

**For discussion on  
6 July 2021**

## **Legislative Council Panel on Security**

### **Smart Customs**

#### **Purpose**

This paper briefs Members on the Customs and Excise Department (C&ED)'s implementation of Smart Boundary Management as well as Smart Investigation and Case Management, which form part of its "Smart Customs Blueprint", to enhance customs clearance effectiveness, fortify law enforcement capabilities and upgrade services to the public.

#### **Smart Customs Blueprint**

2. In her 2018 and 2020 Policy Addresses, the Chief Executive put forward the application of innovation and technology to enhance the capabilities of law enforcement agencies. In this connection, C&ED promulgated the "Smart Customs Blueprint" (at **Annex**) in 2019 to steer the development of Smart Customs on various fronts of C&ED's work.

3. The "Smart Customs Blueprint" covers three overarching directives, namely the extension of customs role, expansion of the service regime, and enhancement of customs functions. In addition to maintaining its traditional role as "law enforcer and service provider", C&ED will play a more diversified role by strengthening its role as "trade facilitator" and becoming an "economic development promoter". C&ED's service regime will also be extended from conventional boundary and inland enforcement as well as provision of service for the domestic economy to making a contribution to the regional and global economic development, in the context of the Guangdong-Hong Kong-Macao Greater

Bay Area development and the Belt and Road Initiative. Covering all core aspects of the C&ED's business, the ultimate goal of the "Smart Customs Blueprint" is to build up an all-in-one Smart Customs, through using innovative technology in the formulation, development and deployment of various systems, equipment, devices and tools, as well as enabling data sharing within the department.

4. The following four key pillars of the Smart Customs Blueprint will further enhance C&ED's functions through the application of innovative technology -

- (a) Smart Boundary Management;
- (b) Smart Investigation and Case Management;
- (c) Smart Trade Facilitation; and
- (d) Smart Business Development.

The first two pillars underpin C&ED's role in customs clearance and law enforcement, and are instrumental to safeguarding the security and public safety of Hong Kong. Their details are set out in the ensuing paragraphs.

### **Smart Boundary Management**

5. Smart Boundary Management aims at incorporating more smart elements into customs clearance to facilitate speedy clearance of people and goods moving across boundaries, and at the same time enable precise and targeted tackling of customs-related offences. Through wider and more pervasive use of advanced equipment, sophisticated analytic systems and other innovative technologies, C&ED's service and clearance efficiency, as well as its enforcement capability against smuggling and other offences, will be enhanced.

### ***Advanced Equipment***

6. C&ED has all along been seeking to deploy more advanced equipment at various boundary control points to elevate customs clearance efficiency and detection capabilities. In recent years, advanced examination devices, such as Gantry Type X-ray Vehicle Inspection Systems, Mobile X-Ray Vehicle Scanning Systems, Handheld X-Ray

Imagers, Raman Spectrometers, etc., have been introduced and deployed to assist in law enforcement.

7. With the advent of artificial intelligence (AI), C&ED has been introducing more advanced equipment with automated contraband detection functions. Equipment having been or being newly procured includes auto-detection devices for existing X-ray checkers with AI functions to be embedded, and computed tomography (CT) scanners. Auto-detection devices for existing X-ray checkers assist in screening for suspicious objects through analysis of the X-ray images of suspicious items against X-ray images in the database, thus enabling speedy automatic recognition of contrabands, such as firearms and weapons, cigarettes and telecommunication equipment. At the same time, C&ED is working to procure CT scanners capable of producing high resolution 3-D images of the scanned subject with more refined information and automated contraband detection function. These devices would boost both the efficiency and precision of contraband detection, and facilitate more speedy clearance of passengers and goods at boundary control points.

8. The first batch of equipment (i.e. 38 sets of auto-detection devices for X-ray checkers) have already been put into operation. The second batch involving 6 CT scanners and about 40 sets of auto-detection devices for X-ray checkers will be delivered in around early 2022.

