For discussion on
1 April 2022

Legislative Council Panel on Security

Enhancements on Information Systems of
the Immigration Department and Correctional Services Department

PURPOSE

This paper seeks Members' support for the following proposals on –

(a) the relocation of information technology ("IT") infrastructure and systems of the Immigration Department to the new Immigration Headquarters and related system enhancements;

(b) the relocation of IT systems to the new Correctional Services Department Headquarters ("CSD HQ") and related system enhancement;

(c) the development of the Central Control Centre System and Geographic Information System at the new CSD HQ; and

(d) the full implementation of "Persons-in-custody Integrated Intelligent Communication System" in 19 correctional institutions/facilities.

2. Details of the above proposals are at **Annexes 1 to 4**.

ADVICE SOUGHT

3. Members are invited to comment on the above proposals. Subject to Members' views, we will seek funding for the proposals from the Legislative Council according to the established mechanism.

Security Bureau
Immigration Department
Correctional Services Department
March 2022

**Relocation of Information Technology Infrastructure and
Systems of the Immigration Department to the New Immigration
Headquarters and Related System Enhancements**

PURPOSE

This paper seeks Members' support for the proposal on the relocation of information technology ("IT") infrastructure and systems of the Immigration Department ("ImmD") to the new Immigration Headquarters ("ImmD HQ") and related system enhancements.

BACKGROUND

2.　　The Government has decided that the bureaux/departments and the Judiciary in the Wan Chai Government Offices Compound ("WCGOC") will be relocated in phases with a view to releasing the space concerned for other purposes.　　The new ImmD HQ is being constructed in Tseung Kwan O for reprovisioning of the existing ImmD HQ accommodated in the Immigration Tower of WCGOC and ImmD's offices and facilities currently located in various districts and leased premises.　　The Finance Committee ("FC") of the Legislative Council has previously approved in May 2019 a commitment of $6,806.0 million in money-of-the-day prices for the construction of the new ImmD HQ.

3.　　As an integral part of the relocation of the ImmD HQ, ImmD's IT systems and related IT facilities currently housed in the existing ImmD HQ and the leased Data Centre for System Production ("PDC")[1] will have to be relocated to the new ImmD HQ.　　In order to ensure the smooth relocation of

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[1]　　At present, ImmD has acquired the services of two leased data centres, namely the Data Centre for System Production ("PDC") and Data Centre for System Development and Resilience ("DDC") to support its operational needs.　　It is planned that IT systems and related IT facilities currently accommodated in the PDC and DDC will be relocated to the new ImmD HQ and the new Government DC Complex respectively.

the IT systems and facilities and enhance ImmD's handling capacity to cope with growing business needs in the next decade, it is essential to implement a new IT infrastructure with higher performance and capacity at the new ImmD HQ. Taking this opportunity, ImmD also plans to take forward various system enhancements with a view to providing better and more convenient services to members of the public at the new ImmD HQ.

4.   According to the latest construction schedule, the new ImmD HQ will be ready for setting up the new IT infrastructure in mid-2023 so that phased relocation of ImmD's offices to the new ImmD HQ ("the relocation exercise") can commence in the first quarter of 2024.

JUSTIFICATIONS

(a)   ***Relocation of IT systems and facilities to the New ImmD HQ and minimise the risk and service impact during the relocation exercise***

5.   ImmD provides a wide range of public services that are closely related to the daily lives of members of the public. These include registration of births, marriage and deaths; registration of persons (i.e. application for Hong Kong identity cards("HKICs")); application for various types of travel documents (such as Hong Kong Special Administrative Region ("HKSAR") passport, Document of Identity for Visa Purposes, Re-entry Permit, etc.) and visas/entry permits (such as visit, employment, investment, training, residence or study visas); provision of round-the-clock immigration clearance services at control points; and provision of assistance to Hong Kong residents in distress outside Hong Kong, etc. To support the day-to-day operations and provision of public services, ImmD is currently making extensive use of various IT systems which have been implemented in the past decade following ImmD's third Information Systems Strategy ("ISS-3") Review in 2010. The IT systems and related facilities are currently housed at existing ImmD HQ, various ImmD Offices and data centres ("DCs").

6.   As part of the WCGOC relocation plan, it is necessary to relocate the 18 existing IT systems (details as set out in **Enclosure 1**) and related IT facilities (with around 800 servers and 6 000 workstations) currently housed in

the existing ImmD HQ at the Immigration Tower and PDC to the new ImmD HQ. To ensure uninterrupted delivery of public services and smooth relocation of the IT systems, a new enterprise network backbone and a permanent DC with adequate system capacity and handling capability have to be designed and built at the new ImmD HQ before the commencement of the relocation exercise. Moreover, professional relocation service will be procured to relocate the significant numbers of IT systems and facilities in phases in a safe, secure and efficient manner.

7. The newly built enterprise network backbone will be able to provide stable, reliable, scalable interconnections of IT systems and facilities among the existing ImmD HQ, the new ImmD HQ (including one permanent DC therein), the Government DC Complex[2] and PDC in the course of the relocation exercise to sustain ImmD's daily operations continuously and cope with future business needs.

8. Moreover, ImmD has currently acquired the DC services at PDC and DDC for supporting its daily operations and providing public services. Upon completion of the new ImmD HQ, the 18 IT systems in hundreds of server racks currently accommodated in PDC and the existing ImmD HQ will be relocated to the permanent DC at the new ImmD HQ by batches. It will save significant leasing and operating costs in the long run.

(b) *Replacement of obsolete IT components*

9. As mentioned in paragraph 5 above, ImmD's existing IT infrastructure has been set up for nearly 10 years since 2014 following the ISS-3 Review. ImmD is facing increasing difficulties in securing critical maintenance of the major hardware and software of the existing IT infrastructure due to their limited serviceable lifespan. It is necessary to upgrade the existing ageing IT infrastructure underpinning ImmD's IT systems and replace obsolete IT components to enhance system reliability and handling capacity so as to cope with the rapidly growing service demand as well as future business needs. Without upgrading the IT infrastructure and replacement of the obsolete IT components, there is an increasing risk of substantial deterioration of system

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2   The IT systems and related IT facilities currently accommodated in DDC would be relocated to the new Government DC Complex. The relevant funding was approved by the Finance Committee of the Legislative Council on 9 December 2011. Details are set out in the paper FCR(2011-12)56.

performance or system failure, which may cause large-scale disruption or even suspension to the provision of public services.

(c) **Introduction of new systems/enhancements to enhance service quality to the public**

10.   ImmD will take this opportunity to enhance public services by adopting new technology to meet future business needs of the new ImmD HQ. To this end, the following new systems/enhancements will be introduced –

(i)   Implementation of the Next Generation Immigration Enquiry Service System ("IESS-2")

11.   As part of ImmD's delivery of public services, ImmD handles general enquiries raised by the public by phone, in writing or in person.   The enquiry service concerned is currently supported by the Immigration Enquiry Services System ("IESS"), which has been put into operation since 2009.   The IESS has various functions, such as –

(a)   centralised handling and management of all incoming enquiries through the departmental General Enquiry Hotline (2824 6111) and email address (enquiry@immd.gov.hk);

(b)   provision of interactive voice response for incoming enquiries by phone operating on a round-the-clock basis; and

(c)   provision of administrative tools for access rights control, statistical analysis and performance management, etc.

12.   On average, more than 1.85 million enquiries (including 1.45 million phone calls, 0.2 million emails and 0.2 million counter enquiries) were received annually in recent years.   In view of the rapid expansion of ImmD's scope of services and the need to handle emergency situations, the number of enquiries is envisaged to be on the rise in the coming years.

