

**For discussion on  
16 March 2004**

**Panel on Security of the Legislative Council**

**Implementation of Phase III of  
the Updated Information Systems Strategy  
for the Immigration Department –  
Application and Investigation Easy System (APPLIES) and  
Electronic Records Programme (ERP)**

**INTRODUCTION**

This paper informs Members of the progress of the implementation of Phase I and Phase II of the updated Information Systems Strategy (ISS-2) of the Immigration Department (ImmD) and the plan for implementing the projects under Phase III of the ISS-2 comprising the Application and Investigation Easy System (APPLIES) and the Electronic Records Programme (ERP).

**BACKGROUND**

2. In 1999, the ImmD formulated the ISS-2 which aims to meet the growing demand 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 are being 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)) and its second phase at the meeting on 5 December 2002 (LC Paper No. CB(2) 520/02-03(03)).

**PROGRESS OF ISS-2**

**Phase I**

3. Implementation of Phase I of the ISS-2 has been proceeding smoothly. The development work of the Information Technology Infrastructure Upgrade Programme<sup>1</sup> started in January 2002 and will be completed in October 2004 as

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<sup>1</sup> Information Technology Infrastructure Upgrade Programme is to upgrade the IT infrastructure of ImmD,

scheduled. The implementation of the Immigration Control Automation System (ICAS) Enhancement Programme<sup>2</sup> is in good progress. The enhanced ICAS will be rolled out at the control points in phases from March this year and is scheduled for completion by June 2004.

## **Phase II**

4. On 24 January 2003, the Finance Committee approved funds for the implementation of Phase II of the ISS-2 [vide FCR(2002-03)51] which comprises the Automated Passenger Clearance (APC) System and the Automated Vehicle Clearance (AVC) System<sup>3</sup>. The contract for implementation of these systems will be awarded to the successful tenderer in March 2004. It is expected that the AVC System will be implemented in end 2004 while the APC System will be rolled out at immigration control points by phases spanning from end 2004 to mid-2006. An updated ISS-2 implementation plan is at **Annex A** for reference.

## **Phase III**

5. Phase III of the ISS-2 covers the enhancement of the existing Processing Automation System (PAS) to turn it into APPLIES and the implementation of an Electronic Records Programme (ERP) to enable business transactions in ImmD, in particular those related to APPLIES, be conducted digitally with the availability of electronic records.

### **APPLIES (enhancement of PAS)**

6. Designed in 1993 and implemented in 1995, PAS supports the processing of applications for visas, permits, travel passes, registration matters relating to births, deaths, and marriage and investigation cases, etc. It provides indexing, history tracking and result updating functions for these cases. Assessment of the applications and handling of the investigation cases are dealt with manually on paper files. Decision is made based on the previous records stored in a variety of forms including paper file, microfilm and microfiche. The system is aging and currently running on out-dated hardware and software platforms<sup>4</sup> which are facing the problems of obsolescence and lack of

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which provides the infrastructural communication network and system architecture underpinning all application systems of the Department.

<sup>2</sup> ICAS Enhancement Programme is to enhance the existing ICAS which supports the immigration clearance services at immigration control points.

<sup>3</sup> APC and AVC Systems will automate the immigration clearance process to cope with the significant increase in passenger and vehicular traffic at immigration control points.

<sup>4</sup> Examples of the outdated components are personal computer (PC) with 486 processor, Windows 3.x operating

maintenance support. The functionality of the system is limited and provides only auxiliary service to the case officer.

7. The feasibility studies conducted in 2003 concluded that it is necessary to enhance PAS by a new electronic record-based computer system. The enhanced system (i.e. APPLIES) will enable ImmD to cope with the increasing workload and the continuous demand for service improvements; achieve productivity improvement; and provide necessary management information for better decision making and resources planning. APPLIES has the following features -

- (i) case officer assessing the applications and handling investigation cases will work on a paperless environment supported by imaging facilities, automatic tracking and case distribution functions, on-line processing capability as well as expert system technology to facilitate decision making and investigation;
- (ii) the public will be able to submit applications for most services by electronic means, and to obtain services required with one visit or the minimum number of visits. The processing time can be significantly shortened. The applicant can also check the progress of the application by electronic means;
- (iii) the system will integrate standalone systems developed through end user computing to provide better system support to process applications; and
- (iv) the system will provide enhanced functionalities to investigation officers including information analysis, data dissemination, operation support, detention control and electronic printing of recognizance forms.

