CHAPTER 4

Innovation and Technology Bureau
Innovation and Technology Commission

**Innovation and Technology Commission:
Efforts in promoting internationally accepted
standards and conformity assessment services**

Audit Commission
Hong Kong
31 March 2021

This audit review was carried out under a set of guidelines tabled in the Provisional Legislative Council by the Chairman of the Public Accounts Committee on 11 February 1998. The guidelines were agreed between the Public Accounts Committee and the Director of Audit and accepted by the Government of the Hong Kong Special Administrative Region.

Report No. 76 of the Director of Audit contains 7 Chapters which are available on our website at https://www.aud.gov.hk

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INNOVATION AND TECHNOLOGY COMMISSION: EFFORTS IN PROMOTING INTERNATIONALLY ACCEPTED STANDARDS AND CONFORMITY ASSESSMENT SERVICES

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INNOVATION AND TECHNOLOGY COMMISSION: EFFORTS IN PROMOTING INTERNATIONALLY ACCEPTED STANDARDS AND CONFORMITY ASSESSMENT SERVICES

Executive Summary

1. The Innovation and Technology Commission (ITC) promotes internationally accepted standards and conformity assessment services to underpin technological development and international trade, and the development of the testing and certification (T&C) industry in Hong Kong under its programme area "Quality Support". Standards are consensus of doing things, specifications for products, test methods or materials. Conformity assessment involves a set of processes which demonstrate that specific requirements relating to a product, process, system, person or body are fulfilled. The main types of conformity assessment are testing, inspection and certification. A body that performs conformity assessment services is referred to as a conformity assessment body (CAB). In September 2009, the Government set up the Hong Kong Council for Testing and Certification (HKCTC) to advise it on the overall development strategies of the T&C industry.

2. The work of ITC relating to quality support is carried out by the Hong Kong Accreditation Service (HKAS), the Product Standards Information Bureau (PSIB), the Standards and Calibration Laboratory (SCL) and the Secretariat of HKCTC. In 2019-20, the expenditure on the programme area "Quality Support" was $145.5 million. The Audit Commission (Audit) has recently conducted a review on ITC's efforts in promoting internationally accepted standards and conformity assessment services.

Hong Kong Accreditation Service

3. ***Need to step up efforts to promote accreditation services of HKAS.*** HKAS sets a benchmark on the net increase in accredited organisations each year. For three of the five years from 2015-16 to 2019-20, the benchmark set had not been met. As

at 31 December 2020, for some programmes of the three accreditation schemes of HKAS, the number of organisations accredited was not more than two. Such programmes comprised: (a) 3 (17%) of the 18 programmes under the Hong Kong Laboratory Accreditation Scheme (HOKLAS); (b) 4 (44%) of the 9 programmes under the Hong Kong Certification Body Accreditation Scheme; and (c) 2 (50%) of the 4 programmes under the Hong Kong Inspection Body Accreditation Scheme (paras. 2.6 and 2.8).

4.   ***Need to encourage bureaux/departments to use services of HKAS and its accredited organisations.*** According to General Circular No. 16/2016 issued by the Director of Administration in February 2016, government bureaux/departments (B/Ds) were urged to use the accreditation services provided by HKAS and the conformity assessment services provided by organisations accredited by HKAS. Audit noted that in the period from 2016 to January 2021, only two new accreditations were granted to B/Ds. For two B/Ds that terminated their accreditations during the period, HKAS had not recorded the reasons for the terminations and whether follow-up actions had been taken to encourage them to retain the accreditation status (paras. 2.11 and 2.13).

5.   ***Reassessments not conducted in a timely manner.*** HKAS conducts reassessments for each accredited organisation regularly to ensure that the standards required for continued accreditation are maintained. Audit reviewed 20 reassessments conducted by HKAS in the period from 2016 to 2019 and noted that 2 (10%) of the 20 reassessments were delayed for 28 days and 37 days respectively. As at 14 October 2020, there were 40 outstanding reassessments with delays, ranging from 7 to 651 days (93 days on average) (paras. 2.18 to 2.20).

6.   ***Improper use of HKAS symbols and false claims of accreditation status.*** Every accredited organisation is given a unique accreditation symbol. In November 2020, Audit examined the websites of 15 of the 21 accredited organisations under HOKLAS that terminated the accreditations for all or part of their accredited activities in 2019. Audit noted that: (a) 1 (7%) organisation with the accreditations on all accredited activities terminated still claimed that its laboratories were accredited and displayed HKAS symbol; (b) 1 (7%) organisation with the accreditations on some activities terminated still claimed that its laboratories were accredited for these activities; and (c) 2 (13%) organisations with the accreditations on some of their activities terminated did not include a statement indicating which activities were not accredited, contrary to the requirements of HKAS (paras. 2.23 and 2.25).

Product Standards Information Bureau and Standards and Calibration Laboratory

7. ***Low utilisation of Product Standards Resource Centre (PSRC).*** PSRC maintains a repository of standards and standard-related publications for public reference. Audit reviewed the number of visitors to PSRC in the period from 2015 to 2020 (up to September) and noted that the number of visitors to PSRC decreased by 10 (58.8%) from 17 in 2015 to 7 in 2019. There were only 4 visitors to PSRC in 2020 (up to September) amid the outbreak of coronavirus disease (COVID-19) (paras. 3.4 and 3.5).

8. ***Room for improvement in PSIB's inventory management.*** Audit found room for improvement in inventory management for the standards and publications kept in PSRC: (a) PSIB had not maintained inventory records for some inventory items and had not conducted annual inventory checks, contrary to the Stores and Procurement Regulations (SPRs) of the Government; and (b) PSIB had not devised a mechanism to determine which withdrawn/superseded standards had no reference value and should be disposed of. Some standards kept in PSRC were issued a long time ago and had been withdrawn or superseded by an updated version (para. 3.8).

9. ***Room for improvement in performance reporting in Controlling Officer's Report (COR).*** ITC reports in its CORs the performance of PSIB under four targets and five indicators. Audit found that: (a) there was no evidence showing that the reported performance for "Processing of simple enquiries on product standards" and "Processing of complicated enquiries on product standards" for 2015, 2016 and 2017 was based on proper records of actual performance; (b) while PSIB did not receive any complicated enquiries in 2018 and 2019, ITC reported that it took 8 working days for "Processing of complicated enquiries on product standards"; (c) no performance records were kept to substantiate the actual performance for "Issue of quotations for standards" and "Processing of orders for licensed reproduction of standards" reported for the period from 2015 to 2019; and (d) for sales of standards, some performance information on 2 of the 4 performance indicators, namely "Number of orders placed" for 2015 and 2017 to 2019 and "Revenue generated" for 2015, 2017 and 2018 reported in CORs did not tally with PSIB records (paras. 3.10, 3.11 and 3.13).

10. ***Room for improvement in SCL's inventory management.*** SCL operates ten laboratories with various types of equipment, parts and tools. Audit found room for improvement in its inventory management: (a) in 2012, the Government Logistics

Department (GLD) recommended ITC to conduct a comprehensive inventory check for all inventory items kept in the Quality Services Division. As at February 2021, the implementation of GLD's recommendation had not been completed; (b) there was no documentary evidence showing that in the period from 2016 to 2020, ITC had conducted annual inventory checks for the inventory items of SCL, contrary to the requirements of SPRs; and (c) of the 40 inventory items examined by Audit, 17 (42.5%) were not labelled with a reference number and it was not possible to match the physical items to the Inventory Sheet and Distribution Records (GF 272s), and 5 (12.5%) had been transferred from one SCL laboratory to another without updating the Inventory Sheet and Distribution Records to reflect the transfers (para. 3.18).

11. ***Equipment not calibrated in a timely manner.*** According to SCL, after being put into service, equipment must be calibrated according to the planned schedule. Every month, SCL staff generate a calibration list for each laboratory from its computer system to identify equipment items that are due for calibration. According to the calibration list, as at 5 January 2021, 1,141 equipment items required regular calibration. Audit noted that: (a) 381 (33.4%) of the 1,141 equipment items had been overdue for calibration, with an average overdue period of 0.9 year (i.e. 331.8 days); and (b) of the 381 items, 127 (33.3%) had been overdue for more than one year, including 25 (6.6%) which had been overdue for more than 3 years. The longest overdue period was 7.3 years. According to ITC, 245 of the 381 items were backup equipment items or out-of-service equipment items (paras. 3.20 to 3.22).

12. ***Need to shorten the time for collecting equipment from customers for calibration.*** The queuing time for calibration is the time between the acceptance of quotation by the customer and the collection of equipment by SCL for calibration. According to SCL, in general, the queuing time shall not be longer than 15 working days. Of the 7,039 equipment items calibrated in the period from 2015 to 2020, 4,162 (59.1%) had queuing time longer than 15 working days, including 892 (12.7%) which had queuing time longer than 90 working days (averaging 166 working days). The longest queuing time was 827 working days (paras. 3.24 and 3.25).

Support for Hong Kong
Council for Testing and Certification

13. ***Need to improve attendance of some non-official members.*** The Chairman and members of HKCTC comprise practitioners from the T&C sector, business sector, professional organisations (i.e. non-official members) and representatives of

public bodies and government departments (i.e. official members). In the period from 2016 to 2020, while the overall attendance rate of council meetings for each year ranged from 75% to 85%, the attendance rate of non-official members was lower (ranging from 67% to 80%). In the period from 2016 to 2019, in each year, a significant percentage (12% to 35%) of the non-official members did not attend any council meetings or only attended one of the three council meetings held. In 3 of the 4 years in the period, less than half (38% to 47%) of the non-official members attended all the three council meetings held (paras. 4.4 to 4.6).

14.   ***Need to improve declaration of interests in council meetings.*** HKCTC has adopted the one-tier reporting system (i.e. disclosing potential conflicts of interest when they arise) for declaration of interests by members. Under the exhibition programmes of HKCTC, booths were set up at trade shows to promote Hong Kong's T&C services. The rental and production costs of the booths were paid by HKCTC and eligible accredited CABs were invited to apply to use the booths free of charge to reach out to potential users of their services. Audit noted that in the period from 2016 to 2020, 50% to 71% of the non-official council members were associated with CABs in Hong Kong. These CABs were potential participants of the exhibition programmes. However, Audit noted that no declarations of interests had been made by the members concerned when the work plans for the exhibition programmes were discussed and endorsed in council meetings. In the period from 2016-17 to 2019-20, 11% to 50% of the participants of the exhibition programmes were CABs associated with council members (paras. 4.9 to 4.11).

15.   ***Need to issue draft minutes of council meetings in a timely manner.*** Audit examined the draft minutes of the 14 council meetings held in the period from 2016 to 2020 and noted that the Secretariat of HKCTC took 43 to 90 days (averaging 66 days) to issue the draft meeting minutes to members (para. 4.14).

16.   ***Need to step up efforts to promote the teaching kit launched.*** In June 2016, HKCTC launched a teaching kit for senior secondary chemistry teachers to arouse students' interest in testing and to help apprise students of the value of T&C. A survey conducted in 2017 revealed that of the 75 respondents: (a) 51 (68%) had not heard about the teaching kit; (b) 68 (91%) had never used the teaching kit in class or school activities; and (c) 70 (93%) did not know that the teaching kit was available on the One-stop Portal for Learning and Teaching Resources (paras. 4.19 and 4.21).

17.   *Need to enhance attendance of seminars and workshops.*   In the period from 2015 to 2020, HKCTC organised 48 seminars and workshops for T&C practitioners.   Audit noted that the percentage of no-shows ranged from 15.7% to 22% and only 8,969 (81.1%) of the 11,053 enrolled participants attended the seminars and workshops (paras. 4.24 and 4.25).

18.   *Need to encourage participation in exhibition programmes.*   In the period from 2016-17 to 2019-20, HKCTC participated in 10 local trade shows and 8 Mainland and overseas trade shows under its exhibition programmes, with a total cost of $1.5 million.   Audit noted that: (a) in each trade show, while the Secretariat of HKCTC invited over 300 CABs to participate, only a handful (2 to 5) of CABs applied for participation in the trade show; and (b) during the period, only 12 CABs participated in one or more trade shows (paras. 4.28 and 4.29).

Way forward

19.   *Need to step up efforts to promote new accreditation services to help fight COVID-19.*   Since April 2020, in response to the strong demand for testing services related to COVID-19, HKAS has launched two new accreditation services under HOKLAS, namely medical face mask testing and COVID-19 reverse transcription-polymerase chain reaction (RT-PCR) testing.   Audit noted that up to 28 February 2021: (a) only two accreditation applications had been received from CABs for medical face masks, and no accreditation had been granted; and (b) only 5 (22%) of the 23 local COVID-19 RT-PCR testing institutions in the private sector recognised by the Government had obtained HKAS accreditation for COVID-19 RT-PCR testing (paras. 5.5 and 5.6).

20.   *Need to devise measures to facilitate further development of the T&C industry.*   In March 2010, HKCTC submitted a report to the Chief Executive of the Hong Kong Special Administrative Region and made 26 recommendations to enhance the competitiveness of the T&C industry.   In March 2013, HKCTC completed a review of the implementation progress of the recommendations made in 2010. According to the report, all recommendations made in 2010 had been implemented. The 2013 report made further recommendations to support the development of the industry.   Since 2013, there have been developments pertinent to the T&C industry. Audit considers that ITC needs to, in collaboration with the Innovation and Technology Bureau and taking on board the observations and recommendations in this Audit Report, continue to engage HKCTC and other stakeholders in the T&C industry

with a view to devising appropriate measures to facilitate the industry in grasping new opportunities for development (paras. 5.11 and 5.12).