13.   To prepare for upsurge of service demand in future and enhance general enquiry service, ImmD plans to implement a new system, namely IESS-2.   In addition to the functions of the existing IESS, the IESS-2 will support new features, such as self-service enquiry kiosks with artificial

intelligence engines, voice navigation on interactive voice response system, conversational voicebots and web-based enquiry forms.   By applying the latest information technology, the IESS-2 will not only enable ImmD to meet the growing service demand and improve operational efficiency, but also provide a broader scope of more user-friendly and responsive digital public services.

(ii)   Implementation of the Personal Documentation Submission Kiosks and Personal Documentation Collection Kiosks

14.   At present, ImmD provides dedicated self-service kiosks for applicants for HKIC to fill in application forms or collect HKIC.   The application and registration processes (including submitting application forms, taking photos and fingerprints of the applicants) are completed at manned registration booths in the Registration of Persons ("ROP") Offices. Meanwhile, ImmD also provides dedicated self-service kiosks for submitting HKSAR passport applications and collecting HKSAR passport.   That said, the dedicated kiosks are unable to support HKIC-cum-travel documents applications or to allow applicants to collect both documents in one go.

15.   ImmD plans to introduce new self-service kiosks at the new ImmD HQ, namely the Personal Documentation Submission Kiosks ("PDSKs") and Personal Documentation Collection Kiosks ("PDCKs"), to provide self-service option for application and collection of HKICs and travel documents.

16.   Upon the introduction of the new self-service kiosks, applicants for HKIC may choose to submit the application forms and perform the registration steps (including taking photos and fingerprints) using self-service PDSKs, in addition to using the manned registration booths of ROP Offices.   Moreover, applicants will be able to submit HKIC-cum-travel documents applications and perform the registration steps using the PDSKs in one go.   Upon approval of the applications, applicants may choose to use the new PDCKs to collect their HKICs and/or travel documents in a fully automated manner both during and outside normal office hours.

17.   Applicants will benefit from the introduction of the new PDSKs and PDCKs during the application and collection processes of HKIC and travel

documents. The provision of self-service PDSKs and PDCKs will not only reduce the processing time at traditional registration booths, but also dovetail the Government's key policy on innovation and technology and support a paperless application workflow.

(iii)   <u>Implementation of the Central Services Queuing Management System ("CSQMS")</u>

18.   ImmD currently provides a wide range of public services. While ImmD is committed to making greater use of IT to facilitate various online applications, there are inevitably some applications where the applicants are required to submit or collect the documents in person or attend face-to-face interviews. At present, applicants visiting the existing ImmD HQ are required to obtain a tag in person at the respective offices which are located on the different floors of the existing ImmD HQ. To enhance the operational efficiency and user experience during the process of application and collection of various documents, ImmD plans to implement a new CSQMS at the new ImmD HQ to centrally manage the issuance of tags and queuing situation for different kinds of public services, including application for visas, HKICs and travel documents.

19.   The new CSQMS will allow walk-in applicants to obtain service tags at the self-service issuance kiosks and via ImmD Mobile App. Applicants with appointment bookings may make use of the self-service kiosks on respective floors to check in upon arrival at the new ImmD HQ. Real-time service delivery statistics (e.g. number of queuing applicants, average waiting time) will be readily accessible by the management staff for closely monitoring performance targets. Applicants may also check the queuing status on the display screens or in the ImmD Mobile App. The new system will also provide push notifications and announcement to call up applicants to proceed to corresponding service counters/kiosks for processing their applications.

20.   The implementation of the CSQMS can streamline the workflow of application processing and collection of documents at the new ImmD HQ, thereby bringing better user experience and greater convenience to the public. With all application and collection requests being organised by the CSQMS in a systematic manner, crowd gathering at the new ImmD HQ may be reduced.

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

21.   The proposal will involve an estimated non-recurrent expenditure of $710,227,000 over a four-year period from 2022-23 to 2025-26.   A detailed breakdown is at **Enclosure 2**.

Other Non-Recurrent Expenditure

22.   The proposal will require a project team for project management, procurement of hardware, software and services, system analysis and design, site preparation, user acceptance tests and implementation support, etc.   This will entail a non-recurrent staff cost of $51,681,000 from 2022-23 to 2025-26.   ImmD will review the staffing requirement as the project progresses.

Recurrent Expenditure

23.   The estimated recurrent expenditure will be $3,288,000 in 2024-25, and will increase to $79,298,000 per annum from 2026-27 onwards.   The recurrent expenditure mainly covers the costs for hardware and software maintenance, system maintenance, communication network, engagement of contract staff services and consumables, etc.   A detailed breakdown is at **Enclosure 3**.   After offsetting the realisable savings of $13,150,000 per annum as detailed in paragraph 25(b), the proposed project will require a net recurrent cost of $66,148,000 per annum from 2026-27 onwards.

24.   Besides, system administration, operations and support will involve an additional annual staff cost of $24,349,000 from 2026-27 onwards.

Cost savings and avoidance

25.   It is estimated that the implementation of the project will bring about total annual savings and avoidance of $34,155,000 from 2026-27 onwards, comprising –

(a) Annual notional savings of $2,881,000

With the improvement of the operational efficiency to be brought by the implementation of the PDSKs and PDCKs, notional savings of $2,881,000 will be achieved from 2025-26 onwards through fragmented reduction in staff efforts on the registration process of ROP offices among other duties;

(b) Annual realisable savings of $13,150,000[3]

Realisable savings of $13,150,000 will be achieved from 2025-26 onwards as the leased DC services for PDC will no longer be required after its relocation to the new ImmD HQ; and

(c) **Annual cost avoidance of $18,124,000**

(i) Staff cost of $10,622,000 from 2024-25 onwards will be avoided given the efficiency achieved through the IESS-2 and additional manpower will not be required to cope with the increasing workload on enquiry services under the existing IESS; and

(ii) The additional maintenance cost of $7,502,000 from 2026-27 onwards for sustaining the existing network infrastructure will also be avoided with the implementation of the proposed project.

26.   In addition, it is estimated that there will be a **one-off cost avoidance of $73,647,000,** which would otherwise be incurred for relocation of the PDC to an interim location if ImmD could not secure the renewal of the current lease in-situ upon its expiry.

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[3]   The cost for leasing the PDC is currently funded under the project vote of the "New Information Infrastructure of the Immigration Department" (A058YF).   The relevant funding was approved by FC in December 2011.

IMPLEMENTATION PLAN

27.   Subject to Members' views on the proposal, we plan to seek funding approval from the FC in the second quarter of 2022 so that tendering may begin as soon as in 2023.   Completion of the relocation of IT systems and facilities to new ImmD HQ and roll-out of the new system/enhancements are targeted in the first quarter of 2025.   A detailed implementation plan is at **Enclosure 4**.

ADVICE SOUGHT

28.   Members' views are invited on the above proposal and our plan to seek funding approval from FC.

Immigration Department's Information Technology Systems to be relocated to the new Immigration Headquarters

Systems	Details
1. Immigration Control System	It provides immigration control services for the passengers and vehicular traffic of the control points in Hong Kong.
2. Next Generation Smart Identity Card System	It supports the registration and production of Hong Kong identity cards ("HKICs").
3. Next Generation Application and Investigation Easy System	It supports the processing of applications for visas and permits, registration matters relating to births, deaths and marriage; providing assistance to Hong Kong residents in distress outside Hong Kong; and handling and investigation of law enforcement cases.
4. Next Generation Electronic Passport System	It supports the application and production process of the electronic Hong Kong Special Administrative Region ("HKSAR") passport and other travel documents.
5. Corporate Data Repository and Common Data Services	It provides common services in supporting mission-critical information technology ("IT") systems of Immigration Department ("ImmD") for accessing the common business data stored in the Corporate Data Repository.
6. User and Profile Management System	It provides common functions and services for user and profile management, and facilitates user authentication process for mission-critical IT systems of ImmD.
7. Next Generation Electronic Services System	It provides a single and common application hosting platform and infrastructure for supporting online application submission, appointment booking and application status enquiry.