## ERP

8. Records in ImmD are maintained in a variety of forms. Some of the records are digitised but the majorities are held in different forms of hardcopies such as paper files, microfilm or microfiche. The out-dated mode of record maintenance is costly, space-, time- and labour-intensive and has to some extent hampered the efficiency of case processing as well as inhibited new initiatives for service delivery. ERP will put in place necessary technical architecture to provide for a paperless environment in ImmD through the employment of imaging, workflow and document management technologies. All necessary

records supporting the processing of cases and administrative activities will be converted into a digital format either through a conversion exercise beforehand or on the spot upon request. All references to records and handling of administrative matters can be done on-line under a secure and tight control environment. Manual maintenance and distribution of records and files will be phased out. The modernized mode of document management enables a highly efficient workflow-based business process and further enhances productivity and green management.

## **BENEFITS**

9. The successful implementation of APPLIES and ERP will enable ImmD to achieve the following benefits –

### **I. Tangible Benefits**

It will bring about annual savings of \$124,386,000 from 2007-08 onwards, comprising –

(a) Staff cost savings

Annual savings in staff cost of \$71,242,000 (deletion of 159 posts) will be attained.

(b) Cost avoidance

Cost avoidance of \$32,526,000 will be attained, resulting from sustaining the staff savings arising from the implementation of existing systems and avoiding the creation of posts for coping with the increase in workload, etc.; and

(c) Other Savings

Annual savings of \$20,618,000 resulting from maintenance costs of existing computer equipment, office space and consumables will be attained.

### **II. Intangible Benefits**

- (a) APPLIES and ERP will enable ImmD to cope with the projected growth in workload arising from a rising number of applications for

immigration facilities up to at least 2011-12.

- (b) Digitization of relevant records enables ImmD to move away from a paper-driven and constrained workplace to a highly efficient workflow based business environment thus improving the efficiency of record retrieval.
- (c) The modernized and centralized records system will enable ImmD to shorten the turnaround time for application processing (for example, processing time for application for entry for employment can be shortened by 3 to 5 working days whereas the search of birth, death or marriage records could be reduced to several minutes. Besides, the number of documents that applicants need to furnish and the number of their visits to immigration offices can also be reduced. 'One-stop' service will be possible for most types of applications.
- (d) The improvement in resilience and reliability of the system will help ensure that services to the public will not be disrupted.
- (e) With the introduction of electronic interface facilities in APPLIES, most of the applications including visa applications can be submitted electronically. Besides, the system will embody very user-friendly and bilingual features to facilitate the use by the public. This will encourage its utilization and help promote e-Government services.
- (f) The enhanced technology platforms of APPLIES will render better support to various service delivery schemes launched by the Government such as the Admission Scheme for Mainland Talents and Professionals and Capital Investment Entrant Schemes, and provide capability to push ahead various new initiatives conducive to the economic growth of the HKSAR, such as smart card based travel passes for frequent visitors, paperless visas, etc.
- (g) Improved record management and retrieval of relevant information enables law-enforcing officers to take more effective measures against unlawful employment, illegal immigration, overstaying, forgeries and human smuggling.

## **FINANCIAL IMPLICATIONS**

10. We estimated that the development and implementation of the projects would require:

	<b><u>\$ million</u></b>
(a) <u>Non-recurrent project expenditure</u> (for the acquisition of computer hardware and software, implementation services, engagement of contract staff, site preparation, training, consumables, miscellaneous items and contingency)	336.8
(b) <u>Other non-recurrent expenditure</u> (for setting up an in-house project management team)	100.4
(c) <u>Recurrent expenditure</u> (for hardware and software maintenance, maintenance services, consumable and miscellaneous items, communication lines, staff and accommodation of the on-going system support team)	40.6

In respect of (a), we aim to seek funding approval from the Finance Committee of the Legislative Council in May 2004. ImmD will absorb (b) and (c) within its resources. We expect to achieve break-even in 2011-12, i.e. five years after full implementation of the projects.