Audit recommendations

21.   **Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in this Executive Summary. Audit has** *recommended* **that the Commissioner for Innovation and Technology should:**

HKAS

(a)   **before launching new accreditation programmes, conduct thorough assessments on the market demand (para. 2.15(a));**

(b)   **step up efforts in promoting the three accreditation schemes of HKAS (para. 2.15(b));**

(c)   **step up efforts in promoting to B/Ds the services of HKAS and services of organisations accredited by HKAS (para. 2.15(c));**

(d)   **ensure that the reassessments for accredited organisations are conducted in a timely manner (para. 2.27(a));**

(e)   **ensure proper use of HKAS symbols and proper claims of accreditation status (para. 2.27(b));**

PSIB and SCL

(f)   **review the need for maintaining PSRC (para. 3.15(a));**

(g)   **maintain proper inventory records for all inventory items kept in PSRC and conduct inventory checks according to the requirements of SPRs (para. 3.15(b));**

(h)   **devise an effective mechanism on disposal of outdated standards and publications in PSRC (para. 3.15(c));**

(i)   **maintain proper performance records on PSIB's sales of standards and ensure that information on performance of PSIB reported in COR is accurate and is substantiated by proper performance records (para. 3.15(d) and (e));**

(j)   **complete the implementation of the recommendation of GLD on inventory management as soon as practicable (para. 3.28(a));**

(k)   **conduct inventory checks on inventory items of SCL according to the requirements stipulated in SPRs and ensure the accuracy of inventory records (para. 3.28(b));**

(l)   **ensure that the equipment of SCL is calibrated in a timely manner (para. 3.28(c));**

(m)   **take necessary actions to address the issue of long queuing time (para. 3.28(d));**

Support for HKCTC

(n)   **encourage and facilitate non-official members' attendance at council meetings (para. 4.16(a));**

(o)   **ensure that potential conflicts of interest of members are declared in council meetings (para. 4.16(b));**

(p)   **ensure that the draft minutes of council meetings are issued to members for comments as soon as possible (para. 4.16(c));**

(q)   **promote the teaching kit on chemical testing to secondary schools (para. 4.30(a));**

(r)   **encourage the enrolled participants to attend the seminars and workshops organised for T&C practitioners (para. 4.30(b));**

(s)   **enhance CABs' interest in the exhibition programmes launched to promote Hong Kong's T&C services and boost their participation (para. 4.30(c));**

Way forward

(t)   **promote HKAS accreditation services for the testing of medical face masks and COVID-19 (para. 5.8); and**

(u)   **continue to engage HKCTC and other stakeholders in the T&C industry with a view to devising appropriate measures to facilitate the industry in grasping new opportunities for development (para. 5.13).**

Response from the Government

22.   The Commissioner for Innovation and Technology agrees with the audit recommendations.

PART 1: INTRODUCTION

1.1   This PART describes the background to the audit and outlines the audit objectives and scope.

Background

1.2   The Innovation and Technology Commission (ITC) promotes internationally accepted standards and conformity assessment services to underpin technological development and international trade, and the development of the testing and certification (T&C) industry in Hong Kong.

Internationally accepted standards

1.3   Standards are consensus of doing things, specifications for products, test methods or materials. They can be as simple as sets of guidelines, codes of practices and ways of delivering services. Promoting internationally accepted standards is important because they can:

   (a)   facilitate trade by removing trade barriers;

   (b)   assure product safety for health and environmental protection; and

   (c)   promote interoperability of products and services to ensure exchange of information securely and productively.

1.4   Examples of international standard publishers include:

   (a)   ***International Organization for Standardization (ISO).***   ISO is an independent, non-governmental international organisation comprising a membership base of over 160 national standards bodies. It brings together experts from all over the world to develop International Standards;

(b) ***International Electrotechnical Commission (IEC).*** IEC is a global, non-profit-making organisation, whose work underpins quality infrastructure and international trade in electrical and electronic goods; and

(c) ***International Telecommunication Union.*** International Telecommunication Union is the United Nations specialised agency for information and communication technologies. It develops technical standards to ensure that networks and technologies are seamlessly interconnected.

Conformity assessment services

1.5 Conformity assessment involves a set of processes which demonstrate that specific requirements relating to a product, process, system, person or body are fulfilled. The main types of conformity assessment are:

(a) ***Testing.*** Testing is the determination of one or more characteristics of an object according to a procedure. It can be performed by the object owner, a party interested in the object (e.g. a buyer/user) or an independent third party. Examples of testing are:

  (i) testing of colour fastness of textiles and garments; and

  (ii) testing for heavy metal contents in food samples;

(b) ***Inspection.*** Inspection is the examination of a product design, product, process or installation and determination of its conformity to specific or general requirements on the basis of professional judgement. It can be performed by the object owner, a party interested in the object (e.g. a buyer/user) or an independent third party. Examples of inspection are:

  (i) inspection of products at the factory before shipment to determine whether they comply with the buyer's specifications; and

  (ii) inspection of structural welds to determine whether they meet the contractual and statutory requirements; and

(c)   *Certification.*   Certification is the provision of written assurance (a certificate) by an independent third-party that the product, process, system or person fulfils specified requirements. A certification process may involve testing and/or inspection procedures.   For certification, the assurance provided is in general valid for the period of time stated in the certificate (there is usually no "expiry date" for a test or for an inspection report). There are two major categories of certification activities:

    (i)   *Management system certification*.   There are various international standards on good management practice.   Organisations seek certification to prove that they comply with these international standards, e.g. certification of an organisation's compliance with the requirements for a quality management system under ISO 9001 (Note 1); and

    (ii)   *Product certification.* A certification body conducts evaluation on the product manufacturer in accordance with the specifications, and may issue a certificate to confirm that a product of a supplier satisfies the requirements set out in the specified certification scheme, e.g. certification of a mobile phone's compliance with regulatory requirements.

A body (e.g. a testing laboratory, an inspection body or a certification body) that performs conformity assessment services is referred to as a conformity assessment body (CAB).

The T&C industry

1.6   The T&C industry plays an important role in supporting Hong Kong's external trade and contributes to economic development. It provides assurance on the safety and quality of a wide range of products, and ensures that the products comply with international standards and regional standards through conformity assessment services.

Note 1:   *ISO 9001 is issued by ISO. It specifies the requirements for a quality management system.*

Introduction

1.7   In October 2008, the Chief Executive of the Hong Kong Special Administrative Region (CE) established the Task Force on Economic Challenges (TFEC) to monitor and assess the impact of the 2008 financial tsunami on local and global markets. TFEC had identified T&C as one of the six economic areas where Hong Kong enjoys clear advantages and has good potential for further development (Note 2). TFEC recommended the Government to:

(a)   establish a Hong Kong Council for Testing and Certification (HKCTC) to enhance professional standards and recognition of T&C industry in the international arena, and explore more business opportunities;

(b)   continue to provide more business opportunities for private laboratories, for example, by increasing outsourcing of food tests to complement new legislation, and encourage the Chinese medicine trade to monitor the quality of Chinese medicine products by conducting basic tests on such products on a regular basis;

(c)   promote Hong Kong T&C services in the Mainland and overseas through the Hong Kong Productivity Council, the Hong Kong Trade Development Council and the Government's Economic and Trade Offices;

(d)   pursue discussions with the Mainland authorities through the Mainland and Hong Kong Closer Economic Partnership Arrangement (CEPA) to seek their agreement to recognise the testing reports of Hong Kong accredited laboratories; and

(e)   strengthen vocational training programmes for the industry.

1.8   The Government accepted the recommendations of TFEC and set up HKCTC in September 2009 to advise it on the overall development strategy of the T&C industry. Since the establishment of HKCTC in 2009 and up to 2019, the number of private independent establishments in the T&C industry increased by 200 (35%)

Note 2:   *The six economic areas are: (a) medical services; (b) environmental industries; (c) T&C; (d) education services; (e) innovation and technology; and (f) cultural and creative industries.*

from 570 in 2009 to 770 in 2019 (see Figure 1). In the same period, the total number of persons engaged in these establishments increased by 2,110 (17%) from 12,680 in 2009 to 14,790 in 2019 (see Figure 2) (Note 3). In 2019, the total business receipts of these private independent establishments amounted to $14.9 billion.

Figure 1

**Number of private independent establishments in the T&C industry
(2009 to 2019)**
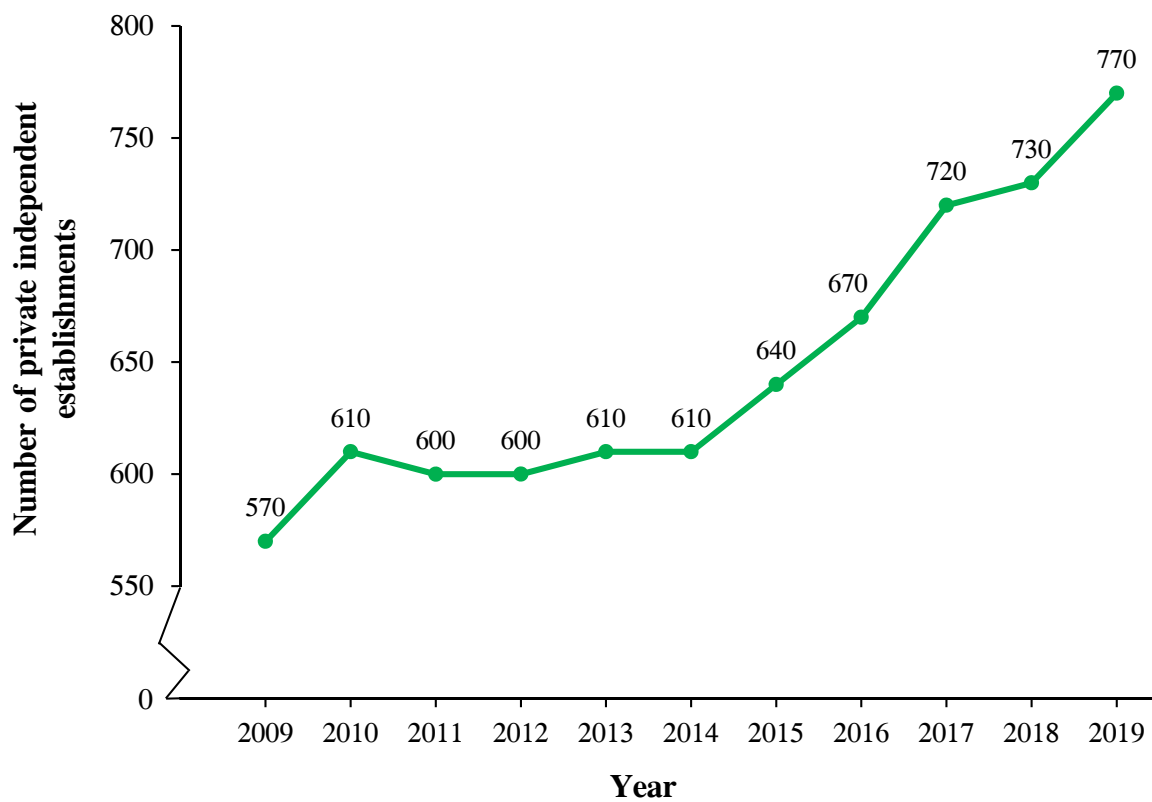
Source: *Audit analysis of Census and Statistics Department records*

Remarks: *Up to March 2021, information on the number of private independent establishments in the T&C industry for 2020 was not yet available.*

Note 3: *Up to March 2021, information on the number of private independent establishments in the T&C industry and the number of persons engaged for 2020 was not yet available.*

Figure 2

**Number of persons engaged in the private independent
establishments in the T&C industry
(2009 to 2019)**
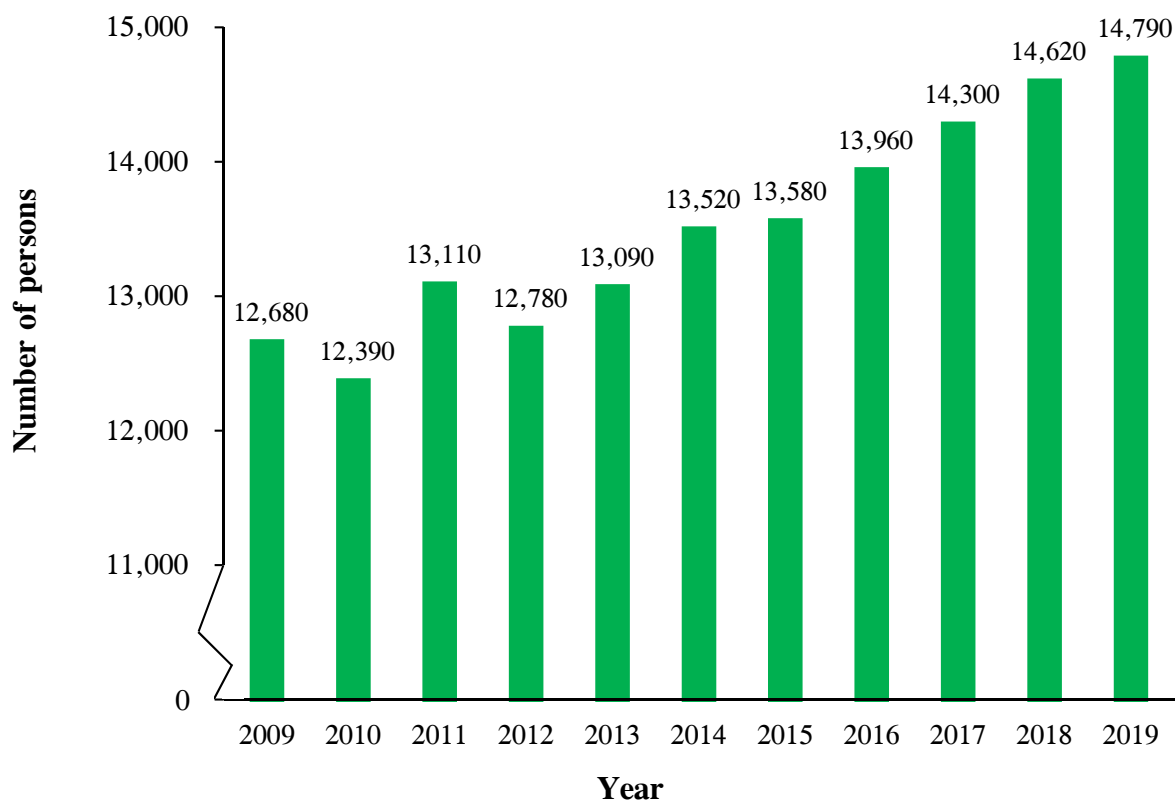
Source: *Audit analysis of Census and Statistics Department records*

Remarks: *Up to March 2021, information on the number of persons engaged in
the private independent establishments in the T&C industry for 2020
was not yet available.*