Systems	Details
8. Next Generation Tag System	It issues tags to applicants obtaining public services at ImmD's offices to facilitate the processing of applications and collection for HKICs, HKSAR passports, Documents of Identity for Visa Purposes, etc.
9. iAM Smart Checking System	It provides services to iAM Smart Core System of the Office of the Government Chief Information Officer for checking iAM Smart applicants' information.
10. Government Office Automation ("GOA") System	It supports daily operation of GOA client workstations and Internet access.
11. Electronic Leave Application and Processing System and Leave Recording and Calculation System	It supports leave application and leave calculation for ImmD's staff.
12. Data Warehousing Information System	It provides data warehousing services for data extracted from various mission-critical IT systems of ImmD.
13. Computer Output Management System	It is a "File and Print" system to grant online access to necessary reports through GOA workstations in a paperless environment.
14. Open Source Departmental Portal	It enables Government users to securely access Government-to-Government/Government-to-Employees Services.
15. Intranet Portal	It provides an electronic channel for fast dissemination of information among ImmD's staff.
16. Web Content Management System	It provides maintenance functions for ImmD's website.

Systems	Details
17. Online Checking System for Subsidised Public Healthcare Services	It assists public hospitals and clinics to verify the eligibility to subsidised public healthcare services.
18. New 1868	It provides services for the "1868" hotlines for offering assistance to Hong Kong residents in distress outside Hong Kong.

**Non-recurrent Expenditure for
Relocation of Information Technology Infrastructure and
Systems of the Immigration Department to
the New Immigration Headquarters and Related System Enhancements**

	Item	2022-23 ($'000)	2023-24 ($'000)	2024-25 ($'000)	2025-26 ($'000)	Total ($'000)
(a)	Hardware	-	163,208	96,688	53,327	**313,223**
(b)	Software	-	2,125	31,679	17,458	**51,262**
(c)	Communication Network	-	2,943	7,397	2,128	**12,468**
(d)	Implementation Services	-	14,917	146,228	36,722	**197,867**
(e)	Contract Staff	10,206	13,306	26,843	693	**51,048**
(f)	Site Preparation	-	47,779	360	2,400	**50,539**
(g)	Contingency	510	12,214	15,460	5,636	**33,820**
	Total	**10,716**	**256,492**	**324,655**	**118,364**	**710,227**

Notes:

Item (a): the estimated expenditure of $313,223,000 is for acquisition of computer hardware, including network equipment, system servers, kiosks, storage devices and system backup equipment.

Item (b): the estimated expenditure of $51,262,000 is for acquisition of computer software, including system software and software packages.

Item (c): the estimated expenditure of $12,468,000 is for acquisition of communication network and related services for connecting the information technology component and equipment in various offices/locations.

Item (d): the estimated expenditure of $197,867,000 is for hiring of services from external service providers to implement the project, including system analysis and design, security risk assessment and audit, system development, installation, configuration, nursing and relocation services.

Item (e): the estimated expenditure of $51,048,000 is for engagement of services of contract staff to provide support in project planning, monitoring and conducting system acceptance tests.

Item (f): the estimated expenditure of $50,539,000 is for site preparation and cabling works for the new ImmD HQ.

Item (g): the estimated expenditure of $33,820,000 represents a 5% contingency on the costs items set out in items (a) to (f) above.

Recurrent Expenditure for
Relocation of Information Technology Infrastructure and
Systems of the Immigration Department to
the New Immigration Headquarters and Related System Enhancements

	Item	2024-25	2025-26	2026-27 and onwards
		($'000)	($'000)	($'000)
(a)	Hardware and software Maintenance	332	47,596	49,025
(b)	Communication Network		2,792	3,185
(c)	System Maintenance		20,137	21,758
(d)	Contract Staff	2,956	2,212	2,212
(e)	Consumables		779	3,118
	Total	**3,288**	**73,516**	**79,298**

Notes:

Item (a): the estimated annual expenditure of $49,025,000 is for provision of hardware and software maintenance, and for software license fee to support the information technology ("IT") infrastructure and systems.

Item (b): the estimated annual expenditure of $3,185,000 is for the communication network rental charges.

Item (c): the estimated annual expenditure of $21,758,000 is for provision of system maintenance by hiring of services from external service providers.

Item (d): the estimated annual expenditure of $2,212,000 is for engagement of services of contract staff to provide support in system maintenance of the IT infrastructure and systems.

Item (e): the estimated annual expenditure of $3,118,000 is for provision of consumables, such as tag labels, data tapes and printer toners, etc.

Implementation Plan for
Relocation of Information Technology Infrastructure and
Systems of the Immigration Department to
the New Immigration Headquarters and Related System Enhancements

Activity	**Target Completion Date**

1. *Reprovisioning of an Information Technology ("IT") Infrastructure at the New Immigration Headquarters ("new ImmD HQ")*

Tendering and award of contract	Q1/2023
System Analysis and Design	Q2/2023
Security Risk Assessment and Audit	Q1/2024
Completion of New Enterprise Network Backbone	Q1/2024
Roll-out of Technology Refreshment on Ageing IT Components	Q3/2025

2. *Relocation of IT systems and facilities to the New ImmD HQ*

Tendering and Award of Contract	Q3/2023
Formation of the Relocation Plan	Q1/2024
Preparation and Commencement of Relocation	Q1/2024
Completion of the Relocation of all IT Systems	Q1/2025

3. *Implementation of the Next Generation Immigration Enquiry Service System*

Tendering and Award of Contract	Q3/2023
System Analysis and Design	Q1/2024
Security Risk Assessment and Audit	Q4/2024
Full System roll-out and Nursing	Q1/2025

Activity	**Target Completion Date**

4. ***Implementation of Personal Documentation Submission Kiosks and Personal Documentation Collection Kiosks***

Tendering and Award of Contract	Q2/2023
System Analysis and Design	Q4/2023
Security Risk Assessment and Audit	Q4/2024
Full System Roll-out and Nursing	Q1/2025

5. ***Implementation of the Central Services Queuing Management System***

Tendering and Award of Contract	Q4/2023
System Analysis and Design	Q1/2024
Security Risk Assessment and Audit	Q4/2024
Full System Roll-out and Nursing	Q1/2025

Relocation of Information Technology Systems to the New Correctional Services Department Headquarters and Related System Enhancement

PURPOSE

   This paper seeks Members' support for the proposed relocation and enhancement of Information Technology ("IT") systems and facilities of the Correctional Services Department ("CSD") for the new CSD Headquarters ("HQ") Building in Chai Wan.

BACKGROUND

2. The Finance Committee ("FC") of the Legislative Council approved in December 2020 a commitment of $3,252.8 million in money-of-the-day prices for the construction of a twin-tower office building for the "Water Supplies Department Headquarters with Hong Kong and Islands Regional Office and Correctional Services Department Headquarters Building in Chai Wan", which is in connection with the relocation of government bureaux/departments ("B/Ds") and the Judiciary in the Wan Chai Government Offices Compound to make way for the development of convention and exhibition facilities, hotel facilities, and Grade A office space. Based on the current construction work schedule, the new CSD HQ in Chai Wan would be completed in the second quarter of 2024 at the earliest. Under the relocation plan, IT infrastructure and facilities will be established at the new CSD HQ. Besides, more than 30 existing IT application systems[1] running on more than 300 servers/virtual machines have to be relocated and re-provisioned at the new CSD HQ. To minimise service interruption, relocation and re-provisioning of IT systems and facilities has to tie in with the relocation plan of the new CSD HQ.