## **IMPLEMENTATION PLAN**

11. Following funding approval by the Finance Committee, ImmD will take forward the projects in June 2004. As APPLIES and the ERP are complex projects, there are numerous project activities to be pursued, such as tendering, system design and development, data conversion, site preparation, testing and training, etc. The project duration is estimated to be 31 months. These systems will accordingly be rolled out in 2006-07. Detailed implementation plan is set out at **Annex B**.

Security Bureau  
9 March 2004

### List of Projects and Macro Implementation Plan of the Updated ISS (ISS-2)

Phase	Project No.	Name of Project & Description	Implementation	Status
Phase 0 (1999-2000)	1	<b>HKSAR ID Card <sup>D</sup></b> To develop and implement the necessary infrastructure and application system for issuing smart ID cards to the citizens and to replace all existing ID cards by smart ID cards in 4 years	June 2003	Following implementation of the new system on 23 June 2003, a territory-wide ID Card replacement exercise commenced on 18 August 2003. The project is progressing smoothly.
Phase I (2000-01)	2	<b>Business Process Re-engineering (BPR) <sup>E</sup></b> To streamline and centralise work processes with the aim of significantly improving productivity as well as bringing the greatest benefit from new and improved information systems.	Throughout the implementation of the ISS-2	<p>Studies have been and will be conducted to identify BPR opportunities prior to implementation of the related information systems.</p> <p>BPR studies were conducted in 2000 on applications for extension of stay and visas; verification of right of abode claims; and management of births, deaths and marriage records. Recommendations of the studies became useful input to the FS on the Enhancement of Processing Automation System (PAS) which was completed in December 2003.</p> <p>BPR study was conducted from June to September 2002 on procedures on maintenance of microfilm and paper records. As a result, the overall efficiency has been increased and 17 posts were saved.</p>

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.



Phase	Project No.	Name of Project & Description	Implementation	Status
Phase I (2000-01)	3 (Part I)	<b>Electronic Visit Permit Application System (Pilot)<sup>D</sup></b> 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.)	March 2002	The iPermit System was successfully rolled out on 18 March 2002.
	4	<b>Infrastructure Upgrade Programme</b> <b>Mainframe Investment<sup>E</sup></b> To upgrade the processing and storage capacity of the mainframe to meet the needs of the ISS-2 applications.	) Stage I - ) building of an ) Administrative ) Network was ) completed in ) August 2003 ) ) Stage II- ) extending ) new ) Infrastructure ) to control ) points was ) completed in ) February 2004 ) ) Stage III- ) extending ) new ) Infrastructure ) to travel ) documents ) issue ) offices by ) October 2004.	Funds were approved by the FC on 11 January 2002. Development work is in progress according to schedule. The Programme will be completed in October 2004.
	5	<b>Midrange Investment<sup>E</sup></b> 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.		
	6	<b>Desktop Investment<sup>E</sup></b> 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.		
	7	<b>Communications Network Investment<sup>E</sup></b> To upgrade the communication network (a core IT infrastructure component shared by all ImmD applications now serving the immigration headquarters, 39 branch offices and 10 control points) to support the ISS-2 applications and new offices and control points.		