Work of ITC relating to quality support

1.9 ITC promotes internationally accepted standards and conformity assessment
services to underpin technological development and international trade, and the
development of the T&C industry in Hong Kong under its programme area "Quality
Support". The work of ITC relating to quality support includes:

(a) ***Hong Kong Accreditation Service (HKAS).*** Accreditation refers to
attestation issued by a third party (i.e. an accreditation body) to a CAB

conveying formal demonstration of its competence to carry out specific conformity assessment services. The application for HKAS accreditation is voluntary and CABs are not required to obtain HKAS accreditation in order to carry out conformity assessment services in Hong Kong. There are three accreditation schemes under HKAS:

(i) *Hong Kong Laboratory Accreditation Scheme (HOKLAS).* HOKLAS provides accreditation services for laboratories, reference material (Note 4) producers and proficiency testing providers;

(ii) *Hong Kong Certification Body Accreditation Scheme (HKCAS).* HKCAS provides accreditation services for certification bodies, and greenhouse gas validation and verification bodies; and

(iii) *Hong Kong Inspection Body Accreditation Scheme (HKIAS).* HKIAS provides accreditation services for inspection bodies;

(b) *Product Standards Information Bureau (PSIB).* PSIB promotes general awareness of the importance and benefits of product standards and facilitates manufacturers and exporters in understanding and complying with international standards and requirements. PSIB's work involves:

(i) operation of the Product Standards Resource Centre (PSRC);

(ii) sales of standards and standard-related publications; and

(iii) provision of free technical enquiry services on product standards and safety requirements;

(c) *Standards and Calibration Laboratory (SCL).* SCL is responsible for establishing and maintaining the reference standards of physical

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Note 4: *Reference material is a material that is sufficiently homogeneous and stable with respect to one or more specified properties, and has been established to be fit for its intended use in a measurement process. Reference material is typically used for calibrating instruments or as quality control material for an analysis.*

measurement traceable to the International System of Units (SI) (Note 5) for Hong Kong. SCL's work involves:

(i)   development and maintenance of primary standards for the physical measurements in six fields, namely: (1) electromagnetism; (2) time and frequency; (3) temperature; (4) photometry and radiometry; (5) length; and (6) mass;

(ii)   provision of calibration services to users of measurement standards and measuring instruments to ensure measurement accuracy and metrological traceability to SI; and

(iii)   organising training courses, workshops, seminars and symposiums for practitioners to promote the latest knowledge and development in metrology; and

(d)   ***Secretariat support for HKCTC.*** A section of ITC serves as the Secretariat of HKCTC (see Appendix A for an extract of the organisation chart of ITC). The Secretariat provides support to HKCTC in implementing measures to support the development of the T&C industry.

1.10   The Quality Services Division of ITC (see Appendix A) is responsible for operating HKAS, PSIB and SCL. As at 31 December 2020, the Quality Services Division and the Secretariat of HKCTC had a staff strength of 94 and 10 respectively. In 2019-20, the expenditure on the programme area "Quality Support" was $145.5 million (see Table 1).

Note 5:   *SI is a set of rules that defines the units of measurement of all quantities used in science and technology, which was adopted by the General Conference of Weight and Measures in 1960. For example, "kilogram" is the SI unit of mass.*

Table 1

**Expenditure on the programme area "Quality Support"
(2019-20)**

	Expenditure ($ million)
SCL	65.8
HKAS	40.4
HKCTC	16.3
PSIB	3.5
Departmental overhead	19.5
Total	145.5

Source: Audit analysis of ITC records

Audit review

1.11   In October 2020, the Audit Commission (Audit) commenced a review of ITC's efforts in promoting internationally accepted standards and conformity assessment services. The audit review has focused on the following areas:

(a)   HKAS (PART 2);

(b)   PSIB and SCL (PART 3);

(c)   support for HKCTC (PART 4); and

(d)   way forward (PART 5).

Audit has found room for improvement in the above areas and has made a number of recommendations to address the issues.

General response from the Government

1.12   The Commissioner for Innovation and Technology agrees with the audit recommendations. She has said that the Audit Report will serve as a valuable reference for ITC's continuous enhancement of the quality support services.

Acknowledgement

1.13   During the audit review, in light of the outbreak of coronavirus disease (COVID-19), the Government had implemented various special work arrangements and targeted measures for government employees, including working from home. Audit would like to acknowledge with gratitude the full cooperation of the staff of ITC during the course of the audit review amid the COVID-19 epidemic.

PART 2: HONG KONG ACCREDITATION SERVICE

2.1   This PART examines the operation of HKAS, focusing on the following areas:

(a)   promotion of accreditation services (paras. 2.3 to 2.16);

(b)   operation of accreditation schemes (paras. 2.17 to 2.28); and

(c)   performance measurement and reporting (paras. 2.29 to 2.32).

Background

2.2   HKAS was set up by the Government in 1998 through the expansion of HOKLAS, which was set up in 1985. HKAS provides accreditation mainly for laboratories, certification bodies and inspection bodies located in Hong Kong (Note 6) through HOKLAS, HKCAS and HKIAS respectively (see para. 1.9(a)). The objectives of HKAS are:

(a)   upgrading the standard of operation of CABs;

(b)   offering official recognition to competent CABs which meet international standards;

(c)   promoting the acceptance of endorsed reports and certificates issued by accredited CABs;

(d)   concluding mutual recognition arrangements with other accreditation bodies; and

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Note 6:   *Under HOKLAS, for tests included in the test category of "Construction Materials", applications from laboratories located in the Pearl River Delta Region are also accepted. For tests included in the test category of "Toys and Children's Products", applications from laboratories outside Hong Kong will be accepted if they only involve minor extension of scope from Mainland laboratories that are already accredited by HKAS.*

(e)   eliminating the need for repetition of conformity assessment in the importing economies and thereby reducing costs and facilitating free trade across borders.

The Accreditation Advisory Board (AAB) (Note 7) advises HKAS on matters relating to accreditation.

Promotion of accreditation services

2.3   HKAS organises different activities (e.g. seminars) to promote its accreditation services. Accreditation is voluntary. CABs are not required to obtain HKAS accreditation in order to carry out conformity assessment services in Hong Kong. However, obtaining accreditation will bring about benefits including:

(a)   *Recognition of competence.*   Accreditation provides formal third-party recognition to competent CABs. The accredited organisation is independently assessed against international standards in carrying out specific activities, e.g. testing/calibration, inspection or certification;

(b)   *Marketing advantage.*   Accreditation facilitates acceptance of test and calibration results, inspection reports and certifications by governments, contractors, procurers and consumers, who want independently evaluated service providers. Accreditation in turn promotes corporate images and aids the sustainability of business of competent CABs; and

(c)   *International acceptance.*   Through the various multilateral mutual recognition arrangements among accreditation bodies worldwide, overseas markets are more ready to accept HOKLAS endorsed test and calibration reports, HKIAS endorsed inspection reports and HKCAS accredited certificates. This cross-border recognition mechanism reduces the need for repetition of testing, calibration, certification and inspection in the importing economies and thereby facilitating trade.

Note 7:   *The Chairman and members of AAB are appointed by the Secretary for Innovation and Technology under the delegated authority from CE. Members of AAB include: (a) representatives from private and public bodies having interests in the accreditation for CABs; (b) technical specialists; (c) major users of HKAS accredited activities; and (d) representatives from CABs.*

HKAS evaluates the performance of CABs through on-site assessments before they are recognised as competent in performing the conformity assessment services. As at 31 December 2020, there were 278 CABs accredited by HKAS (see Table 2). Information of these CABs is published on ITC's website. When looking for conformity assessment services, users may make reference to the information on ITC's website regarding the services provided by accredited CABs.

Table 2

Number of CABs accredited by HKAS
(31 December 2020)

Accreditation scheme	No. of CABs		
	Government bureau/ department (a)	Private sector (b)	Total (c) = (a) + (b)
HOKLAS	25	205	230
HKCAS	—	25	25
HKIAS	—	23	23
Total	25	253	278

Source: Audit analysis of ITC records

2.4 From time to time, HKAS explores the feasibility of launching new accreditation programmes to meet the needs of the T&C industry. According to the Quality Procedures of HKAS, when establishing a new programme, HKAS shall consider:

(a) the needs, benefits and the volume of the demand for such accreditation programme in Hong Kong;

(b) whether the subject of accreditation is accreditable in accordance with relevant international accreditation standards;

(c)   the competence of existing personnel and availability of other resources; and

(d)   the views of interested parties.

2.5   As at 31 December 2020, the number of accreditation programmes under HOKLAS, HKCAS and HKIAS was 18, 9 and 4 respectively (see Appendix B).

Need to step up efforts to promote accreditation services of HKAS

2.6   *Net increase in number of accredited organisations.*   While it is for individual organisations to decide, taking into account their own circumstances, whether or not to apply for accreditation, HKAS sets a benchmark on the net increase in accredited organisations each year.   According to HKAS, the purpose of the benchmark is to facilitate it to review the extent to which its objective of "upgrading the standard of operation of CABs" (see para. 2.2(a)) has been met.   Every year, HKAS reviews the net increase during the year and compares the net increase with the benchmark set for the year.   Audit noted that for three of the five years from 2015-16 to 2019-20, the benchmark set had not been met (see Table 3).   This reflected that more effort is needed in achieving the objective of "upgrading the standard of operation of CABs".

Table 3

**Net increase in the
number of accredited organisations
(2015-16 to 2019-20)**

	2015-16	2016-17	2017-18	2018-19	2019-20
Benchmark set for the year (a)	+6	+6	+6	+6	+6
No. of additions	+13	+15	+12	+15	+12
No. of terminations	−8	−3	−5	−13	−12
Actual (b)	+5	+12	+7	+2	0
Actual as a percentage of benchmark set (c) = (b) ÷ (a) ×100%	83.3%	200%	116.7%	33.3%	0%
Benchmark set for the year had been met	✘	✓	✓	✘	✘

Source: *Audit analysis of ITC records*

Remarks: *The review period for the net increase in the number of accredited organisations started on 1 September of a year and ended on 31 August of the following year.*

2.7   ***Termination of accreditations.***   While there were a considerable number of organisations newly accredited in each year, there were also a considerable number of accredited organisations terminating their accreditations. For example, in 2019-20, while 12 new accreditations were granted, there were 12 terminations in the same year (see Table 3 in para. 2.6). According to HKAS, for organisations seeking termination of accreditation status, HKAS would ascertain their reasons for termination and record the results of enquiry. However, Audit noted that HKAS had not promulgated guidelines on the procedures for ascertaining the reasons for termination and whether any follow-up actions are warranted. Audit examination of the termination for the 34 accredited organisations in the period from 2018 to 2020 revealed that:

(a)   for 20 (59%) organisations, no reason for termination was recorded;

(b)   for 5 (15%) organisations, the reason for termination was recorded as "business decision" without further details; and

(c)   for 9 (26%) organisations, various reasons for termination were recorded (e.g. closure of laboratory, insufficient funding or transfer of key staff).

2.8   *New accreditation programmes.*   Audit examined the number of organisations that were accredited under the three accreditation schemes and noted that as at 31 December 2020, the number of organisations accredited under some programmes was not high (see Table 4):

(a)   *HOKLAS.*   Of the 18 programmes, 3 (17%) had not more than two organisations accredited.   Of these 3 programmes, 1 had only two organisations accredited and each of the remaining 2 had only one organisation accredited;

(b)   *HKCAS.*   Of the 9 programmes, 4 (44%) had not more than two organisations accredited.   Of these 4 programmes, 2 had only two organisations accredited, 1 had only one organisation accredited and the remaining one had not granted accreditation to any organisation since the programme's commencement in November 2011; and

(c)   *HKIAS.*   Of the 4 programmes, 2 (50%) had not more than two organisations accredited.   Of these 2 programmes, 1 had only two organisations accredited and the remaining one had not granted any accreditation since the programme's commencement in December 2017.

Table 4

**Programmes with not more than two organisations accredited
(31 December 2020)**

Accreditation scheme	Programme	Commencement date	No. of organisations accredited as at 31 December 2020
HOKLAS	Forensic testing	December 2010	2
	Reference material producers	September 2010	1
	Veterinary testing	October 2017	1
HKCAS	Greenhouse gas validation and verification	December 2012	2
	Residential care homes (elderly persons) service providers' management system certification	June 2013	2
	Food safety management system certification	March 2011	1
	Information security management system certification	November 2011	0
HKIAS	Consumer products	December 1999	2
	Scene of crime investigation	December 2017	0

Source: Audit analysis of ITC records

2.9   Before each new programme is launched, HKAS submits a proposal to AAB for endorsement. Audit reviewed the proposals for 3 (33%) of the 9 programmes with not more than two accredited organisations (see Table 4) and found the following issues:

(a)   *Veterinary testing under HOKLAS.* Before establishing this accreditation programme, HKAS consulted stakeholders in this field (including private

practitioners, veterinary laboratories in public organisations, a university offering veterinary programme and the Agriculture, Fisheries and Conservation Department) and asked if they were interested in the accreditation service. In the proposal submitted to AAB in March 2016, HKAS estimated that there were around 20 small animal hospitals/clinics in Hong Kong operating a sizeable veterinary laboratory and there was a potential demand for the new programme. However, up to 31 December 2020, only one laboratory had applied and obtained accreditation under the programme;

(b) ***Information security management system certification under HKCAS.*** Before the proposal was submitted to AAB in January 2011, HKAS conducted a survey to assess the demand for the new programme. In the survey, 9 (53%) of the 17 respondents expressed interest for the new programme. However, up to 31 December 2020, only two applications had been received and no accreditation had been granted; and

(c) ***Scene of crime investigation under HKIAS.*** According to the proposal submitted to AAB in June 2015, some government departments would likely be users of the services under the new programme. However, up to 31 December 2020, no applications for accreditation had been received. According to HKAS:

(i) one potential applicant had already indicated that it would submit an application in 2021; and

(ii) CABs needed time to prepare for the application for accreditation. For instance, CABs needed to establish the necessary management system, train and evaluate their staff, prepare and validate the methods they use, collect sufficient data to demonstrate their competences in carrying out the activities concerned, etc. This process could take one to two years or even longer, depending on the complexity of the activities and the resources of CABs.