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[1] There are more than 30 IT application systems. Examples include e-mail system, intranet and departmental portal, Human Resources Management System, Internet access and remote access systems, backend system for CSD's mobile application and Official Visit Booking system.

JUSTIFICATIONS

Challenges and Limitations

3.   In addition, CSD commissioned the second Information Systems Strategy Study[2] ("ISSS") to cope with the development of correctional services for enhancing the efficiency of prison management and level of security.   The Study was completed in January 2021.   It set out the "Smart Prison" blueprint and recommended that CSD should upgrade its systems and IT infrastructure by taking the opportunity of the Department's relocation to the new CSD HQ.   It has identified the following challenges and limitations that CSD should tackle –

(a) Inadequate network infrastructure

The network infrastructure at the existing CSD HQ is limited in bandwidth and is not of a fully structured network design, thus hindering scaling up and expansion of network capacity and capability.   Besides, the existing insufficient network bandwidth has slowed down the network connections between the existing CSD HQ and other CSD correctional institutions and offices. Furthermore, the existing network infrastructure is inadequate in supporting the application of up-to-date solutions, such as video conferencing and real-time closed-circuit television ("CCTV") signal streaming from correctional institutions.

(b) Limitations in data centre

As the data centre located at the existing CSD HQ has reached its maximum capacity in terms of space, electricity supply and cooling, it is unable to meet the IT development needs of CSD in the long run, including the implementation of the "Smart Prison" strategy. Besides, the facilities of the data centre are aged, causing service interruption and downtime from time to time.

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[2]   To cope with the development of correctional services, CSD conducted the first ISSS in 2013.   The study recommended the development of an Integrated Custodial and Rehabilitation Management System (details of this system are set out in the ensuring paragraphs).   In 2019, CSD launched the second ISSS to evaluate the progress of projects proposed in the first ISSS and devise a technological development blueprint for "Smart Prison" to roll out innovation and technology projects in the short, medium and long term according to priorities.

(c) <u>Manufacturing Management and Control System ("MMCS") II, Job Costing System ("JCS") and e-Ordering Portal</u>

MMCS II, JCS and e-Ordering Portal[3] have been launched for more than ten years. Some software components have reached their end of support period. In addition, the central store of CSD's Industries Unit still relies on manual stock taking and updating of stock location details upon every transfer. All the above call for the upgrading of the said systems to enhance operational efficiency.

(d) <u>Centralised Pharmacy</u>

At present, there is no centralised pharmacy in CSD. Under the current arrangement, dispensaries at correctional institutions are functioning independently. With the set-up of a Centralised Pharmacy, being part of the funding proposal approved by the FC in December 2020 for the construction of, among others, CSD HQ Building in Chai Wan, the second ISSS recommended the set-up of a corresponding central pharmacy system, namely the Pharmacy Inventory and Warehouse Management System, to support the Centralised Pharmacy in the new CSD HQ Building.

(e) <u>Integrated Custodial and Rehabilitation Management System ("iCRMS")</u>[4]

iCRMS, the key penal system supporting CSD's daily operation and "Smart Prison" systems integration, is being developed and expected to come into operation in 2023. The core systems of iCRMS are currently set up in the server room at the Lai Chi Kok Reception Centre ("LCKRC"). The systems require further enhancement to enable system expansion and extension, which is

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[3] MMCS and JCS are IT systems to support CSD's Correctional Services Industries ("CSI") business for order processing, material procurement and job cost recovery. The e-Ordering Portal is a system for B/Ds' online ordering of CSI products.

[4] CSD's existing custodial and rehabilitation operations are supported by eight core operational systems, which play a pivotal role in supporting the operations of CSD. For enhancing efficiency and supporting future service expansion, as approved by the FC in 2016, the existing eight systems will be consolidated into iCRMS to be the key penal system to support CSD's daily operation. The existing eight systems are the Penal Record Information System, the Rehabilitation Programmes Management System, the Automatic Fingerprint Identification System, the Patrol Management System, the Tracking and Recording System for Urine Test, the Security Intelligence Management System, the Inmate Mail Information System, and the Drug Management System.

however constrained by the limited space and facilities of the server room at LCKRC. Relocation of iCRMS to the new CSD HQ is necessary.

The Proposal

4. Based on the recommendation of the second ISSS, CSD proposes implementing the following projects starting from 2022-23 –

(a) Design and construction of the server farm and supporting systems for the relocation/re-provisioning of relevant systems from the existing CSD HQ to the new CSD HQ;

(b) Design and construction of an updated network infrastructure in the new CSD HQ;

(c) Design and construction of a data centre in the new CSD HQ[5];

(d) Re-development of MMCS II, JCS and e-Ordering Portal;

(e) Setting up of the Pharmacy Inventory and Warehouse Management System in the new CSD HQ; and

(f) Relocation of iCRMS to the new CSD HQ.

5. Having regard to the construction work schedule of the new CSD HQ, with a view to facilitating its timely operation in 2025 as planned, the establishment of the data centre and the network infrastructure as mentioned in paragraphs 4(b) to (c), which are the core parts of the proposal, have to be completed by end 2024.

6. In addition, CSD will also relocate and re-provision the existing IT application systems and facilities to the new CSD HQ as mentioned in paragraphs 4(a), (d) and (f) above.

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[5] As approved by FC in December 2020, a departmental data centre will be accommodated in the new CSD HQ Building in Chai Wan.

Benefits

7.   The proposal will bring about the following benefits –

    (a) Improved network services

There will be a more stable, reliable and scalable network infrastructure in the new CSD HQ, as well as a Wide Area Network connecting the new CSD HQ and all the CSD correctional institutions and offices. The upgraded infrastructure will better support the application of up-to-date solutions, such as video conferencing and real-time CCTV signal streaming from correctional institutions for improving the communication between CSD HQ and the correctional institutions and offices.

    (b) Enhanced data centre services and IT security

The new and enhanced data centre to be established in the new CSD HQ will be a satellite site of the Government Cloud Infrastructure Services ("GCIS")[6]. This enables the use of agile development tools to cope with the rapid development of "Smart Prison" projects of CSD, as well as systems reliability, expansion capacity and better IT security protection.

    (c) Enhanced MMCS II, JCS and e-Ordering Portal

The upgraded MMCS II, JCS and e-Ordering Portal will enhance the operational efficiency of Correctional Services Industries ("CSI") business through, amongst others, adoption of the data storage government cloud services.

In addition, the new warehouse management subsystem under MMCS II developed for the central store of the Industries Unit will be equipped with functions including product expiry tracking and space allocation suggestion, which help reduce the time required to locate the goods and avoid human error.

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[6] GCIS is the new generation government cloud services, launched in September 2020. Leveraging on modern cloud technologies, GCIS provides a secure, reliable and scalable IT infrastructure equipped with agile application development tools, facilitating bureaux and departments in agile development and delivery of digital government services.

Under the new and upgraded e-Ordering Portal, in addition to government B/Ds under the current arrangement, external parties including the Hospital Authority and contractors of works departments will also be able to place orders of CSI products through an online portal (instead of the current means of e-mail and fax). Customer support will also be enhanced by a new order tracking sub-system with chat-bot function.