### *Sophisticated Analytic Systems*

9. C&ED also makes use of sophisticated analytic systems to aid risk profiling as well as passenger, goods and vehicle clearance at the boundary. A number of systems have already been introduced by phases since 2020 –

- (a) Platform for X-ray Image Evaluation: enabling real-time comparison of vehicles' X-ray images with the X-ray images database to raise its inspection effectiveness;
- (b) Vehicle Inspection and Strategic Analysis System: providing comprehensive data support, digitised vehicle search report, as well as instant risk profiling capability, to facilitate vehicle clearance on cross-boundary private cars;
- (c) Smart Liquor Duty Assessment: enabling speedy duty value assessment by instant matching of liquor labels against the

database, thus achieving greater efficiency in duty valuation on liquor and shortening waiting time of passengers; and

- (d) Cargo Big Data Pilot System: facilitating the identification of suspicious cargo and vehicles by applying big data analytics and AI, thus augmenting C&ED's risk management capability in analysing colossal amounts of cargo data. The system will also minimise the inspection of legitimate cargo and boost customs clearance efficiency.

### ***Upgrading Public Services***

10. Smart initiatives will also be rolled out by phases in the service provided to travellers and the trade at and beyond control points. The Air Cargo Clearance Queuing System, which enables cargo agents of the logistic sector to queue up for collection of cargo by using mobile devices, was introduced in 2020. The system allows traders to estimate the time to arrive at cargo terminals and minimise waiting time. As regards facilitation to travellers, an interactive response system which includes robotic assistants at control points and online chatbot at the website of C&ED is now under development to provide instant, accurate and consistent responses to enquiries of the public while allowing C&ED to systematically analyse enquiries and seek improvement to its services. Relevant proof-of-concept (PoC) studies are being conducted, and it is C&ED's plan to put in place the system by 2023.

### **Smart Investigation and Case Management**

11. Smart Investigation and Case Management aims at strengthening C&ED's data sharing, intelligence gathering, investigation, analysis and case management capabilities by introducing various backend smart systems involving AI, big data, etc. The initiative will facilitate C&ED to detect and investigate into customs-related offences more proactively, and ensure the quality of case management. Central to this pillar is the sharing of case data as well as trends and patterns on crimes to assist frontline enforcement officers in C&ED in the process of investigation.

### ***Smart Investigation***

12. With the success in introducing the “Intellectual Property Rights (IPR) Big Data Analytics System” for combating IPR crimes in 2017<sup>1</sup>, C&ED has been working to expand the system to cover other customs-related offences, such as trafficking in dangerous drugs, sale of illicit cigarettes, and illegal import and export of endangered species, with a view to developing the Customs Crime Analytics System (CCAS). CCAS will serve as a smart analytics platform for C&ED to step up its capabilities in intelligence processing, case investigation and crime detection. In gist, it will scrutinise and consolidate voluminous data from disparate sources, including internal computer systems, social media and online news, and apply AI, big data analytics and predictive analytics with a view to unveiling hidden trends, patterns, relations and anomalies on various customs-related offences. In collaboration with the Hong Kong Applied Science and Technology Research Institute Company Limited, C&ED has already commenced a PoC study which is expected to be completed by 2022.

### ***Smart Case Management***

13. Over the years, the number of cases for customs-related offence detected by C&ED has increased, from 18 611 cases in 2015 to 32 946 cases in 2019. The value of seizures involved also increased from \$1.22 billion in 2015 to \$2.29 billion in 2019. In this light, C&ED is developing the Smart Seizure Management System (SSMS) to better rationalise the control and security of seizures during deposit, storage and retrieval stages. The system will provide real-time monitoring of the location of the seizures in the store, and optimise the use of storage spaces through the application of technology, such as radio-frequency identification which could greatly improve the overall store management efficiency. C&ED aims to commence a PoC study in 2021.

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<sup>1</sup> The system operates around the clock to monitor IPR infringing activities on multiple online platforms. The system gathers and compares huge amounts of IPR infringement information on different Internet platforms for cross-analysis which assists C&ED in unveiling the prevailing trends of online counterfeiting and Internet piracy activities. In 2020, the system contributed to more than 40% of online IPR crimes detected.

## **Looking Ahead**

14. Guided by the “Smart Customs Blueprint”, C&ED will continue to further explore different areas in deploying advanced and innovative technologies and rolling out new initiatives, so as to, amongst other objectives set out in paragraph 3 above, further facilitate customs clearance, strengthen its law enforcement capability, and enhance services provided to the public. Smart Customs initiatives will also complement the information exchange, mutual recognition of regulations and mutual assistance in law enforcement with the Mainland authorities, thereby contributing to the deepening development of the Guangdong-Hong Kong-Macao Greater Bay Area and the Belt and Road Initiative.

**Security Bureau**

**Customs and Excise Department**

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# 智慧海關藍圖 Smart Customs Blueprint