2.10   Audit considers that ITC needs to:

(a)   before launching new accreditation programmes, conduct thorough assessments on the market demand for the programmes (e.g. conduct surveys among industry practitioners and consult key stakeholders);

(b)   step up efforts in promoting the three accreditation schemes of HKAS and in particular, those accreditation programmes of the schemes with only a small number of accredited organisations; and

(c)   consider promulgating guidelines on the procedures for liaising with the organisations terminating their accreditations to ascertain whether the reasons for the termination are attributable to HKAS's services and whether HKAS can take appropriate follow-up actions if necessary.

Need to encourage bureaux/departments to use services of HKAS and its accredited organisations

2.11   According to General Circular No. 16/2016 issued by the Director of Administration in February 2016 (Note 8), government bureaux/departments (B/Ds) were urged to use the accreditation services provided by HKAS and the conformity assessment services provided by organisations accredited by HKAS:

Accreditation services provided by HKAS

(a)   B/Ds operating laboratories are urged to apply for HOKLAS accreditation. Success in obtaining accreditation underlines the high standard of the services provided and acknowledges a firm commitment to continual quality improvement;

(b)   B/Ds involved in evaluating non-government laboratories, inspection bodies, certification bodies, proficiency testing providers, reference material producers, greenhouse gas validation/verification bodies, suppliers

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Note 8:   *General Circular No. 16/2016 superseded General Circular No. 2/2014 issued by the Director of Administration in February 2014, with the pertinent features mentioned in paragraph 2.11 unchanged.*

or contractors are recommended to use HKAS accreditation as an independent means of quality assurance;

Services provided by organisations accredited by HKAS

(c)   B/Ds are recommended to use conformity assessment services that are accredited by HKAS. B/Ds should request reports or certificates bearing HKAS accreditation symbol; and

(d)   B/Ds seeking management system certification are urged to use certification services accredited under HKCAS.

2.12   Upon enquiry, ITC informed Audit in January and March 2021 that:

(a)   when developing and executing the accreditation programmes, HKAS had involved relevant B/Ds;

(b)   HKAS had published information about its accreditation services and points of enquiry on ITC's website for B/Ds' information; and

(c)   from time to time, HKAS met with different B/Ds to discuss accreditation related matters, introduce the accreditation services of HKAS to them and seek their feedback on services.

2.13   Audit noted that in the period from 2016 to January 2021, only two new accreditations were granted to B/Ds and two B/Ds which had been accredited before 2016 terminated their accreditations. According to ITC, HKAS had communicated with the two B/Ds through emails or phone calls to ascertain the reasons for their terminations. However, Audit noted that HKAS had not recorded the reasons for the terminations and whether follow-up actions had been taken to encourage them to retain the accreditation status.

2.14   Audit considers that ITC needs to step up efforts in promoting to B/Ds the services of HKAS and services of organisations accredited by HKAS and encourage them to use such services. For example, HKAS may send promotional materials to B/Ds which are potential users of the services. ITC also needs to promulgate

guidelines on the procedures for discussing with B/Ds which terminate their accreditations voluntarily to ascertain the reasons for the terminations and whether any follow-up actions are warranted.

Audit recommendations

2.15   **Audit has *recommended* that the Commissioner for Innovation and Technology should:**

(a)   **before launching new accreditation programmes, conduct thorough assessments on the market demand for the programmes;**

(b)   **step up efforts in promoting the three accreditation schemes of HKAS and in particular, those accreditation programmes of the schemes with only a small number of accredited organisations;**

(c)   **step up efforts in promoting to B/Ds the services of HKAS and services of organisations accredited by HKAS, and encourage B/Ds to use such services; and**

(d)   **promulgate guidelines on the procedures for ascertaining the reasons for the voluntary terminations of accreditations and whether any follow-up actions are warranted.**

Response from the Government

2.16   The Commissioner for Innovation and Technology agrees with the audit recommendations. She has said that:

(a)   ITC will continue to conduct thorough surveys among industry practitioners and consult key stakeholders to determine market demand for new services, and carefully consider their feedback before launching new programmes;

(b)   ITC will step up its efforts in promoting the services of HKAS and services of organisations accredited by HKAS to both the public and private sectors; and

(c)   ITC will formalise the procedures for ascertaining the reasons for voluntary terminations of accreditations and take appropriate follow-up actions if necessary.

Operation of accreditation schemes

2.17   In the period from 2016 to 2020, HKAS received 1,176 applications for accreditation. The Regulations for HKAS Accreditation issued by HKAS set out the accreditation procedures of HKAS (see Appendix C):

(a)   *Application.* An organisation seeking accreditation should contact HKAS and submit an application (including appropriate documentation) to HKAS;

(b)   *Preliminary visit.* HKAS arranges a preliminary visit to the organisation, if necessary, to answer any questions relating to HKAS regulations and technical criteria, and to evaluate the readiness of the organisation for accreditation;

(c)   *Documentation review.* HKAS conducts documentation review and informs the applicant of any nonconformities after the review;

(d)   *On-site assessment.* HKAS selects suitable experts and/or assessors to undertake on-site assessment of the organisation. An on-site assessment is undertaken at the organisation and where appropriate, also at its clients' or contractors' sites;

(e)   *Review of assessment by AAB.* The assessment is reviewed by AAB and the assessment results will be issued to the applicant in the form of an outcome letter;

(f)   *Granting of accreditation.* If any required remedial actions taken by the applicant are found acceptable by HKAS, granting of accreditation normally follows. After accreditation is granted, a formal notification letter and a certificate of accreditation are issued to the applicant; and

(g)   *Reassessment.* After accreditation has been granted, HKAS reassesses the accredited organisations regularly in accordance with specific schedules to

ensure that the standards required for continued accreditation are maintained.

Reassessments not conducted in a timely manner

2.18   HKAS conducts reassessments for each accredited organisation regularly to ensure that the standards required for continued accreditation are maintained. The continuation of the accreditation of an organisation is subject to the satisfactory resolution of nonconformities identified in the reassessments. The frequencies for conducting reassessments vary among the three accreditation schemes:

(a)   *HOKLAS.* Reassessments are conducted in the following year after the accreditation is granted and thereafter at intervals normally not exceeding two years;

(b)   *HKCAS.* Reassessments are conducted every three years after the accreditation is granted; and

(c)   *HKIAS.* Reassessments are conducted every two years after the accreditation is granted.

2.19   The Quality Procedures of HKAS stipulate that the reassessments should be conducted not later than four weeks after their due dates. Audit reviewed 20 reassessments conducted by HKAS in the period from 2016 to 2019 (5 for each year) (Note 9) and noted that 2 (10%) of the 20 reassessments were delayed (i.e. conducted later than four weeks after the due dates). The delays were 28 days and 37 days respectively, counting from the expiry of four weeks after the due dates.

2.20   Audit also noted that as at 14 October 2020, 40 outstanding reassessments had been overdue for more than four weeks (i.e. delayed) (see Table 5). The delays, counting from the expiry of four weeks after the due dates, ranged from 7 to 651 days (93 days on average).

Note 9:   *According to ITC, the reassessments in 2020 were affected by the outbreak of COVID-19.*

Table 5

Outstanding reassessments overdue for more than four weeks
(14 October 2020)

Period of delay (Note 1) (Day)	HOKLAS	HKCAS	HKIAS	Total
≤ 50	10	8	1	19
51 to 100	14	—	—	14
101 to 200	4	—	—	4
201 to 500	—	—	—	—
501 to 700	—	—	3 (Note 2)	3
Total	28	8	4	40

Source: *Audit analysis of ITC records*

Note 1:   *The period of delay up to 14 October 2020 was counted from the expiry of four weeks after the due date of reassessment.*

Note 2:   *The longest period of delay was 651 days (1.78 years). According to HKAS: (a) these 3 reassessments involved 2 CABs with branches in Mainland. Upon the implementation of new requirements in the international standard governing the operations of accreditation bodies (i.e. ISO/IEC 17011) with effect from April 2019, instead of conducting on-site reassessment visits to the branches in Mainland, the CAB's staff stationed in Mainland are required to travel to their Hong Kong offices during HKAS's reassessment visits for interview; (b) in late 2019, the CABs concerned agreed with the revised arrangement. However, their staff stationed in Mainland could not travel to Hong Kong for assessment due to the outbreak of COVID-19; and (c) with the implementation of remote assessment in early 2021, the situation would be improved.*

2.21   Upon enquiry, ITC informed Audit in January and March 2021 that:

(a)   HKAS conducted reassessments more frequently than required by the international standard governing the operations of accreditation organisations (i.e. ISO/IEC 17011). The international standard required accreditation bodies to conduct a reassessment at least once every five years. Although some reassessments were not conducted according to the timeframe stipulated by the Quality Procedures of HKAS, the frequency of

the reassessments complied with the requirement of the international standard;

(b)   some on-site reassessments were delayed due to the outbreak of COVID-19, as they needed to be conducted in Mainland; and

(c)   HKAS would arrange remote assessments to some accredited organisations tentatively in early 2021. HKAS had taken actions to ensure compliance with the practice in the international accreditation community for handling delays in on-site assessments due to the outbreak of COVID-19, e.g. by conducting documentation review if on-site assessments could not be conducted.

2.22   Audit considers that ITC needs to take measures to ensure that the reassessments for accredited organisations are conducted in a timely manner, and arrange remote reassessments where appropriate.

Improper use of HKAS symbols and false claims of accreditation status

2.23   Every accredited organisation is given a unique accreditation symbol (see Figure 3 for an example). Accredited organisations may use the HKAS accreditation symbols and claim their HKAS accreditation status in their stationeries, documents, promotional materials, reports, certificates and publicity materials. The symbol consists of:

(a)   HKAS logo;

(b)   logo of the accreditation scheme (e.g. HOKLAS);

(c)   the identification code of the accreditation programme (e.g. RMP for reference material producers); and

(d)   the serial number of the symbol.

Figure 3

HKAS accreditation symbol for HOKLAS

HKAS logo

Logo of the accreditation scheme

Serial number of the symbol

Identification code of the accreditation programme
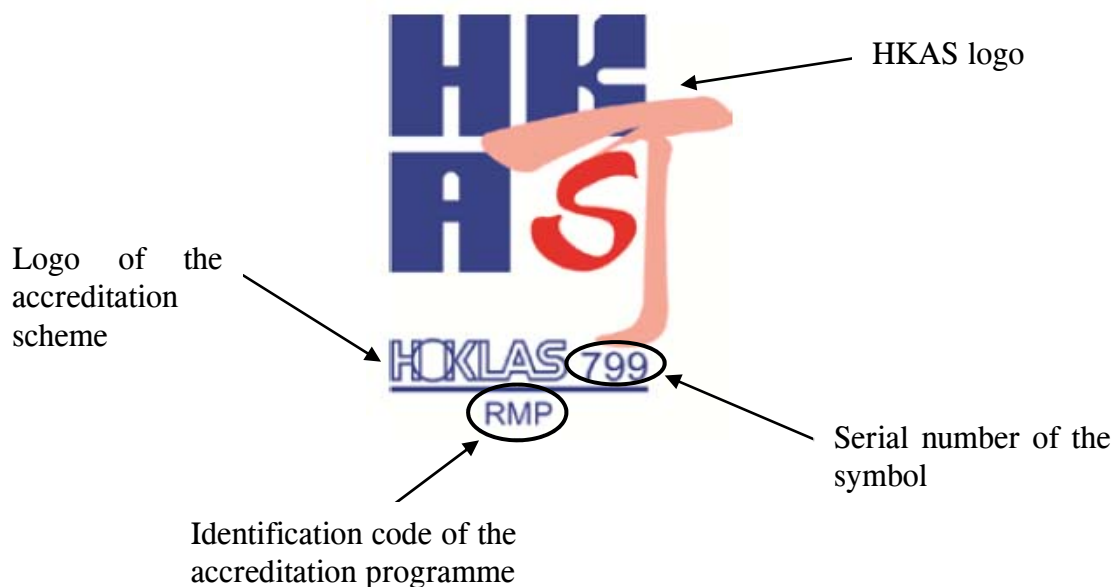
Source: Audit analysis of ITC records

2.24   According to the Regulations for HKAS Accreditation issued by HKAS, all advertising and promotional materials, and statements made by any organisation shall not give a false or misleading impression regarding the accreditation status of the organisation.   HKAS has put in place measures to check any misrepresentation of HKAS accreditation status on an organisation's website once the organisation terminated its accreditation.   In July 2015, HKAS found that some organisations misused HKAS accreditation symbols on advertising materials or websites.   Hence, HKAS reminded accredited organisations that:

(a)   it was the accredited organisation's responsibility to minimise the risk of a client or reader being misled as to the status, extent and limitation of the organisation's accreditation status; and

(b)   in situations where the organisation made a statement on its accreditation status and where non-accredited activity was also mentioned, the organisation should also include a statement indicating which activity was not accredited.

2.25   An accredited organisation may terminate its accreditation(s) for some or all of its accredited activities (Note 10). In 2019, 21 accredited organisations under HOKLAS terminated the accreditations for all or part of their accredited activities. In November 2020, Audit examined the websites of 15 of these 21 organisations and noted that:

(a)   for 1 (7%) organisation, the accreditations on all its accredited activities had been terminated and therefore the accreditation status of the organisation had ceased. However, it still claimed on its website that its laboratories were accredited by HKAS, and was still displaying HKAS accreditation symbol on its website;

(b)   for 1 (7%) organisation, while its accreditations on the activities "corrosion tests" and "toxic elements tests" had been terminated, it still claimed on its website that its laboratories were accredited by HKAS for "corrosion tests" and "toxic elements tests"; and

(c)   for 2 (13%) organisations, although the accreditations on some of their activities had been terminated, they did not include a statement indicating which activities were not accredited, contrary to the requirements of HKAS (see para. 2.24(b)).

2.26   Audit considers that ITC needs to strengthen the measures to ensure proper use of HKAS symbols and proper claims of accreditation status.