(d) Pharmacy Inventory and Warehouse Management System

The proposed Pharmacy Inventory and Warehouse Management System, which supports the Centralised Pharmacy, can help CSD –

- Centralise and streamline order fulfilment, return of drugs and medical consumables recalled by the Department of Health (if any);
- Save resources for quarterly stock taking and inventory checking;
- Reduce the wastage of expired drugs as chemical waste and handling time;
- Better manage drugs and delivery schedule, and relieve staff from repetitive daily routine;
- Achieve economies of scale on drug ordering;
- Improve traceability of prescription records, order and inventory entries; and
- Streamline coordination between the new CSD HQ and the correctional institutions.

(e) Ensure system extensibility of iCRMS

iCRMS is the mission critical system supporting CSD's daily operation and the platform for integration with "Smart Prison" systems. With the custodial and rehabilitation records of persons in custody ("PICs") consolidated in one single platform, iCRMS would provide a holistic view of PICs' information to facilitate operational planning, provision of rehabilitation services and assessment of the risks and needs of PICs. The relocation of iCRMS to the data centre at the new CSD HQ with upgraded facilities and larger space will ensure system extension capability

as well.

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

8.	The proposal would involve an estimated non-recurrent expenditure of $213,693,000 over a four-year period from 2022-23 to 2025-26. A detailed breakdown is at **Enclosure 1**.

Other Non-recurrent Expenditure

9.	The implementation of the proposal will require a project team for project management, procurement of hardware, software and services, system analysis and design, site preparation, user acceptance tests and implementation support, etc. This will entail non-recurrent staff cost of $98,954,000.

Recurrent Expenditure

10.	The proposal is estimated to incur an annual recurrent expenditure of $28,618,000 from 2026-27 onwards. A breakdown is at **Enclosure 2**. After offsetting the realisable savings of $15,506,000 per annum as detailed in paragraph 12(a) below, the proposal will require a net recurrent cost of $13,112,000 per annum from 2026-27 onwards.

11.	Besides, system administration, operations and support will involve an additional annual staff cost of $21,408,000 from 2026-27 onwards.

Savings

12.	It is estimated that the proposal will enable CSD to save expenditure for maintaining the existing IT infrastructure and ensuring continued smooth operation of the IT systems. The proposal is expected to bring about annual savings of $18,276,000 from 2026-27 onwards, comprising –

(a)	Annual realisable savings of $15,506,000

The savings in the maintenance cost for the existing systems and

equipment, and communication network will be $15,320,000. Moreover, the savings in drug cost will be $186,000, which is around 27% of the seldom used drug arising from economies of scale in drug ordering.

(b) Annual notional savings of $2,770,000

These represent fragmented staff cost savings from productivity gain as a result of more efficient operations as well as reduced demand for IT support and maintenance as a result of the new systems. The notional savings cannot be realised by deletion of posts given that they spread over various application systems, but will be deployed to cover other minor enhancements that may arise in future.

IMPLEMENTATION PLAN

13. Subject to Members' views on the proposal, we plan to seek funding approval from the FC in the second quarter of 2022 so that procurement may begin in 2022. CSD plans to progressively implement the proposal starting from 2022-23 and expects that all implementation work will be completed by November 2025. A detailed implementation plan is at **Enclosure 3**.

ADVICE SOUGHT

14. Members' views are invited on the above proposal and our plan to seek funding approval from FC.

Non-recurrent Expenditure for
Relocation of Information Technology Systems to the New Correctional
Services Department Headquarters and Related System Enhancement

	2022-23 ($'000)	2023-24 ($'000)	2024-25 ($'000)	2025-26 ($'000)	Total ($'000)
(a) Hardware	-	3,530	38,651	1,580	43,761
(b) Software	2,608	712	16,828	185	20,333
(c) Communication Network	-	-	17,954	23,992	41,946
(d) Cloud Services	-	182	3,078	-	3,260
(e) Implementation Services	801	20,485	30,976	8,039	60,301
(f) Contract Staff	6,288	6,747	8,723	2,907	24,665
(g) Contingency	970	3,166	11,621	3,670	19,427
Total	**10,667**	**34,822**	**127,831**	**40,373**	**213,693**

Notes:

Item (a): the estimated expenditure of $43,761,000 is for acquisition of computer hardware, including servers, storage devices and system backup equipment.

Item (b): the estimated expenditure of $20,333,000 is for acquisition of computer software, including operating systems, application server software and virtualisation software.

Item (c): the estimated expenditure of $41,946,000 is for acquisition of network equipment and services, including routers, switches, security appliances and installation of communication lines for the computer network.

Item (d): the estimated expenditure of $3,260,000 is for implementation services of Cloud platform installation and configuration under the Government Cloud Infrastructure Services.

Item (e): the estimated expenditure of $60,301,000 is for hiring of services from external

service providers to implement the project, including system analysis and design, technical consultancy, security risk assessment and audit, system development, installation, configuration and nursing.

Item (f): the estimated expenditure of $24,665,000 is for engagement of services of contract staff to supplement the in-house project management team to provide support in project planning, monitoring and conducting system acceptance tests.

Item (g): the estimated expenditure of $19,427,000 represents a 10% contingency on the costs items set out in items (a) to (f) above.

Recurrent Expenditure for
Relocation of Information Technology Systems to the New Correctional
Services Department Headquarters and Related System Enhancement

	2026-27 and onwards ($'000)
(a) Hardware and software maintenance	6,474
(b) Communication network	13,383
(c) Cloud services	1,877
(d) System maintenance	4,081
(e) Contract staff	2,803
Total	**28,618**

Notes:

Item (a): the estimated annual expenditure of $6,474,000 is for provision of hardware and software maintenance, and for software license fee to support the enhanced information technology infrastructure and systems.

Item (b): the estimated annual expenditure of $13,383,000 is for provision of network equipment maintenance, and for rental of communication lines for the computer network.

Item (c): the estimated annual expenditure of $1,877,000 is for Cloud services fee under the Government Cloud Infrastructure Services.

Item (d): the estimated annual expenditure of $4,081,000 is for provision of system maintenance by hiring of services from external service providers.

Item (e): the estimated annual expenditure of $2,803,000 is for engagement of services of contract staff to provide support in system maintenance of new and enhanced systems and administrative works.

Implementation Plan for
Relocation of Information Technology Systems to the New Correctional Services Department Headquarters and Related System Enhancement

	Activity	Target Completion Date
I.	**Systems Relocation**	
	(a) Procurement – services	December 2022
	(b) Network and system design	June 2023
	(c) Procurement – hardware and software	June 2024
	(d) Installation and system migration	August 2025
	(e) Security risk assessment and audit	October 2025
	(f) Systems live run	November 2025
II.	**Establishment of Network Infrastructure**[*]	
	(a) Procurement – services	June 2022
	(b) Network and system design	November 2022
	(c) Procurement – hardware and software	October 2023
	(d) Installation and system migration	November 2024
	(e) Security risk assessment and audit	November 2024
	(f) Systems live run	December 2024
III.	**Establishment of Data Centre**[*]	
	(a) Procurement – services	May 2022
	(b) Network and system design	August 2022
	(c) Procurement – hardware and software	August 2023
	(d) Installation and system migration	July 2024
	(e) Systems live run	August 2024

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[*] Activities II and III, i.e. the establishment of Network Infrastructure and Data Centre respectively, are critical milestones and pre-requisites for other Activities and the subsequent office relocation and IT systems relocation.   Before that, time should be allowed for tendering of services and equipment.