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Phase	Project No.	Name of Project & Description	Implementation	Status
			<ul style="list-style-type: none"> <li>) Aging desktop</li> <li>) personal</li> <li>) computers are</li> <li>) being replaced in</li> <li>) an orderly</li> <li>) programme and</li> <li>) will be connected</li> <li>) to the</li> <li>) Administrative</li> <li>) Network for more</li> <li>) functions.</li> </ul>	
Phase I (2000-01)	8	<b>Immigration Control Automation System (ICAS)</b> <b>Enhancement Programme</b> <b>ICAS Enhancement <sup>D</sup></b> 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 ISS-2 to improve the efficiency and effectiveness of the operation of immigration control points.	<ul style="list-style-type: none"> <li>)</li> <li>)</li> <li>)</li> <li>) March to June</li> <li>) 2004</li> <li>)</li> <li>)</li> <li>)</li> <li>)</li> <li>)</li> <li>)</li> </ul>	<ul style="list-style-type: none"> <li>)</li> <li>)</li> <li>)</li> <li>) Funds were approved by the FC on 11</li> <li>) January 2002. Development work is</li> <li>) in progress. The new system will be</li> <li>) rolled out from March 2004 by stages</li> <li>) and will be completed in June 2004.</li> <li>)</li> <li>)</li> <li>)</li> <li>)</li> </ul>
	9	<b>Improvement on Information Security <sup>D</sup></b> The opportunity will also be taken to improve data security of ICAS.	<ul style="list-style-type: none"> <li>)</li> <li>)</li> <li>)</li> <li>)</li> <li>)</li> <li>)</li> <li>)</li> <li>)</li> <li>)</li> <li>)</li> <li>)</li> </ul>	<ul style="list-style-type: none"> <li>)</li> <li>)</li> <li>)</li> <li>)</li> <li>)</li> <li>)</li> <li>)</li> <li>)</li> <li>)</li> <li>)</li> <li>)</li> </ul>

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Phase	Project No.	Name of Project & Description	Implementation	Status
	10	<b>Information Systems (IS) Branch Organisation Restructuring<sup>E</sup></b> To restructure the IS Branch (comprising 358 staff as at 1 January 2004) and strengthen it with IT professional staff to prepare for the implementation of the ISS-2.	Throughout the implementation of the ISS-2	With effect from 1 April 2001, the IS Branch of the Department has been reorganized to integrate 48 IT professional grade staff from ITSD to enhance coordination and effective implementation of the ISS-2.  Divisions of the IS Branch have been re-organized since October 2003 to improve efficiency and productivity. As a result, 13 posts were saved.
Phase II (2001-02)	11	<b>Automated Passenger Clearance<sup>D</sup></b> 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.	November 2004	Funds were approved by the FC on 24 January 2003. The contract for implementation of the system will be awarded to the successful tenderer in March 2004. The system will be rolled out in the end of 2004 and the whole programme completed in June 2006.
	12	<b>Automated Vehicle Clearance<sup>D</sup></b> 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.	November 2004	Funds were approved by the FC on 24 January 2003. The contract for implementation of the system will be awarded to the successful tenderer in March 2004. The system will be rolled out in the end of 2004.

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Phase	Project No.	Name of Project & Description	Implementation	Status
Phase II (2001-02)	13	<b>Capability Improvement Programme</b> <b>IS Process Improvement<sup>E</sup></b> 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.	Throughout the implementation of the ISS-2	To tie-in with Project No. 10 (IS Branch organization restructuring), these initiatives have been pursued throughout the implementation of the ISS-2.
	14	<b>IS Performance &amp; Quality Measuring<sup>E</sup></b> 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.		
	15	<b>IS Strategy Project Office<sup>E</sup></b> 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	<b>Change Management<sup>E</sup></b> To define the formal departmental approach to proactively manage change throughout the organization and to underpin the process re-engineering activities required to deliver the benefits of technology to the business.		