Note 10: *For example, an accredited organisation accredited under the accreditation programme "environment testing" may terminate the accreditation for its air quality testing services, but maintain its accreditation for water testing services under the same programme.*

Audit recommendations

2.27   **Audit has *recommended* that the Commissioner for Innovation and Technology should:**

(a)   **take measures to ensure that the reassessments for accredited organisations are conducted in a timely manner, and arrange remote reassessments where appropriate; and**

(b)   **strengthen the measures to ensure proper use of HKAS symbols and proper claims of accreditation status.**

Response from the Government

2.28   The Commissioner for Innovation and Technology agrees with the audit recommendations. She has said that:

(a)   the delays in reassessments mentioned in paragraphs 2.19 and 2.20 were mainly due to travel restrictions and social distancing measures during the outbreak of COVID-19 in 2020. HKAS has been conducting remote assessments and will fully utilise such technique, where appropriate, to minimise any further delay. Remote assessment is a recognised practice in the international accreditation community to deal with delays caused by the pandemic; and

(b)   ITC has taken immediate follow-up actions on the cases mentioned in paragraph 2.25 and instructed the organisations to rectify the accreditation claims concerned. ITC will strengthen the surveillance mechanism on the use of HKAS symbols and claims of accreditation status on organisations' websites after the termination of their accreditations.

Performance measurement and reporting

Need to enhance reporting of information on performance of HKAS

2.29   ITC reports the performance of HKAS in its Controlling Officer's Report (COR) using nine performance indicators, including three on the numbers of accredited organisations, namely "Number of accredited laboratories", "Number of accredited certification bodies" and "Number of accredited inspection bodies". However, the numbers reported under these indicators are affected by the number of organisations newly accredited in the year and the number of organisations which ceased their accreditations in the year. For instance:

(a)   while the number of accredited laboratories decreased by 1 from 226 in 2017 to 225 in 2019, there were 9 and 11 newly accredited laboratories in 2018 and 2019 respectively. On the other hand, 8 and 13 laboratories ceased their accreditations in 2018 and 2019 respectively; and

(b)   while the number of accredited inspection bodies remained as 22 as reported in the three CORs in the period from 2017 to 2019, in both 2018 and 2019 there was 1 inspection body newly accredited and 1 inspection body which ceased its accreditation.

2.30   To enhance transparency, Audit considers that ITC needs to consider the merits of disclosing the information on the number of newly accredited bodies and the number of accredited bodies which ceased their accreditations in each year. For instance, ITC may consider:

(a)   replacing the performance indicator on the number of accredited bodies by separate indicators on the number of bodies newly accredited and the number of accredited bodies which ceased their accreditations in the year; or

(b)   disclosing the pertinent information as notes in COR.

Audit recommendation

2.31 **Audit has *recommended* that the Commissioner for Innovation and Technology should consider the merits of disclosing the information on the number of newly accredited bodies and the number of accredited bodies which ceased their accreditations in each year.**

Response from the Government

2.32 The Commissioner for Innovation and Technology agrees with the audit recommendation. She has said that ITC has already included the performance indicator on the number of newly accredited organisations in the 2021-22 COR and will specify the number of accredited bodies which ceased their accreditations in the notes of the COR next year.

PART 3: PRODUCT STANDARDS INFORMATION BUREAU AND STANDARDS AND CALIBRATION LABORATORY

3.1 This PART examines the work of PSIB and SCL, focusing on the following areas:

(a) management issues of PSIB (paras. 3.2 to 3.16); and

(b) management issues of SCL (paras. 3.17 to 3.29).

Management issues of Product Standards Information Bureau

3.2 PSIB was set up in 1987 to provide local manufacturers with up-to-date information on overseas standards. The objectives of PSIB are:

(a) promoting the general awareness of the importance and benefits of standards in underpinning the development of technology and products; and

(b) facilitating compliance with standards, which enhances the competitiveness and supports cross-border trade.

PSIB participates in major international and regional forums relating to standardisation to keep abreast of the latest standards development.

3.3 PSIB provides the following services:

(a) *Resource centre service at PSRC*. Members of the public may visit PSRC and use the reference materials free of charge;

(b)   *Standard sales service*. Materials available for sale include standards and standard-related publications (e.g. guides and handbooks) issued by six standard publishers (Note 11); and

(c)   *Enquiry service*. Interested parties may use free technical enquiry service of PSIB on product standards and safety requirements.

Low utilisation of PSRC

3.4   PSRC has a total net operational floor area of 41 square metres and is manned by a clerical assistant. PSRC maintains a repository (see Photograph 1) of international standards (e.g. International Standards issued by ISO), national standards (e.g. British Standards issued by the British Standards Institution) and standard-related publications for public reference. They are copyright materials and are not available for borrowing. There is a reading booth (see Photograph 2) with a computer for visitors to access online resources for local and overseas technical regulations, standards, guides and code of practices. The materials accessible to the visitors from this computer are no different from any other computers outside PSRC.

Note 11:   *The six standard publishers are: (a) American Society for Testing and Materials International; (b) British Standards Institution; (c) Deutsches Institut für Normung; (d) IEC; (e) ISO; and (f) Japanese Standards Association.*

Photograph 1

Standards and standard-related publications kept in PSRC

Source: Photograph taken by Audit staff on
8 January 2021

Photograph 2

The reading booth of PSRC

Source: Photograph taken by Audit staff on
8 January 2021

3.5 Audit reviewed the number of visitors to PSRC in the period from 2015 to 2020 (up to September) and noted that the number of visitors to PSRC decreased by 10 (58.8%) from 17 in 2015 to 7 in 2019 (see Figure 4). There were only 4 visitors to PSRC in 2020 (up to September) amid the outbreak of COVID-19.

Figure 4

Number of visitors to PSRC
(2015 to 2020 (up to September))
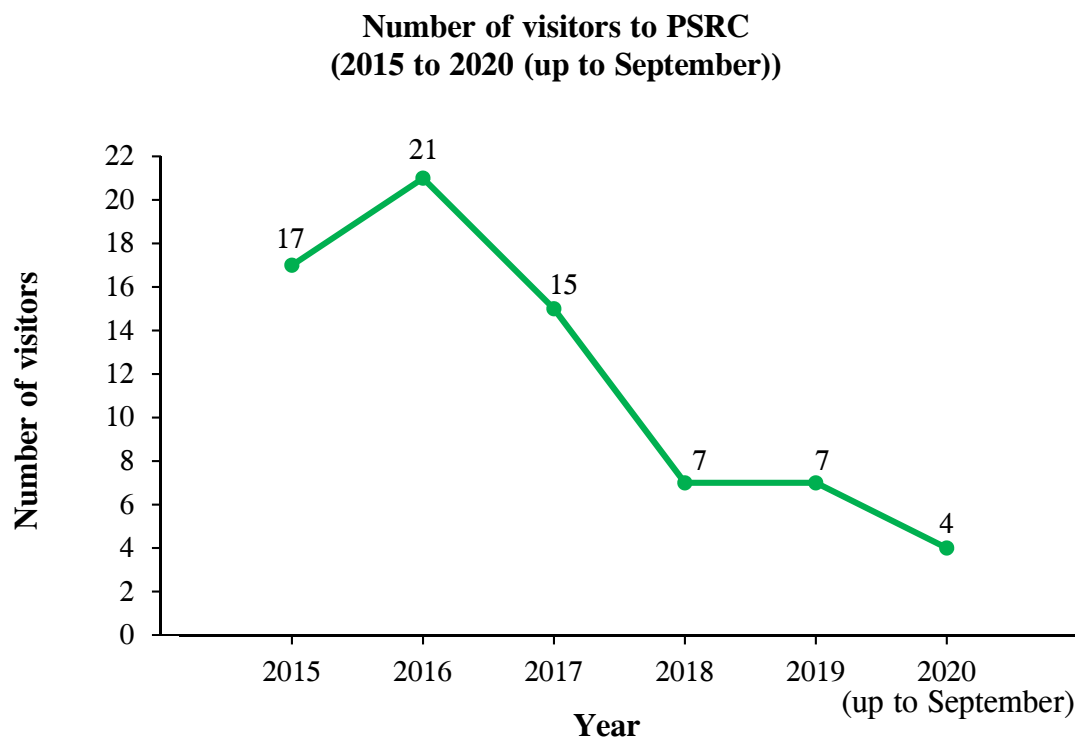
Source: *Audit analysis of ITC records*

Remarks: *According to ITC, the number of visitors to PSRC in 2020 was affected by the outbreak of COVID-19.*

3.6 According to ITC, the decrease in the number of visitors to PSRC was mainly due to the enhancement of Internet access to standards and standard-related publications in recent years:

(a) *Standards.* In the past, visitors used to visit PSRC to gain access to the hardcopies of the standards. Most of them visited PSRC for preliminary reviewing before deciding whether to purchase a standard. In recent years, publishers uploaded their standards (some were "preview versions" and some were "full versions") on their websites, meeting the need of most

users.   Therefore, it became unnecessary for the users to visit PSRC anymore; and

(b)   ***Standard-related publications.***   In the past, the publishers provided hardcopies of periodicals, journals and other printed materials to PSRC. Visitors came to PSRC if they wished to read the materials. In recent years, these materials were made available free of charge on the publishers' websites. According to ITC, the publishers had not provided the hardcopies of these materials to PSRC for over 7 to 8 years.

3.7   With more online resources available, members of the public can easily gain access to the standards and relevant materials on the Internet. Audit considers that ITC needs to review the need for maintaining PSRC and whether the services of PSRC can be more effectively provided by other means. For example, instead of maintaining PSRC, ITC can consider setting up an online product standards resource centre, and enhancing the links to the websites of the standard publishers and to the latest developments on standard-related issues.

Room for improvement in inventory management

3.8   Audit found room for improvement in the inventory management for the standards and standard-related publications kept in PSRC:

(a)   ***Inventory records not kept for some inventory items.***   According to the Stores and Procurement Regulations (SPRs) of the Government, books held on departmental charge and books maintained in departmental libraries should be accounted for in Inventory Sheet and Distribution Record (GF272) or Accession Register (GF39) as appropriate. Audit noted that PSIB had maintained inventory records for some standards procured before 2019 but not all inventory items kept in PSRC, contrary to the requirement of SPRs;

(b)   ***Inventory checks not conducted***. According to SPRs, annual inventory check should be conducted on inventory stores held by B/Ds. However, PSIB had not maintained inventory records on some inventory items kept in PSRC (see para. 3.8(a)) and had not conducted inventory checks for PSRC; and

(c)   ***Need to formulate guidelines on disposal of outdated standards with no reference value.***   Standards and related publications are updated regularly by the standard publishers and the value of outdated standards and related publications diminishes as time goes by.   Upon enquiry, ITC informed Audit in January 2021 that not all outdated materials kept in PSRC had reference value and it was not PSIB's intention to keep all outdated materials in PSRC.   However, PSIB had not devised a mechanism to determine which withdrawn/superseded standards still had reference value and which ones had no reference value and should be disposed of.   Audit conducted a site visit to PSRC in January 2021 and noted that some standards kept in PSRC were issued a long time ago and had been withdrawn or superseded by an updated version.   For example, a standard issued by the British Standards Institution in 1970 and withdrawn in 1995 was still made available to visitors in PSRC.

3.9   Audit considers that ITC needs to maintain proper inventory records for all inventory items kept in PSRC and conduct inventory checks according to the requirements of SPRs.   ITC also needs to devise an effective mechanism on disposal of outdated standards and publications in PSRC which have no reference value.

Room for improvement in performance reporting in COR

3.10   According to the guidelines issued by the Financial Services and the Treasury Bureau, Controlling Officers should make sure that information set out in CORs is substantiated, accurate and succinct.   Controlling Officers should satisfy themselves that proper performance records are maintained and, as far as possible, can be validated.   In its CORs in the period from 2015 to 2019, ITC reports the performance of PSIB under four targets (see Table 6) and five indicators (see Table 7).

Table 6

Performance targets for PSIB reported in CORs
(2015 to 2019)

Performance	Target	Reported performance				
		2015	2016	2017	2018	2019
		(Working day)				
1. Processing of simple enquiries on product standards	1	1	1	1	1	1
2. Processing of complicated enquiries on product standards	8	8	8	8	8	8
3. Issue of quotations for standards (Note 1)	1	1	1	1	1	1
4. Processing of orders for licensed reproduction of standards (Note 2)	2	2	2	2	2	2

Source: *CORs of ITC*

Note 1: *Before 2019, the wording was "Issue of quotations for documented standards".*

Note 2: *Before 2019, the wording was "Processing of orders for photocopies of documented standards".*

Table 7

Performance indicators for PSIB reported in CORs
(2015 to 2019)

Performance indicator	Reported performance				
	2015	**2016**	**2017**	**2018**	**2019**
Technical enquiries					
1. No. of technical enquiries received	384	375	358	387	302
Sales of standards (Note)					
2. No. of enquiries received	204	125	149	134	59
3. No. of quotations given	964	720	899	323	262
4. No. of orders placed	94	74	73	94	37
5. Revenue generated ($)	86,657	77,600	95,860	66,325	60,770

Source: CORs of ITC

Note: Before 2019, the wording was "Sales and photocopying of documented standards".

3.11   ***Reported results on achievement of performance targets not based on proper performance records.*** According to CORs of ITC, in the period from 2015 to 2019, PSIB had fully achieved all the four performance targets (see Table 6). Audit examination of PSIB records revealed the following issues:

(a)   ***Targets 1 and 2.*** Since 5 May 2017, PSIB had introduced a mechanism to monitor the actual performance on Targets 1 and 2. Prior to that, the actual performance on Targets 1 and 2 was not monitored. There was no evidence showing that the performance reported in CORs for 2015, 2016 and 2017 was based on proper records of actual performance;

(b)   ***Target 2.*** PSIB did not receive any complicated enquiries in 2018 and 2019. However, ITC reported by mistake in its CORs that it took

8 working days for the "Processing of complicated enquiries on product standards", instead of reporting that Target 2 was not applicable in the years; and

(c)   ***Targets 3 and 4.***   No performance records were kept to substantiate the actual performance reported for the period from 2015 to 2019 in CORs.

3.12   Audit considers that ITC needs to maintain proper performance records on PSIB's sales of standards and take measures to ensure that performance reported in COR is substantiated by proper performance records.

