traffic congestion.	2004-05	FS was completed in September 2002. Implementation of the project is subject to funding approval from the Finance Committee.
Phase II (2001-02)	13 14	**Capability Improvement Programme** **IS Process Improvement** [E] A comprehensive project to define the new processes for the restructured organisation to employ, and to train and support staff in their use. To equip the IS Branch with new and improved processes based on good IT industry practices, so that it can extend its management capability. **IS Performance & Quality Measuring** [E] To establish a culture of regular measurement and target setting, and to use this as the means of driving quality improvement with a view to improving the effectiveness of the IS Branch. Specifically, the IS Branch will conduct monthly performance review of how well information systems are doing in relation to agreed performance measurements and to publish regular performance reports. This Branch will also establish a system defect reduction plan for its units.	)))))))) Throughout the) implementation) of the updated) ISS)))))))))	)))))))To tie-in with project no. 10 (IS Branch)organization restructuring), these initiatives)will be pursued throughout the)implementation of the updated ISS.)))))))))

Notes :

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	15	**IS Strategy Project Office** ^E To set up a Project Office to conduct periodic reviews of the overall strategy, to adjust the implementation plan, and to obtain funding for successive Phases.	)))))	)))))
	16	**Change Management** ^E To define the formal ImmD approach to pro-actively managing change throughout the organisation and to underpin the process re-engineering activity required to deliver the benefits of technology to the business.	Throughout the implementation of the updated ISS	This initiative will be pursued in correspondence with the business process re-engineering opportunities throughout the implementation of the updated ISS.
Phase II (2001-02)	17	**Communication** ^E To communicate to the staff within ImmD to keep them informed of the progress of the implementation of the updated ISS and of the potential effects on business and people. The aim of this programme is to educate and inform all interested parties on a 'no surprises' basis to facilitate smooth implementation of the updated ISS.	Throughout the implementation of the updated ISS	The communication has started and the effort will be sustained throughout the implementation of the updated ISS.
Phase III (2002-03)	18	**Processing Automation System (PAS) Enhancement Programme** **PAS Enhancement** ^D To enhance the system to meet the current business requirements and address current deficiencies of the PAS and to raise its technology platform to support the introduction of imaging for more efficient handling of applications for visas, entry permits and extension of stay.	)))))))))) 2005-06))	)))))))FS is being conducted and will be completed)by June 2003. Implementation of the)project is subject to availability of funds.)
	19	**Integration of Supplementary Labour Scheme Information Management System (SIMS) into PAS** ^D The SIMS will be integrated with PAS to enable more effective maintenance of information on quotas of the importation of labour schemes.	)))))	))))

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	20	**Electronic Records Programme** **File Conversion** E A programme of work to progressively convert a colossal volume of essential non-electronic records into electronic machine-readable format to support and enable business process re-engineering activity and new systems implementations. The records include visa, travel document and civil registration applications.	))))))))	))))))))
	21	**Imaging** E To exploit imaging technology and to implement imaging solutions in line with business requirements, namely, to make more information available to greater number of staff at faster speed and to achieve savings in staff and accommodation.	) 2005-06))))))	)FS will be conducted in February 2003.)Implementation of the project is subject to)availability of funds.)))).
	22	**Workflow** E To employ workflow tools and techniques to automate some business processes, in particular, those repetitive administrative procedures, with a view to improving the office efficiency.	))))))	))))))
	23	**Document Management** E To define and implement documentation management standards and practices in ImmD and to centralise document management under a single management responsibility with a view to improving information management and to enhance productivity.	))))))	))))))
Phase IV (2003-04)	24	**Data Warehousing (Management Information System)** D To provide user-friendly access to information held in ImmD databases and to make it readily available to ImmD management to aid their decision making, and to assist in the acquisition and deployment of resources more intelligently.	2006-07	FS will be conducted in December 2003. Implementation of the project is subject to availability of funds.

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Phase IV (2003-04)	25	**Intranet Implementation** [D] To install an intranet with increasing range of facilities and information for more speedy and effective communication among some 3,000 ImmD staff. The project will improve staff productivity and morale.	2006-07	Implementation of the project is subject to availability of funds.
	26	**Electronic Service Delivery Support** [D] An ongoing programme to offer a wider range of information and services to the public via the Government Electronic Service Delivery (ESD) infrastructure.	2006-07	Implementation of the project is subject to availability of funds.
Phase IV (2003-04)	3 (Part II)	**Electronic Visa/Permit & Advance Passenger Processing [Full Version]** [D] To provide alternative means for travellers to Hong Kong to apply for and be issued with permits or visas which may be electronic or in hard copy to be delivered by new and more efficient methods. To utilise data captured at airline check-in to allow pre-checking of passengers and to facilitate passenger processing.	2006-07	Implementation of the project is subject to availability of funds.
	27	**Business Information** [E] To provide secure electronic access to essential documents required by ImmD officers in their day-to-day duties, and to the public via ESD.	2006-07	Implementation of the project is subject to availability of funds.
	28	**Chinese Language Support** [D] To introduce Chinese language facilities into ImmD information systems wherever feasible and affordable.	2006-07	FS will be conducted in April 2004. Implementation of the project is subject to availability of funds.

Notes :

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	29	**Personnel Support** [E] To provide systems, tools and facilities to support the ongoing training of ImmD personnel in both IT and business matters through the personnel training system and to provide a personnel information system in order to manage career progression and handle duty rostering for about 4,000 service staff.	2006-07	FS will be conducted in April 2004. Implementation of the project is subject to availability of funds.
	30	**Additional Long Range Strategic Studies** [E] To explore in detail other possible strategic opportunities identified in the ISS Review with a view to bringing about cost saving and cost avoidance.	2006-07	ImmD will conduct these long range studies after implementing the time- and mission-critical initiatives under the updated ISS.

Notes :

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APC Implementation Plan

	Activity	**Timing**
(a)	Tendering	February 2003 to October 2003
(b)	System design and development	November 2003 to July 2004
(c)	User Acceptance Test	June 2004 to October 2004
(d)	User Training	July 2004 to June 2005
(e)	Site preparation (by phases)	October 2004 to June 2006
(f)	Roll-out to control points (by phases)	November 2004 to June 2006

AVC Implementation Plan

	Activity	**Timing**
(a)	Tendering	February 2003 to October 2003
(b)	System design and development	November 2003 to July 2004
(c)	User acceptance test	June 2004 to October 2004
(d)	Site preparation	June 2004 to September 2004
(e)	User Training	July 2004 to October 2004
(f)	Roll-out to vehicular control points	November 2004 to December 2004