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Phase	Project No.	Name of Project & Description	Implementation	Status
Phase II (2001-02)	17	<b>Communication<sup>E</sup></b> To communicate to the staff within the Department to keep them informed of the progress of the implementation of the ISS-2 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 ISS-2.	Throughout the implementation of the ISS-2	The communication has started and the effort will be sustained. The implementation of the prototype intranet (Project No. 25) in June 2003 is one of the measures.
Phase III (2002-03)	18	<b>Processing Automation System (PAS) Enhancement Programme [now known as the Application and Investigation Easy System (APPLIES)]</b> <b>PAS Enhancement<sup>D</sup></b> 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.	2006-07	FS was completed in December 2003. Implementation of the project is subject to availability of funds.
	19	<b>Integration of Supplementary Labour Scheme Information Management System (SIMS) into PAS<sup>D</sup></b> 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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Phase	Project No.	Name of Project & Description	Implementation	Status
Phase III (2002-03)	20	<b>Electronic Records Programme</b> <b>File Conversion</b> <sup>E</sup> 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.	2006-07	FS was completed in December 2003. Implementation of the project is subject to availability of funds.
	21	<b>Imaging</b> <sup>E</sup> 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.		
	22	<b>Workflow</b> <sup>E</sup> 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	<b>Document Management</b> <sup>E</sup> To define and implement documentation management standards and practices in the Department and to centralise document management under a single management responsibility with a view to improving information management and enhancing productivity.		

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Phase	Project No.	Name of Project & Description	Implementation	Status
Phase IV (2003-04)	24	<b>Data Warehousing (Management Information System)<sup>D</sup></b> To provide user-friendly access to information held in the Department's databases and to make it readily available to our management to aid their decision making, and to assist in the acquisition and deployment of resources more intelligently.	2006-07	FS was completed in February 2004. Implementation of the project is subject to availability of funds.
	25	<b>Intranet Implementation<sup>D</sup></b> To install an intranet with increasing range of facilities and information for more speedy and effective communication among staff of the Department. The project will improve staff productivity and morale.	2006-07	A prototype intranet was implemented in mid-2003. Expansion of the Intranet facilities will be continued.
	26	<b>Electronic Service Delivery Support<sup>D</sup></b> 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	The Department has been working closely with the Commerce, Industry and Technology Bureau to offer wider and better services to the public via the ESD infrastructure.
	3 (Part II)	<b>Electronic Visa/Permit &amp; Advance Passenger Processing [Full Version]<sup>D</sup></b> 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	The Department will join the feasibility study on the Advance Passenger Information System coordinated by the Asia Pacific Economic Co-operation in late 2004.

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Phase	Project No.	Name of Project & Description	Implementation	Status
Phase IV (2003-04)	27	<b>Business Information<sup>E</sup></b> To provide secure electronic access to essential documents required by our officers in their day-to-day duties, and to members of the public via ESD.	2006-07	This will be jointly studied with Project No. 26 [Electronic Service Delivery Support].
	28	<b>Chinese Language Support<sup>D</sup></b> To introduce Chinese language processing facilities into our departmental information systems wherever feasible and affordable.	2006-07	Chinese Language facilities have been and will be installed in relevant information systems of the ISS-2, especially the capability for handling simplified Chinese.
	29	<b>Personnel Support<sup>E</sup></b> To provide systems, tools and facilities to support the ongoing training of Immigration 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 the service staff.	2006-07	The Personnel Information System was enhanced in mid-August 2003. The system is linked to a newly developed system, Duty Roster System for control points to cater for flexible staff deployment. Computer Based Training materials have been uploaded to the intranet. Further enhancement to these related systems will be made.
	30	<b>Additional Long Range Strategic Studies<sup>E</sup></b> 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 ISS-2.

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Project Implementation Plan of Phase III of the ISS-2

<b>Activity</b>	<b>Tentative schedule</b>
(a) Tendering	
• Main System Functions	June 2004 to December 2004
• Electronic Service Delivery	April 2005 to December 2005
(b) System Design and Development (by phases)	
• Record Systems	January 2005 to May 2006
• Main System Functions	January 2005 to August 2006
(c) Live Run of Immigration Imaging Centre (IIC)	May 2006
(d) Records / Data Conversion	October 2005 to December 2006
(e) Site Preparation (by phases)	November 2004 to April 2006
(f) User Acceptance Test (by phases)	
• Administrative Records	August 2005 to October 2005
• Main System Functions	February 2006 to November 2006
(g) User Training (by phases)	
• Administrative Records	October 2005 to November 2005
• Main System Functions	March 2006 to December 2006
(h) Systems Roll-out	
• Administrative Records	November 2005
• Main System Functions (by phases)	May 2006 to December 2006