3.13   ***Some performance information reported in COR not accurate.***   Audit examination of PSIB records in the period from 2015 to 2019 revealed that for sales of standards, some performance information on 2 of the 4 performance indicators (see Table 7), namely "Number of orders placed" for 2015 and 2017 to 2019 and "Revenue generated" for 2015, 2017 and 2018 reported in CORs did not tally with PSIB records (see Table 8).

Table 8

Discrepancies between PSIB records and CORs on
number of orders placed and revenue generated
for sales of standards
(2015 to 2019)

Year	No. of orders placed			Revenue generated ($)		
	Per PSIB Record (a)	Reported in COR (b)	Discrepancy (Percentage) (c) = (b) − (a)	Per PSIB Record (d)	Reported in COR (e)	Discrepancy (Percentage) (f) = (e) − (d)
2015	95	94	−1 (−1.1%)	87,142	86,657	−485 (−0.6%)
2016	74	74	0 (0.0%)	77,600	77,600	0 (0.0%)
2017	71	73	+2 (+2.8%)	96,850	95,860	−990 (−1.0%)
2018	95	94	−1 (−1.1%)	66,275	66,325	+50 (+0.1%)
2019	33	37	+4 (+12.1%)	60,770	60,770	0 (0.0%)

Source: Audit analysis of ITC records

3.14   Upon enquiry, ITC informed Audit in December 2020 that the discrepancies between information reported in CORs and PSIB records were mainly due to clerical errors. Audit considers that ITC needs to take measures to ensure that the information on performance of PSIB reported in COR for sales of standards is accurate.

Audit recommendations

3.15   **Audit has *recommended* that the Commissioner for Innovation and Technology should:**

(a)   **review the need for maintaining PSRC and whether the services of PSRC can be more effectively provided by other means;**

(b)   **maintain proper inventory records for all inventory items kept in PSRC and conduct inventory checks according to the requirements of SPRs;**

(c)   **devise an effective mechanism on disposal of outdated standards and publications in PSRC which have no reference value;**

(d)   **maintain proper performance records on PSIB's sales of standards and take measures to ensure that performance reported in COR is substantiated by proper performance records; and**

(e)   **take measures to ensure that the information on performance of PSIB reported in COR for sales of standards is accurate.**

Response from the Government

3.16   The Commissioner for Innovation and Technology agrees with the audit recommendations. She has said that:

(a)   ITC is conducting a comprehensive stock-taking exercise of publications kept in PSRC in accordance with the requirements of SPRs and will develop a mechanism on the disposal of standards and publications in PSRC; and

(b)   ITC will ensure that the performance records on PSIB's sales of standards are maintained properly and information on performance reported in COR is substantiated by proper performance records.

Management issues of Standards and Calibration Laboratory

3.17   SCL was established in 1984 and became part of ITC in 2000. Through participation in the Mutual Recognition Arrangement drawn up by the International Committee for Weights and Measures, SCL's calibration certificates are accepted worldwide. SCL's major functions are:

(a)   establishing and maintaining the reference standards of physical measurement traceable to SI for Hong Kong (see para. 1.9(c));

(b)   participating in international metrological activities to ensure that these reference standards are recognised worldwide;

(c)   providing calibration services to users (including B/Ds and the public) of measurement standards and measuring instruments to ensure measurement accuracy and metrological traceability to SI;

(d)   providing accredited Proficiency Testing Services to laboratories in the T&C industry to demonstrate their technical competence; and

(e)   disseminating metrological knowledge through other customer services (e.g. organising training courses, workshops, seminars, etc. for practitioners to promote the latest knowledge and development in metrology).

Room for improvement in inventory management

3.18   In providing calibration services to customers, SCL operates ten laboratories with various types of equipment, parts and tools. In the period from 2015-16 to 2019-20, SCL incurred $98.7 million on purchasing these items. As at 9 December 2020, SCL had 2,608 items of equipment, parts and tools. Audit found room for improvement in the management of inventory items of SCL:

(a)   ***Long time taken to implement a recommendation of the Government Logistics Department (GLD).*** In 2012, GLD completed a survey of the procurement and supplies procedures of ITC's Quality Services Division. GLD pointed out in its survey report that:

(i)   appointing an Executive Officer as the only inventory holder in the Quality Services Division was not appropriate, as it would be difficult for him/her to ensure the accuracy of the items kept at the users' end (e.g. the laboratories); and

(ii)   not providing a copy of the Inventory Sheet and Distribution Records (GF272s) to the users would cause disputes in case of discrepancies between the physical quantities and the inventory records.

GLD recommended ITC to conduct a comprehensive inventory check for all inventory items kept in all sections/units of the Quality Services Division for the purpose of setting up individual Inventory Sheet and Distribution Records to account for inventory items on a sectional/unit basis. In the period from December 2013 to March 2014, GLD conducted follow-up visits to ITC and found that ITC had not implemented the recommendation. In June 2014, GLD urged ITC to speed up the implementation. According to GLD, ITC informed it that progress had been made to implement the recommendation in the past few years.   Audit noted that as at February 2021 (more than eight years since GLD made its recommendation in 2012), the implementation of GLD's recommendation had not been completed. In Audit's view, it is not satisfactory that it has taken ITC so long to implement GLD's recommendation;

(b)   ***Annual inventory checks not conducted.*** According to SPRs, B/Ds are required to conduct inventory checks at least once a year. However, there was no documentary evidence showing that ITC had conducted inventory checks for the inventory items of SCL in the period from 2016 to 2020. Upon enquiry, ITC informed Audit in March 2021 that it commenced a comprehensive inventory check in 2015 as recommended by GLD (see para. 3.18(a)) and the inventory check was still in progress. Therefore, pending the completion of the comprehensive inventory check, no annual inventory checks were completed in the period from 2016 to 2020; and

(c)   ***Need to improve control and recording of inventory items.*** According to SPRs, each inventory item should be recorded in the Inventory Sheet and Distribution Records, and the records should be updated for any transfers. In December 2020, Audit examined 40 inventory items of SCL (with a total purchase cost of $4.4 million) and noted that of these 40 items:

(i)   17 (42.5%) were not labelled with a reference number and, as a result, it was not possible to match the physical items to the Inventory Sheet and Distribution Records; and

(ii)   5 (12.5%) had been transferred from one SCL laboratory to another without updating the Inventory Sheet and Distribution Records to reflect the transfers.

3.19   Audit considers that ITC needs to complete the implementation of the recommendation of GLD on inventory management as soon as practicable, and consult GLD if it encounters difficulties in implementing GLD's recommendation. ITC also needs to conduct inventory checks on its inventory items according to the requirements stipulated in SPRs and take measures to ensure the accuracy of inventory records.

Equipment not calibrated in a timely manner

3.20   It was stipulated in the Quality Manual issued by SCL that:

(a)   all equipment must be checked and calibrated before being put into service; and

(b)   after being put into service, equipment must be calibrated according to the planned schedule and marked with calibration labels or stickers indicating the date of last calibration and the due date for the next calibration.

3.21   Every month, SCL staff generate a calibration list for each laboratory from its computer system to identify equipment items that are due for calibration. According to the calibration list, as at 5 January 2021, of the 1,169 equipment items which required regular calibration (i.e. labelled as "Calibrate regularly"), 1,141 (97.6%) had calibration due dates (Note 12). Audit noted that:

(a)   381 (33.4%) of the 1,141 equipment items had been overdue for calibration, with an average overdue period of 0.9 year (i.e. 331.8 days); and

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Note 12:   *According to ITC, 28 equipment items did not have calibration due dates due to various reasons, e.g. they were calibrated daily.*

(b)   of the 381 items, 127 (33.3%) had been overdue for more than one year, including 25 (6.6%) which had been overdue for more than 3 years. The longest overdue period was 7.3 years (see Table 9).

Table 9

Aging analysis of equipment items overdue for calibration
(5 January 2021)

Overdue period	Number of equipment items
≤ 1 year	254 (66.7%)
>1 year to ≤ 2 years	68 (17.8%)
>2 years to ≤ 3 years	34 (8.9%)
>3 years to ≤ 4 years	21 (5.6%)
>4 years to ≤ 5 years	2 (0.5%)
>5 years (Note)	2 (0.5%)
Total	381 (100.0%)

127 (33.3%)

25 (6.6%)

Source: Audit analysis of ITC records

Note: The longest overdue period was 7.3 years. According to ITC, the item was a backup item (see para. 3.22(a)(i)).

3.22   Upon enquiry, ITC informed Audit in March 2021 that:

(a)   none of the 381 equipment items had been used in measurement work after they were overdue for calibration. Of these 381 equipment items:

(i)   221 (58.0%) were backup equipment items (including the one with calibration overdue for 7.3 years). Although they were labelled as "Calibrate regularly" and had calibration due dates, they only needed to be calibrated before use. They should have been classified as "Calibrate as required" instead of "Calibrate regularly"; and

(ii)   24 (6.3%) had been taken out of service.   Although they were labelled as "Calibrate regularly" and had calibration due dates, they were not required to be calibrated.   They should have been classified as "Not to be calibrated" instead of "Calibrate regularly".

If backup equipment items and out-of-service equipment items were excluded from Table 9, only 136 equipment items were required to be calibrated regularly.   Of these 136 equipment items, 122 (89.7%) had been overdue for 1 year or less and 14 (10.3%) had been overdue for more than 1 year, with the longest overdue period of 2.7 years; and

(b)   there were 136 equipment items (excluding backup items and out-of-service items) overdue for calibration.   The number was higher than the normal level because of the Government's special work arrangement in 2020 due to the outbreak of COVID-19 and staff could not return to the laboratories to conduct the calibration work in a timely manner.   Special arrangement for in-house calibration jobs had been made to minimise the disruptions to external calibration jobs with priority given to equipment items which were essential in maintaining traceability and providing external calibration service.   The overdue level would be improved when normal work arrangement resumed.

3.23   Audit considers that ITC needs to properly assign calibration requirement to SCL's equipment and take measures to ensure that the equipment is calibrated in a timely manner according to the planned schedule.

Need to shorten the time for collecting equipment from customers for calibration

3.24   Customers requesting calibration service from SCL have to provide it with the details of the equipment to be calibrated. SCL then provides a quotation for the calibration. According to the Quality Manual of SCL:

(a)   the queuing time for calibration is the time between the acceptance of quotation by the customer and the collection of equipment by SCL for calibration; and

(b)   in general, the queuing time shall not be longer than 15 working days.

3.25   Audit examined the calibrations for 7,039 equipment items completed by SCL in the period from 2015 to 2020 (see Table 10). Audit noted that while calibration was in general performed shortly after collection, the queuing time before collection was long. Of the 7,039 equipment items:

(a)   2,877 (40.9%) had queuing time not longer than 15 working days; and

(b)   4,162 (59.1%) had queuing time longer than 15 working days, including 892 (12.7%) which had queuing time longer than 90 working days (averaging 166 working days). The longest queuing time was 827 working days.

Table 10

Queuing time for calibration
(2015 to 2020)

Queuing time (Working day)	No. of equipment items		
≤ 15		2,877 (40.9%)	
16 to 90		3,270 (46.4%)	
91 to 180		622 (8.9%)	
181 to 270	892 (12.7%)	192 (2.7%)	4,162 (59.1%)
271 to 364		57 (0.8%)	
≥ 365 (Note)		21 (0.3%)	
Total		7,039 (100.0%)	

Source: Audit analysis of ITC records

Note: The longest queuing time was 827 working days (i.e. 3.3 years).

3.26   Upon enquiry, ITC informed Audit in March 2021 that:

(a)   of the 4,162 equipment items with queuing time longer than 15 working days (see para. 3.25(b)), 1,683 (40.4%) were requests for calibration from B/Ds. These items were mostly general-use equipment items which required lower precision (e.g. liquid-in-glass thermometers). SCL would give higher priority to calibration of high-grade equipment items of private enterprises, which usually required higher precision. For the remaining 2,479 equipment items received from private enterprises, 2,216 (89.4%) had queuing time not longer than 90 working days and only 5 (0.2%) had queuing time longer than 270 working days, with the longest queuing time of 293 working days. Some of the equipment items received from private enterprises with queuing time longer than 90 working days were submitted by public utility companies which tend to confirm orders for a large batch of equipment at the same time and submit the equipment one by one

according to their internal calibration schedule. Therefore, the relatively long queuing time for these items was not caused by SCL; and

(b)   the general queuing time of 15 working days was set nearly 20 years ago. In view of the substantial increase in the number of calibration jobs and SCL's capacity, SCL would conduct a review on this with a view to prioritising its calibration jobs and setting different queuing times for different calibration jobs accordingly.

3.27   Audit considers that ITC needs to closely monitor the queuing time for SCL's calibration service and take necessary actions to address the issue of long queuing time.

Audit recommendations

3.28   **Audit has** *recommended* **that the Commissioner for Innovation and Technology should**:

(a)   **complete the implementation of the recommendation of GLD on inventory management as soon as practicable, and consult GLD if ITC encounters difficulties in implementing GLD's recommendation;**

(b)   **conduct inventory checks on inventory items according to the requirements stipulated in SPRs and take measures to ensure the accuracy of inventory records;**

(c)   **properly assign calibration requirement to SCL's equipment and take measures to ensure that the equipment is calibrated in a timely manner according to the planned schedule; and**

(d)   **closely monitor the queuing time for SCL's calibration service and take necessary actions to address the issue of long queuing time.**

Response from the Government

3.29   The Commissioner for Innovation and Technology agrees with the audit recommendations. She has said that:

(a)   ITC has expedited the ongoing inventory check for all inventory items kept in the Quality Services Division in accordance with the requirements of SPRs and will complete the inventory check by the second quarter of 2021;

(b)   ITC will review the calibration requirement of SCL's equipment and assign appropriate calibration status to ensure that the equipment is calibrated in a timely manner; and

(c)   ITC will review the queuing time for SCL's calibration service and take appropriate action to address the issue of long queuing time of certain lower grade equipment items.

PART 4: SUPPORT FOR HONG KONG COUNCIL FOR TESTING AND CERTIFICATION

4.1   This PART examines the support for HKCTC provided by ITC, focusing on the following areas:

   (a)   council meetings (paras. 4.5 to 4.17); and

   (b)   educational and promotional activities (paras. 4.18 to 4.31).