IV. **Re-development of MMCS II, JCS and e-Ordering Portal**

 (a) Procurement October 2022

 (b) System analysis and design February 2023

 (c) System development and installation October 2023

 (d) Data conversion October 2023

 (e) Security risk assessment and audit November 2023

 (f) User acceptance February 2024

 (g) Systems live run March 2024

V. **Setting up of Pharmacy Inventory and Warehouse Management System**

 (a) Procurement November 2023

 (b) System analysis and design February 2024

 (c) System development and installation July 2024

 (d) Security risk assessment and audit September 2024

 (e) User acceptance October 2024

 (f) Data conversion October 2024

 (g) Systems live run December 2024

VI. **iCRMS Relocation**

 (a) Procurement – services September 2023

 (b) Network and system design January 2024

 (c) Procurement – hardware and software January 2025

 (d) Installation and system migration April 2025

 (e) Security risk assessment and audit May 2025

 (f) User acceptance July 2025

 (g) Data conversion August 2025

 (h) System integration October 2025

 (i) Systems live run November 2025

Development of the Central Control Centre System and Geographic Information System at the new Correctional Services Department Headquarters

PURPOSE

This paper seeks Members' support for the proposed development of a new Correctional Services Department Central Control Centre ("CSDCCC") System and Geographic Information System ("GIS") at the new CSD Headquarters ("HQ") in Chai Wan.

JUSTIFICATIONS

2. CSDCCC is CSD's monitoring and support centre for responding to serious emergencies. It will be activated when serious emergencies occurring at correctional institution(s) are escalated to departmental level[1]. When activated, relevant officers[2] will gather at CSDCCC and work in collaboration with respective region(s) and correctional institution(s) with an aim to providing effective, efficient and speedy response and arranging mobilisation of resources to handle the emergencies, so as to restore institutional safety and stability as soon as possible. The existing CSDCCC is located at CSD's Staff Training Institute ("STI") in Stanley. It was not purpose-built, but was renovated from the existing facilities of STI in 2008. The limited capacity of the existing CSDCCC at STI and its obsolete facilities have posed limitations to the response capabilities in meeting the ever increasing demand for enhanced effectiveness and efficiency in action-planning and decision-making for handling emergency situations.

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[1] CSD adopts a graded response approach (i.e. from institutional level to regional level and eventually to departmental level) to achieve effective and efficient mobilisation of resources across the Department for better preparedness for emergency.

[2] Relevant officers include the Assistant Commissioner of Correctional Services (Operations) as the Commander of CSDCCC, and representatives from relevant sections of the Department.

Challenges and Limitations

3.　　CSD has been facing the following challenges and limitations with the existing CSDCCC at STI over the years –

(a) Physical constraints

Location-wise, the existing CSDCCC at STI, which is far away from CSD HQ in Wan Chai, is not a favourable location for handling emergencies. The travelling time required [3] would cause unnecessary delay in response and decision making. It is not conducive to the effective and efficient handling of serious emergency situations, take hostage-taking situation for example.

Capacity-wise, the existing CSDCCC was not purpose-built and only has limited capacity for further expansion. The aged premises also pose considerable constraints to the upgrading of systems installed therein to meet the development needs of CSD in the long run.

(b) Obsolete facilities hindering effective communication

At the existing CSDCCC, the Commander and other relevant officers can only receive information from correctional institutions and parties concerned through conventional channels, such as via telephone and facsimile. Due to the lack of information platforms underpinned by advanced technologies (such as GIS) as well as modern communication technologies, it is difficult to ensure prompt and precise message flow between CSDCCC and the correctional institution(s) and parties concerned. Besides, it hinders the provision of real-time information of the emergency situation and the coordination of information from various sources. All these are not conducive to CSDCCC's effective and efficient handling of serious emergency situations and decision making. Also, there is limitation in the expandability of facilities at the existing CSDCCC to support the use of an electronic map-based presentation platform to tie in with various "Smart Prison" projects developed by CSD, which can integrate useful instant data collected from various systems, such as Closed Circuit Television ("CCTV") Surveillance

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[3]　It normally takes around 25 to 35 minutes to travel from Wan Chai to Stanley. The travelling time will be lengthened during peak hours or unforeseeable traffic congestions.

System, Electric Locks Security System, Movement and Location Monitoring System, to facilitate a high visibility of the on-scene situation.

4.   A new CSDCCC will be accommodated at the new CSD HQ[4] as part of the funding proposal approved by the Finance Committee ("FC") of the Legislative Council in December 2020. The second Information Systems Strategy Study[5] ("ISSS") of CSD, which was completed in January 2021, also recommended that the new CSDCCC at the new CSD HQ should be equipped with GIS platform for visualising operational information and integrated dashboard for displaying big-data of correctional institutions, so as to enhance the monitoring and handling of emergency situations in a holistic view, as well as to facilitate improved and timely communications with relevant correctional institutions, regions and relevant government departments for strategical mobilisation of resources and reinforcement in case of emergency situations.

The Proposal

5.   CSD's proposal to develop and set up the new CSDCCC comprise the following –

      (a)   <u>Setting up of an advanced communication and recording system, including</u>

- Video management system to receive, manage and stream real-time CCTV videos from correctional institutions;
- Video wall with associated equipment to display various information (e.g. CCTV video) of all correctional institutions;
- Voice logging system and video conferencing system for enhanced communications with correctional institutions;
- E-logger to record and integrate logs of events for review, investigation and service improvement in the aftermath of emergency situations; and

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[4]   Based on the current construction work schedule, the new CSD HQ would be completed in the second quarter of 2024 the earliest.

[5]   To cope with the development of correctional services, CSD conducted the first ISSS in 2013. In 2019, CSD launched the second ISSS to evaluate the progress of projects proposed in the first ISSS and devise a technological development blueprint for "Smart Prison" to roll out innovation and technology projects in the short, medium and long term according to priorities.

- Customised integrated dashboard to integrate, display and share operational and administrative big-data of correctional institutions.

(b) <u>Development of GIS platform, including</u>

- Customised GIS platform to provide different layers of information, such as location of correctional institutions/facilities and key government/public facilities (courts and hospitals, etc.) at user's selection for a territory-wide overview of the situation, and display key operational information such as persons in custody ("PICs")' particulars and utilisation of correctional institutions; and

- Integrated Monitoring and Management System ("IMMS") to allow switching between different GIS / Building Information Modeling ("BIM") [6] platforms among correctional institutions for visualising the information of CSD's different existing operational systems (e.g. GPS Monitoring System of Departmental Vehicles, CCTV Surveillance System, Electric Locks Security System, Movement and Location Monitoring System, Video Analytic Monitoring System, etc.[7]) over a geographical layout.

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[6] The BIM platform enables the viewing of a building's three-dimensional model (including interior and exterior) in the IMMS, and users may inspect the building's internal setting, layout of works of building services systems (including ventilation, firefighting, water supply and electricity systems) and their real-time status. Should building services systems experience irregularity, users are immediately notified for follow-up action. If riots break out in correctional institutions, CSD may conduct strategic planning with the help of the IMMS, which enables access to information of the operational status of different building services systems, and contain the situation at the scene through controlling these systems (such as cutting off water and electricity supply).