Background

4.2   HKCTC was established by the Government in September 2009 as a non-statutory body (see para. 1.8) to advise the Government on:

   (a)   the overall development strategy of the T&C industry;

   (b)   new business opportunities worth exploring for the industry, having regard to latest developments in the Mainland and overseas markets; and

   (c)   measures needed to raise the professional standing and community awareness of the industry.

4.3   HKCTC promotes the development of the T&C industry, with a vision to develop Hong Kong into a T&C hub in the region by reinforcing the branding of "Tested in Hong Kong, Certified in Hong Kong". The roles of HKCTC are:

   (a)   acting as a focal point of contact among all stakeholders, including the T&C industry itself, the related industries, providers of supporting services, etc.;

   (b)   assisting the industry to explore new business opportunities;

   (c)   coordinating effort by the industry to best dovetail Government policy objectives;

(d)   promoting acceptance of Hong Kong's testing or inspection reports and certificates by Mainland or overseas governments; and

(e)   enhancing manpower development and professionalism in the industry.

4.4   The Chairman and members of HKCTC, who are appointed by CE, comprise practitioners from the T&C sector, business sector, professional organisations (collectively referred to as "non-official members") and representatives of public bodies and government departments (collectively referred to as "official members" — Note 13). ITC has set up a team to support HKCTC and serve as its executive arm and secretariat.

Council meetings

Need to improve attendance of some non-official members

4.5   In the period from 2016 to 2020, 14 council meetings were held (Note 14). While the overall attendance rate for each year during the period ranged from 75% to 85%, the attendance rate of non-official members was lower, ranging from 67% to 80% (see Table 11).

Note 13: *As at 31 December 2020, the official members of HKCTC comprised the following officials (or their representatives): (a) Executive Director of the Hong Kong Productivity Council; (b) Executive Director of the Hong Kong Trade Development Council; (c) Executive Director of the Vocational Training Council; (d) the Government Chemist; and (e) the Commissioner for Innovation and Technology.*

Note 14: *In the period from 2016 to 2019, 12 council meetings were held (i.e. three meetings per year). In 2020, only 2 council meetings were held (through video conferencing) due to the outbreak of COVID-19.*

Table 11

**Attendance rates of council meetings
(2016 to 2020)**

Year	Attendance rate		
	Official member	Non-official member	Overall
2016	100%	75%	81%
2017	100%	67%	75%
2018	100%	80%	85%
2019	93%	71%	76%
2020	100%	78%	83%

Source: Audit analysis of HKCTC records

4.6   Audit analysed the attendance records of the council meetings held in the period from 2016 to 2019 (Note 15) (see Table 12) and noted that:

(a)   in each year, a significant percentage (12% to 35%) of the non-official members did not attend any council meetings or only attended one of the three council meetings held; and

(b)   in 3 of the 4 years, less than half (38% to 47%) of the non-official members attended all the three council meetings held. It was only in 2018 that more than half (53%) of the non-official members attended all the three council meetings held.

Note 15:   *The attendance rate for 2020 was excluded from this analysis as only two council meetings were conducted through video conferencing due to the outbreak of COVID-19.*

Table 12

Attendance of non-official members at council meetings
(2016 to 2019)

No. of meetings attended	No. of members			
	2016	**2017**	**2018**	**2019**
0 or 1	2 (12%)	5 (31%)	2 (12%)	6 (35%)
2	8 (50%)	5 (31%)	6 (35%)	3 (18%)
3	6 (38%)	6 (38%)	9 (53%)	8 (47%)
Total	16 (100%)	16 (100%)	17 (100%)	17 (100%)

Source: Audit analysis of HKCTC records

Remarks: The attendance rate for 2020 was excluded from this analysis as only two council meetings were conducted (through video conferencing) due to the outbreak of COVID-19.

4.7   Audit considers that ITC needs to step up efforts to encourage and facilitate non-official members' attendance at council meetings. For instance, the Secretariat of HKCTC may remind members of the importance of attending meetings more frequently and continue to arrange video conferencing for members who have difficulties in attending meetings in person, and arrange meeting dates convenient to members as far as possible.

Need to improve declaration of interests in council meetings

4.8   According to the guidelines promulgated by the Secretary for Home Affairs for declaration of interests by members of advisory and statutory bodies, there are generally two systems for declaration of interests:

(a)   *One-tier reporting system.* Under this system, when a member perceives a potential conflict of interest in a matter placed before the board or committee, he/she should make a full disclosure of his/her interest; and

(b)   ***Two-tier reporting system.***   Under this system, members should disclose their general pecuniary interests on appointment to the boards and committees and annually thereafter, in addition to the report of conflicts of interest as and when they arise.

4.9   HKCTC has adopted the one-tier reporting system (i.e. disclosing potential conflicts of interest when they arise).   Under this system:

(a)   any interest likely to lead an objective observer to believe that member's advice might have been motivated by personal interest shall be disclosed; and

(b)   when a potential conflict of interest is disclosed, the Chairman (or committee) should decide whether the member disclosing an interest may speak or vote on the matter, might remain in the meeting as an observer, or should withdraw from the meeting.

According to ITC, before the first meeting of each two-year term of HKCTC, a copy of the "Declaration of Interest by Members of the Public Sector Advisory and Statutory Bodies – Guidelines for One-Tier Reporting System" was circulated to members.   During the briefings for new members, the reporting system was introduced to them.   At the first meeting of each term of HKCTC, all members were reminded about the need to disclose interest, and the Guidelines was tabled.

4.10   Audit noted that there were cases of potential conflicts of interests not disclosed by members in council meetings of HKCTC.   Each year in the period from 2016-17 to 2020-21, the annual work plan of HKCTC submitted to the council for endorsement included the Local Exhibition Programme (LEP) and the Mainland and Overseas Exhibition Programme (MOEP).   Under these two programmes, HKCTC set up booths at trade shows in Hong Kong, Mainland and overseas to promote Hong Kong's T&C services.   The rental and production costs of the booths were paid by

HKCTC and eligible accredited CABs (Note 16) were invited to apply to use the booths free of charge to reach out to potential users of their services.

4.11   As its role is to facilitate the development of the T&C industry, HKCTC's members include leaders and active practitioners of the industry. In the period from 2016 to 2020, 50% to 71% of the non-official council members were associated with CABs in Hong Kong (i.e. being the senior management of the CAB). These CABs were potential participants of LEP and MOEP.   However, Audit noted that no declarations of interests had been made by the members concerned when the work plans were discussed and endorsed in council meetings. In the period from 2016-17 to 2019-20, 11% to 50% of the participants of the exhibition programmes were CABs associated with council members (see Table 13).

Note 16:   *To be eligible for participating in the exhibition programmes, the CABs should: (a) be providing T&C services in Hong Kong; (b) be accredited by HKAS or other accreditation bodies having mutual/multilateral recognition arrangement with HKAS for services provided in Hong Kong relevant to the respective exhibition; and (c) have the intention to obtain business from the respective exhibition and deliver the services in Hong Kong.*

Table 13

**Number of participants of exhibition programmes
associated with council members
(2016-17 to 2019-20)**

Status	2016-17	2017-18	2018-19	2019-20
	No. of participants			
Associated with council member(s) (Note 1)	3 (50%)	3 (33%)	3 (33%)	1 (11%) (Note 2)
Not associated with council member(s)	3 (50%)	6 (67%)	6 (67%)	8 (89%)
Total	6 (100%)	9 (100%)	9 (100%)	9 (100%)

Source: Audit analysis of HKCTC records

*Note 1:   For each case, the council member concerned was the senior management of the
participant.*

*Note 2:   There were another two CABs which were associated with two council members.
However, the two council members concerned were absent from the council
meeting in which the 2019-20 work plan was endorsed. Therefore, the two CABs
were not included in this analysis.*

4.12   Audit considers that ITC needs to strengthen measures to ensure that
potential conflicts of interest of members are declared in council meetings.

Need to issue draft minutes of council meetings in a timely manner

4.13   It is important that the draft minutes of council meetings are issued to
members to seek their feedback as soon as practicable after the meetings. This will
enable members to comment on the minutes and suggest amendments while their
memory of the meeting is still fresh. HKCTC has not issued any guidelines on the
time limit for issuing draft minutes of council meetings to members.

4.14   Audit examined the draft minutes of the 14 council meetings held in the period from 2016 to 2020 and noted that the Secretariat of HKCTC took 43 to 90 days (averaging 66 days) to issue the draft meeting minutes to members.

4.15   Audit considers that ITC needs to take measures to ensure that the draft minutes of council meetings are issued to members for comments as soon as possible.

Audit recommendations

4.16   **Audit has *recommended* that the Commissioner for Innovation and Technology should:**

(a)   **step up efforts to encourage and facilitate non-official members' attendance at council meetings;**

(b)   **strengthen measures to ensure that potential conflicts of interest of members are declared in council meetings; and**

(c)   **take measures to ensure that the draft minutes of council meetings are issued to members for comments as soon as possible.**

Response from the Government

4.17   The Commissioner for Innovation and Technology agrees with the audit recommendations. She has said that:

(a)   facilitation such as video conference will continue to be provided for conducting meetings and meeting reminders would be issued to members more frequently;

(b)   while invitation to participating in LEP and MOEP has been open to all eligible CABs, council members will be reminded more frequently to declare potential conflict of interests at council meetings; and

(c)   ITC will also shorten the time for preparing draft minutes for council meetings.

Educational and promotional activities

4.18   To maintain a workforce of professionals with high integrity and technical expertise for Hong Kong's T&C industry, HKCTC has taken measures to attract new blood to the industry and enhance the capabilities of industry practitioners through various means of education and training. HKCTC has also taken measures to promote services of the T&C industry to explore further business opportunities for the T&C industry.

Need to step up efforts to promote the teaching kit launched

4.19   In June 2016, HKCTC launched a teaching kit for senior secondary chemistry teachers, namely "Teaching Kit on Chemical Testing for New Senior Secondary Curriculum". The teaching kit introduced basic chemical testing concepts to arouse students' interest in testing, and to help apprise students of the value of T&C. The total cost of developing and launching the teaching kit was $266,200.

4.20   The teaching kit includes the Teachers' Guide, the Student Laboratory Manual and six experiment introduction videos in both English and Chinese. The teaching kit is available for download from:

(a)   HKCTC's website;

(b)   the One-stop Portal for Learning and Teaching Resources on the website of the Hong Kong Education City (Note 17); and

(c)   the Education Bureau's website (Note 18).

Note 17:   *Hong Kong Education City was established in 2000 with the support of the Quality Education Fund. It was incorporated in 2002 to become a wholly-owned company of the Government.*

Note 18:   *According to the Education Bureau, it had no role in the development of the teaching kit. Upon ITC's request, it helped promote the teaching kit by providing links to the kit.*

4.21   In 2017, HKCTC conducted a survey to collect the views of chemistry teachers on the teaching kit. The survey revealed that of the 75 respondents:

(a)   51 (68%) had not heard about the teaching kit;

(b)   68 (91%) had never used the teaching kit in class or school activities; and

(c)   70 (93%) did not know that the teaching kit was available on the One-stop Portal for Learning and Teaching Resources (see para. 4.20(b)).

4.22   According to ITC, HKCTC organised a number of laboratory workshops for senior secondary students in the period from 2018 to 2020. Participating students were given opportunities to conduct experiments of the teaching kit in these workshops. To facilitate schools to conduct the experiments in the teaching kit, relevant content of the teaching kit was updated in 2019 to include a colorimetric measurement method using a new free mobile application. In addition to this teaching kit, HKCTC also planned to develop and launch another set of teaching materials for junior secondary students by the end of 2021.

4.23   Audit considers that ITC needs to step up efforts, seeking assistance from the Education Bureau if necessary, to promote the teaching kit on chemical testing to secondary schools with a view to arousing students' interest in testing and attracting new blood to the T&C industry.

Need to enhance attendance of seminars and workshops

4.24   In the period from 2015 to 2020, HKCTC organised 48 seminars and workshops for T&C practitioners (see an example in Photograph 3) to keep them abreast of the latest industry developments. The seminars and workshops were provided to participants free of charge. The total cost for organising the 48 seminars and workshops amounted to $6.1 million.

Photograph 3

A seminar organised by HKCTC

Source: HKCTC records

4.25   Audit reviewed the attendance records of the 48 seminars and workshops organised in the period from 2015 to 2020 and noted that a significant number of enrolled participants did not attend the seminars and workshops (i.e. "no-shows"):

(a)   the percentage of no-shows ranged from 15.7% to 22%; and

(b)   of the 11,053 enrolled participants, only 8,969 (81.1%) attended the seminars and workshops.   The total number of no-shows was 2,084 (18.9%) (see Table 14).

Table 14

**Percentage of no-shows in seminars and workshops
(2015 to 2020)**

Year	Number of participants enrolled (a)	Number of participants attended (b)	Number of no-shows (c)=(a)-(b)	Percentage of no-shows (d)=(c)÷(a)×100%
2015	2,422	2,042	380	15.7%
2016	2,353	1,933	420	17.8%
2017	2,005	1,563	442	22.0%
2018	1,629	1,271	358	22.0%
2019	1,986	1,638	348	17.5%
2020 (Note)	658	522	136	20.7%
Overall	11,053	8,969	2,084	18.9%

Source: *Audit analysis of HKCTC records*

Note: *According to ITC, the number of participants in 2020 was affected by the outbreak of COVID-19.*

4.26   Audit considers that ITC needs to explore measures to encourage the enrolled participants to attend the seminars and workshops organised for T&C practitioners and reduce the no-show rate as far as possible.

Need to encourage participation in exhibition programmes

4.27   HKCTC has launched two exhibition programmes, namely LEP and MOEP (see para. 4.10). Under the two programmes, HKCTC sets up booths at major trade shows in Hong Kong, Mainland and overseas to promote Hong Kong's T&C services (see an example in Photograph 4). As mentioned in paragraph 4.10, HKCTC bears the booth rental, design and production cost, and coordinates the logistics arrangements, whereas the CABs deploy their staff at the booths to assist in promoting the strengths of Hong Kong's T&C industry.