[7] A brief account of the functions and benefits of the named systems is as follows –
   (a) **GPS Monitoring System of Departmental Vehicles** displays the real-time location, status and CCTV videos of all departmental vehicles, which enables remote surveillance, monitoring of real-time traffic conditions and intelligence route planning of the existing fleet;
   (b) **CCTV Surveillance System** monitors the behaviour of individual PICs, which supports the operation of correctional institutions and enhance their security;
   (c) **Electric Locks Security System** is an electro-mechanical locking system operating in conjunction with CCTV cameras, facial recognition function, intercoms and call buttons for replacing the old system of manually-operated locks, so as to expedite emergency support, strengthen institutional security and enhance management efficiency of correctional institutions;
   (d) **Movement and Location Monitoring System** operates in conjunction with "smart wristbands" worn by PICs, which facilitates the tracking of real-time locations of PICs and the detection of any unauthorised movement; and
   (e) **Video Analytic Monitoring System** is equipped with video analytics technology, which helps identify various abnormal behaviour of PICs within correctional institutions, such as fighting, hanging and aggregation.

Benefits

6.   The proposal is expected to bring about the following benefits –

(a) Enhancing communication capability

The newly designed CSDCCC will be equipped with various systems (such as Video Management System to receive, manage and stream real-time CCTV videos from different correctional institutions, and the Customised Integrated Dashboard to integrate, display and share operational and administrative big-data of correctional institutions) that allows timely synchronisation of messages across departmental, regional and institutional levels, and facilitates CSDCCC's instant and accurate analysis of the most updated data (such as the distribution of reinforcement staff, rioters, hostage-takers, gang affiliations, casualties, etc.) before making decisions, in particular handling emergency situations.

(b) Systematic collection and visualisation of operational data and enhancing CSD's long-term strategic planning by GIS platform

The GIS platform is designed to support data integration from multiple data sources (e.g. CCTV Surveillance System, Electric Locks Security System, and Movement and Location Monitoring System as mentioned in paragraph 5(b) above).   It also serves as a centralised platform for the visualisation of instant data collected from different operational and information systems over a reader-friendly geographical layout.   The platform facilitates CSD's better communication with related institution(s) and parties as well as other government departments for the mobilisation of resources and reinforcement in the event of an incident or emergency situation.

Moreover, CSD can make use of the new GIS platform to systematically collect useful data, which facilitates the subsequent big-data analysis for enhancing CSD's capability of devising long-term strategic plans.

(c) Enhancing emergency response capability and systems expansion flexibility

A new CSDCCC at the new CSD HQ in Chai Wan, at which CSD's senior management will base, provides a centrally located and purpose-built venue with necessary facilities and larger workplace to help improve the operational efficiency in handling the emergency. The development of a new CSDCCC will also provide flexibility for system expansion by virtue of the upgraded facilities and larger space to cater for integration of additional systems in future.

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

7.   The estimated total non-recurrent cost for the proposed development of CSDCCC system and GIS at the new CSD HQ in Chai Wan is $64,726,000. The detailed breakdown is as follows –

		$'000
(a)	Hardware, software and works for CSDCCC	28,220[8]
(b)	Hardware, software and works for GIS	23,150[9]
(c)	The Electrical and Mechanical Services Trading Fund ("EMSTF") project management services	8,219[10]

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[8]   The estimated expenditure of $28,220,000 is for (i) the acquisition of CSDCCC hardware and software which include operational workstations with customised dashboard, video wall sub-system, event logging sub-system, video conferencing sub-system, institutional CCTV management sub-system, other associated equipment; and (ii) minor building services works, etc.

[9]   The estimated expenditure of $23,150,000 is for (i) the provision of GIS which includes the provision of GIS platform with all necessary licences, customised dashboard, integration with other CSD electronic systems, server and other associated equipment, etc.; and (ii) minor building services works.

[10]   The estimated expenditure of $8,219,000 is for meeting the charges of EMSTF project management services which include preparation of tender documents, tender evaluation, approval of contractors' design submissions, monitoring of contractors' installation, acceptance tests, and co-ordination with various government departments and contractors.

(d) Contingencies		5,137[11]
	Total	**64,726**

8.   The estimated cash flow requirement is as follows –

Financial Year	**$'000**
2022 – 23	1,284
2023 – 24	1,284
2024 – 25	37,295
2025 – 26	24,863
Total	**64,726**

Recurrent Expenditure

9.   We estimate that the annual recurrent cost arising from the proposal, including expenses on corrective maintenance and equipment spare parts, will be about $6,080,000 from 2026-27 onwards.

IMPLEMENTATION PLAN

10.   Subject to Members' views on the proposal, we plan to seek funding approval from FC in the second quarter of 2022 so that tendering may begin as soon as in 2023.   The implementation schedule is planned as follows –

Activity	**Target Completion Date**
(a) Examination, planning and design of system works	September 2022
(b) Tender preparation	February 2023
(c) Tendering and award of contract	June 2023
(d) Approval of system design	September 2023
(e) Equipment manufacturing, delivery and site work preparation	December 2023

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[11] The estimated contingency of $5,137,000 represents about 10% of the expenditure under items (a) and (b) in paragraph 7 above.

	Activity	**Target Completion Date**
(f)	Installation and implementation works	December 2024
(g)	Acceptance test and training	January 2025
(h)	System commissioning	February 2025

11.   The above schedule is drawn up with reference to previous experience and the advice of EMSTF.   The project will be implemented in parallel with the construction work schedule and office relocation plan of the new CSD HQ, which is planned for completion within 2024.   The works of setting up the new CSDCCC at the new CSD HQ and development of GIS will be taken forward concurrently to expedite the progress of the project.

ADVICE SOUGHT

12.   Members' views are invited on the above proposal and our plan to seek funding approval from FC.

Full Implementation of "Persons-in-custody Integrated Intelligent Communication System" in 19 Correctional Institutions/Facilities

PURPOSE

      This paper seeks Members' support for the proposal to implement the Persons-in-custody ("PICs") Integrated Intelligent Communication System ("IICS") in 19 correctional institutions/facilities[1].

JUSTIFICATIONS

Challenges and Limitations

2.   Under the current policy of the Correctional Services Department ("CSD"), the institutional management may approve a PIC to make local or overseas phone calls if it is satisfied that the PIC has a genuine need for a timely communication with his/her friends and relatives on a case-by-case basis. Besides, if a PIC has not received any visit from and has made no phone call to his/her spouse, children, parents or siblings within a month, he/she will be allowed to make a 10-minute phone call to his/her overseas spouses, children, parents or siblings. Upon approval, the institutional management will deploy a designated staff to (i) escort the PIC to the designated location to retrieve a phone card from his/her own property (for overseas call[2]), (ii) dial the destination number, (iii) once a successful phone call is connected, check to ensure that the PIC is making a phone call to the person(s) as approved by the institutional management,

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[1]   The 19 correctional institutions/facilities include (1) Cape Collinson Correctional Institution, (2) Hei Ling Chau Correctional Institution, (3) Hei Ling Chau Addiction Treatment Centre, (4) Lai Chi Kok Reception Centre, (5) Lai King Correctional Institution, (6) Lai Sun Correctional Institution, (7) Nei Kwu Correctional Institution, (8) Pak Sha Wan Correctional Institution, (9) Pik Uk Correctional Institution, (10) Pik Uk Prison, (11) Stanley Prison, (12) Siu Lam Psychiatric Centre, (13) Shek Pik Prison, (14) Sha Tsui Correctional Institution, (15) Tong Fuk Correctional Institution, (16) Tai Lam Correctional Institution, (17) Tai Lam Centre for Women, (18) Tung Tau Correctional Institution; and (19) Staff Training Institute (for the purposes of staff training and system familiarisation).

[2]   The costs of making overseas phone calls shall be borne by the PICs concerned.

(iv) monitor the phone conversation using the parallel extension when the PIC begins the phone conversation, (v) manually ensure the phone conversation does not exceed the allowed duration, (vi) maintain a record of the phone call, and (vii) record the remaining value in the phone card (for overseas call[2]) upon the completion of phone call.   The staff will terminate the call if the phone conversation deviates from the declared purpose of the call, or is considered in any way that may pose a threat to any individual's personal safety or to the security, good order and discipline of the institution.

3.   Although the above-mentioned mode of operation by one-to-one direct monitoring on each phone call is labour-intensive and time consuming, it is necessary for ensuring a safe and secure custodial environment and preventing illicit activities.   In recent years, there has been an increasing demand for phone communication by PICs, in particular from those of overseas nationalities[3] whose relatives and friends are usually not residing in Hong Kong.   Nevertheless, under the existing mode of operation, CSD considers that there is no room to relax the number of phone calls made by each eligible PIC given the limited manpower which has already been overstretched.

The Development of "Smart Prison" and IICS

4.   CSD is committed to providing a secure, safe, humane, decent and healthy environment for PICs.   CSD has also been proactively developing "Smart Prison" through the implementation of innovation and technology strategies to modernise, informatise and humanise the management mode and process innovation of correctional facilities.

5.   During the development of the "Smart Prison", various technology projects have been rolled out in different correctional institutions under four major categories, namely "Security and Monitoring System", "Operation and Management System", "PICs Self-Management System" and "Staff Capacity Enhancement System".   IICS, being one of projects under the category of "PICs Self-Management System", is a tailor-

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[3]   As at 31 December 2021, there were 1 326 PICs of overseas nationalities, i.e. around 17% of overall penal population.

designed self-service telephone communication system operating in conjunction with telephone kiosks, display monitors, voice recognition technology and content analysis function.   With IICS, PICs may contact designated relatives and friends in a self-service manner at designated locations in the correctional institutions after obtaining approval from the institutional management.   Correctional officers will no longer be required to escort PICs to designated locations to make phone calls.

The Proposal

6. CSD has put IICS into pilot run in the Lo Wu Correctional Institution and Tai Tam Gap Correctional Institution in 2020 and 2021 respectively.   Under the pilot run, the number of escorts by correctional officers and the time required for handling each phone call at the two institutions concerned have been reduced.   In view of the satisfactory results of the pilot run, CSD proposes to extend IICS to other 19 correctional institutions/facilities.   CSD suggests that IICS be installed in most of the workshops, dayrooms, dining halls and other designated areas[4] in the 19 correctional institutions/facilities.   The installation works will be carried out by the Electrical and Mechanical Services Trading Fund ("EMSTF") under the Electrical and Mechanical Services Department, which will involve installation of about 350 telephone kiosks with display monitors, server and uninterrupted power supply, etc.

Benefits

7. The proposal is expected to bring about the following benefits –

(a) Enhancing operational efficiency

With the full implementation of IICS, the correctional officers will no longer be required to escort the PICs to designated locations to make phone calls one-by-one while they can monitor a number of phone calls simultaneously.   Besides, correctional officers will be relieved from associated administrative work. The institutional management can flexibly deploy spare

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[4]   Such as centre hospital, reception office and office of the Rehabilitation Unit of the institutions.

manpower to carry out other duties relating to the rehabilitation of PICs.

(b) Strengthening institutional security

IICS can strengthen institutional security through the use of voice recognition technology and speech analytic technology. The voice recognition technology will assist correctional officers to verify PICs' identities and to detect whether there is any third-party joining the conversation without authorisation. The keyword spotting function can help monitor the phone conversation automatically and detect specific keywords such as "escape", "suicide", etc. Early detection of such content will facilitate correctional officers' timely intervention and handling of potential untoward incidents. Moreover, correctional officers will no longer be required to escort PICs to a designated location to make phone calls, thereby minimising the risk of potential untoward incidents such as escape.

(c) Enhancing the rehabilitation of PICs

After the full implementation of IICS, most of the workshops, dayrooms, dining halls and other designated areas will be installed with telephone kiosks, which will allow PICs to contact their designated relatives and friends at more frequent intervals as approved. With enhanced operational efficiency and institutional security, there will be room for relaxing the number of phone calls that can be made by eligible PICs within a prescribed period. This allows PICs to gain more positive support from their relatives and friends. Besides, IICS helps train the PICs' technological capacity, and the adoption of a self-service mode in making phone calls helps raise their self-management capabilities. All of the above are conducive to PICs' future re-integration into society.

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

8.   The estimated total non-recurrent cost for the implementation of IICS in the 19 correctional institutions/facilities is $124,500,000.   The detailed breakdown is as follows –

		$'000
(a)	Implementation of IICS in the 19 correctional institutions/facilities	98,800[5]
(b)	EMSTF project management services	15,810[6]
(c)	Contingencies	9,890[7]
	Total	**124,500**

9.   The estimated cash flow requirement is as follows –

Financial Year	$'000
2022 – 23	3,160
2023 – 24	3,160
2024 – 25	24,900
2025 – 26	24,900
2026 – 27	24,900
2027 – 28	43,480
Total	**124,500**

Recurrent Expenditure

10.   We estimate that the annual recurrent cost arising from the

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[5]   The estimated expenditure of $98,800,000 is for implementation of IICS in the 19 correctional institutions/facilities, which includes the installation of telephone kiosks, operation workstations, networking equipment, servers with associated software and licence (equipped with voice recognition function), uninterrupted power supply, etc. in each correctional institution/facility.

[6]   The estimated expenditure of $15,810,000 is for meeting the charges of EMSTF project management services which include preparation of tender documents, tender evaluation, approval of contractors' design submissions, monitoring of contractors' installation, acceptance tests, and co-ordination with various government departments and contractors.

[7]   The estimated contingency of $9,890,000 represents about 10% of the expenditure under item (a) in paragraph 8 above.

proposal, including expenses on corrective maintenance and equipment spare parts, will be about $12,450,000 from 2028-29 onwards.

Cost Savings

11.　　Upon full implementation of the IICS, as mentioned in paragraph 7(a) above, designated staff in various correctional institutions will no longer be required to escort PICs to designated locations to make phone calls one by one, and they can monitor a number of telephone conversations simultaneously.　It is estimated that there will be an annual notional savings in staff costs of around $1,747,800.　The notional savings in staff costs cannot be realised by deletion of posts as the savings is contributed by various staff performing different duties, but they will be deployed to cover other duties meeting operational needs for the betterment of the rehabilitation of PICs.

IMPLEMENTATION PLAN

12.　　Subject to Members' views on the proposal, we plan to seek funding approval from the Finance Committee in the second quarter of 2022 so that tendering may begin in 2024.　The implementation timetable is planned as follows –

Activity	Target Completion Date
(a) Examination, planning and design of systems/builder/building services works	February 2023
(b) Tender preparation	July 2023
(c) Tendering and award of contract	January 2024
(d) Approval of system design	May 2024
(e) Equipment manufacturing, delivery and site work preparation	October 2024

Activity	Target Completion Date
(f) Installation and building services works[8]	October 2027
(g) Acceptance test and training	January 2028
(h) System commissioning	October 2025 - April 2028

13.   The above schedule has been drawn up with reference to previous experience and the advice of EMSTF.   As the proposed project will cover a total of 19 correctional institutions/facilities, with each institution remaining in normal operation during the period, the whole project is expected to take around six years for completion starting from 2025.   To expedite the progress of the project, installation works will be carried out in phases, while works in a few nearby institutions/facilities will be taken forward concurrently.

ADVICE SOUGHT

14.   Members' views are invited on the above proposal and our plan to seek funding approval from the Finance Committee.

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[8]   Subject to the actual situation of each institution/facility, installation of the IICS will be executed in phases between October 2024 and October 2027.