Photograph 4

A booth set up by HKCTC in a trade show in Mainland
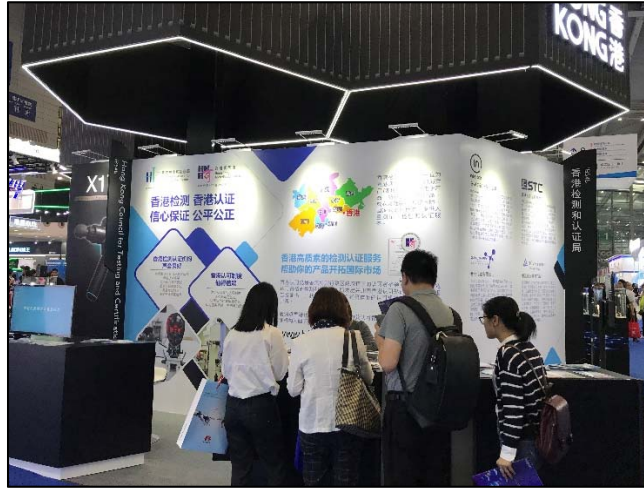
Source: HKCTC records

4.28   In the period from 2016-17 to 2019-20, HKCTC participated in 10 local trade shows and 8 Mainland and overseas trade shows under LEP and MOEP, with a total cost of $1.5 million. The duration of each trade show was usually three to six days. Each day was divided into half-day timeslots to accommodate more CABs. For each trade show, HKCTC invited over 300 eligible CABs to participate. HKCTC had not set a target number of CABs to participate in the trade shows.

4.29   Audit examination of the participation records of LEP and MOEP for the period from 2016-17 to 2019-20 revealed that the response from the CABs was not enthusiastic. In each trade show, while the Secretariat of HKCTC invited over 300 CABs to participate (see para. 4.28), only a handful (2 to 5) of CABs applied for participation in the trade show. During the period, only 12 CABs participated in one or more trade shows. Audit considers that ITC needs to step up efforts to enhance CABs' interest in the exhibition programmes launched to promote Hong Kong's T&C services and boost their participation.

Audit recommendations

4.30   **Audit has *recommended* that the Commissioner for Innovation and
Technology should:**

(a)   **step up efforts, seeking assistance from the Education Bureau if
necessary, to promote the teaching kit on chemical testing to secondary
schools with a view to arousing students' interest in testing and
attracting new blood to the T&C industry;**

(b)   **explore measures to encourage the enrolled participants to attend the
seminars and workshops organised for T&C practitioners and reduce
the no-show rate as far as possible; and**

(c)   **step up efforts to enhance CABs' interest in the exhibition programmes
launched to promote Hong Kong's T&C services and boost their
participation.**

Response from the Government

4.31   The Commissioner for Innovation and Technology agrees with the audit
recommendations. She has said that ITC will consider ways to further promote the
teaching kit, seminars and workshops as well as exhibition programmes organised by
HKCTC.

PART 5: WAY FORWARD

5.1   This PART examines the way forward on the promotion of conformity assessment services, focusing on the following areas:

(a)   new accreditation services to help fight COVID-19 (paras. 5.2 to 5.9); and

(b)   development of the T&C industry (paras. 5.10 to 5.14).

New accreditation services to help fight COVID-19

Need to step up efforts to promote new accreditation services to help fight COVID-19

5.2   Since the outbreak of COVID-19 in early 2020, the demand for testing services on medical face masks and COVID-19 has increased.

5.3   *Medical face masks test.* In early 2020, the demand for medical face masks surged significantly as a result of the outbreak of COVID-19, which aggravated the acute supply shortage situation in Hong Kong for masks and drove up prices. In response to the demand, many local production lines were set up to produce medical face masks. To help address the imminent shortage of medical face masks as well as to build up some reserve stock, the Government launched the Local Mask Production Subsidy Scheme under the Anti-epidemic Fund. A total of 20 local production lines were subsidised by the Scheme. The producers are required to provide a laboratory report of the masks produced showing compliance with Level 1 standard or above of the American Society for Testing and Materials F2100 from an accredited laboratory. This has created a great demand for testing services of accredited laboratories.

5.4   *COVID-19 viral test.* Conducting COVID-19 viral tests is a major measure adopted by the Government to prevent the entry and spread of COVID-19 in Hong Kong:

(a)   *Inbound travellers.* All travellers arriving Hong Kong via the Hong Kong International Airport and all travellers who have been to specified areas in

Mainland in the past 14 days arriving Hong Kong via land boundary control points are required to be tested for COVID-19;

(b) *Universal Community Testing Programme.* In September 2020, members of the public at the age of six or older could receive, on a voluntary basis, a one-off free virus testing service in centres set up by the Government. The testing service was performed by contracted testing institutions in the private sector; and

(c) *Community Testing Programme.* Since mid-November 2020, the Government has set up community testing centres in Hong Kong to provide self-paid COVID-19 viral testing services to the public. The testing service is performed by contracted testing institutions in the private sector and the fee for each test is $240. The community testing centres also provide free COVID-19 viral testing services for targeted groups (e.g. employees of residential care homes for the elderly).

In the period from 1 January 2020 to 23 February 2021, Hong Kong performed more than 8.6 million viral tests for COVID-19, of which 60% were conducted by testing institutions in the private sector (see Table 15).

Table 15

**Number of viral tests for COVID-19 in Hong Kong
(1 January 2020 to 23 February 2021)**

Organisation performing testing	No. of testing
Department of Health and Hospital Authority (Note)	3,469,393 (40%)
Testing institutions in the private sector	5,132,484 (60%)
Total	8,601,877 (100%)

Source: *Audit analysis of information on the Government's COVID-19 thematic website (www.coronavirus.gov.hk)*

Note: *Some of the tests had been outsourced to testing institutions in the private sector.*

5.5   Since April 2020, in response to the strong demand for testing services related to COVID-19, HKAS has launched two new accreditation services under HOKLAS:

(a)   ***Medical face masks.*** Laboratories performing physical and microbiological tests for medical face mask can apply for accreditation; and

(b)   ***COVID-19.***   Medical laboratories performing COVID-19 reverse transcription-polymerase chain reaction (RT-PCR) testing can apply for accreditation.

5.6   Audit noted that up to 28 February 2021:

(a)   only two accreditation applications had been received from CABs for medical face masks, and no accreditation had been granted; and

(b)   only 5 (22%) of the 23 local COVID-19 RT-PCR testing institutions in the private sector recognised by the Government had applied and obtained HKAS

accreditation for COVID-19 RT-PCR testing. According to ITC, HKAS was processing the applications for accreditation from another 11 testing institutions and some testing institutions had already been accredited by overseas accreditation bodies.

5.7   Audit considers that ITC needs to step up efforts to promote HKAS accreditation services for the testing of medical face masks and COVID-19.

Audit recommendation

5.8   **Audit has *recommended* that the Commissioner for Innovation and Technology should step up efforts to promote HKAS accreditation services for the testing of medical face masks and COVID-19.**

Response from the Government

5.9   The Commissioner for Innovation and Technology agrees with the audit recommendation. She has said that ITC will further promote HKAS accreditation services for the testing of medical face masks and COVID-19 to laboratories.

Development of the testing and certification industry

Need to devise measures to facilitate further development of the T&C industry

5.10   As mentioned in paragraph 1.7, TFEC has identified T&C as one of the six economic areas where Hong Kong enjoys clear advantages and has good potential for further development and recommended the Government to establish HKCTC.

5.11   Upon the establishment of HKCTC in September 2009, CE tasked HKCTC to formulate a three-year market-oriented development plan for the T&C industry. In March 2010, HKCTC submitted a report to CE and made 26 recommendations to enhance the competitiveness of the T&C industry. In March 2013, HKCTC completed a review of the implementation progress of the recommendations made in 2010. According to the report, all recommendations made in 2010 had been implemented.

The 2013 report made further recommendations to support the development of the industry. Major recommendations made in 2013 included:

(a)   ITC to continue to assist the T&C industry in attracting talent by cooperating with universities, the Vocational Training Council and the industry;

(b)   HKAS and the Vocational Training Council to continue to work with the industry in enhancing professionalism of practitioners;

(c)   ITC to strengthen promotion of the Innovation and Technology Fund and the Research and Development Cash Rebate Scheme to the T&C industry;

(d)   PSIB to strengthen promotion of its services to the T&C industry; and

(e)   the Government to continue to take into account the needs of the T&C industry in future land use planning and provide the industry with assistance where appropriate.

5.12   Since 2013, there have been developments pertinent to the T&C industry. For example:

(a)   in September 2017, February 2019 and May 2020, implementation guides for updated versions of the CEPA Agreement on Trade in Services were promulgated. Currently, testing organisations in Hong Kong may cooperate with designated Mainland certification bodies to undertake testing for products requiring China Compulsory Certification (CCC) (Note 19); and

(b)   in February 2019, the Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area was promulgated. The Development Plan supports enterprises in the Greater Bay Area to use services of Hong Kong including T&C services.

Note 19:   *CCC is a mandatory product certification system to ensure that the quality and safety of products marketed in China are up to domestic standards. CCC mark is required for both Chinese manufactured and foreign imported goods listed on the CCC catalogue which covers 17 product types.*

Way forward

Audit considers that ITC needs to, in collaboration with the Innovation and Technology Bureau and taking on board the observations and recommendations in this Audit Report, continue to engage HKCTC and other stakeholders in the T&C industry with a view to devising appropriate measures to facilitate the industry in grasping new opportunities for development.

Audit recommendation

5.13   **Audit has *recommended* that the Commissioner for Innovation and Technology should, in collaboration with the Innovation and Technology Bureau and taking on board the observations and recommendations in this Audit Report, continue to engage HKCTC and other stakeholders in the T&C industry with a view to devising appropriate measures to facilitate the industry in grasping new opportunities for development.**

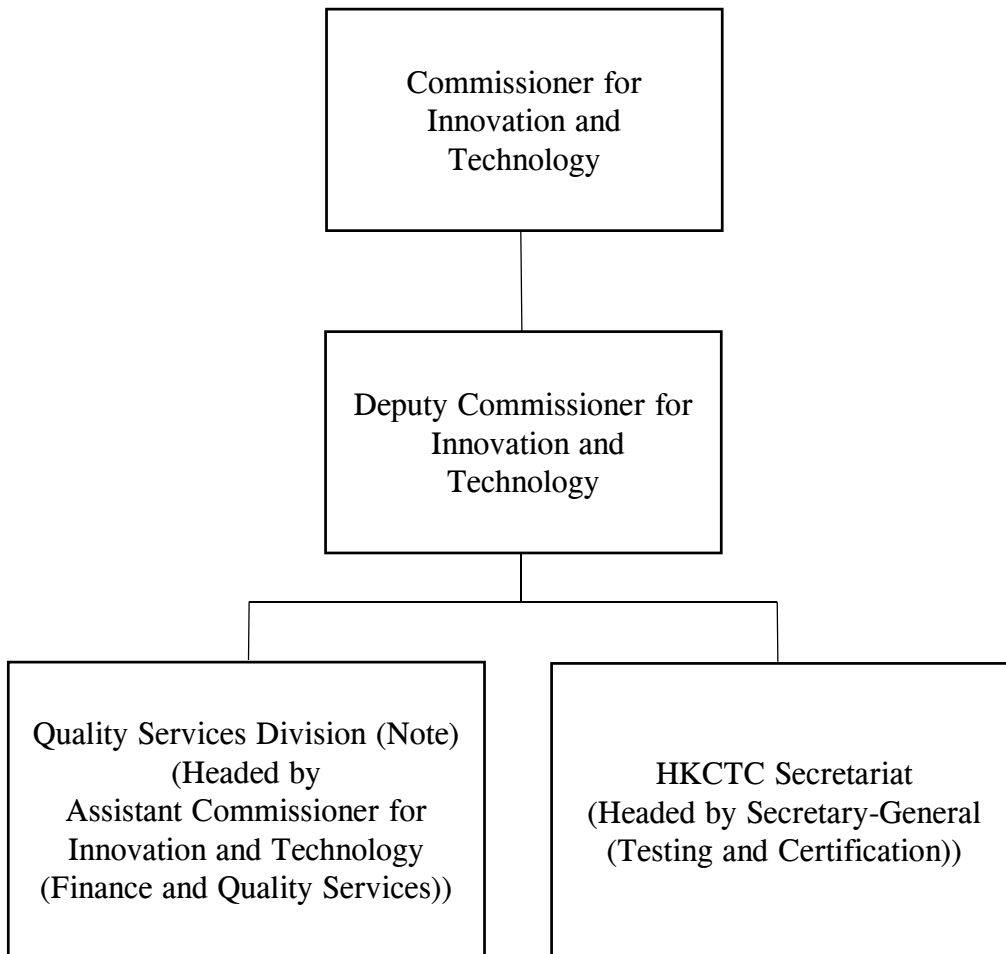## Response from the Government

5.14   The Commissioner for Innovation and Technology agrees with the audit recommendation. She has said that ITC will continue to work with HKCTC and other stakeholders to facilitate the development of the T&C sector.

**Innovation and Technology Commission:
Organisation chart (extract)
(31 December 2020)**

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┌─────────────────────┐
│   Commissioner for  │
│   Innovation and    │
│     Technology      │
└─────────────────────┘
           │
┌─────────────────────┐
│ Deputy Commissioner │
│  for Innovation and │
│     Technology      │
└─────────────────────┘
           │
     ┌─────┴──────────────────────┐
┌─────────────────────┐   ┌─────────────────────┐
│ Quality Services    │   │                     │
│ Division (Note)     │   │  HKCTC Secretariat  │
│ (Headed by          │   │ (Headed by          │
│ Assistant           │   │ Secretary-General   │
│ Commissioner for    │   │ (Testing and        │
│ Innovation and      │   │ Certification))     │
│ Technology          │   │                     │
│ (Finance and        │   │                     │
│ Quality Services))  │   │                     │
└─────────────────────┘   └─────────────────────┘
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Source: *Audit analysis of ITC records*

Note: *The Quality Services Division is responsible for operating HKAS, PSIB and SCL.*

Accreditation programmes of Hong Kong Accreditation Service
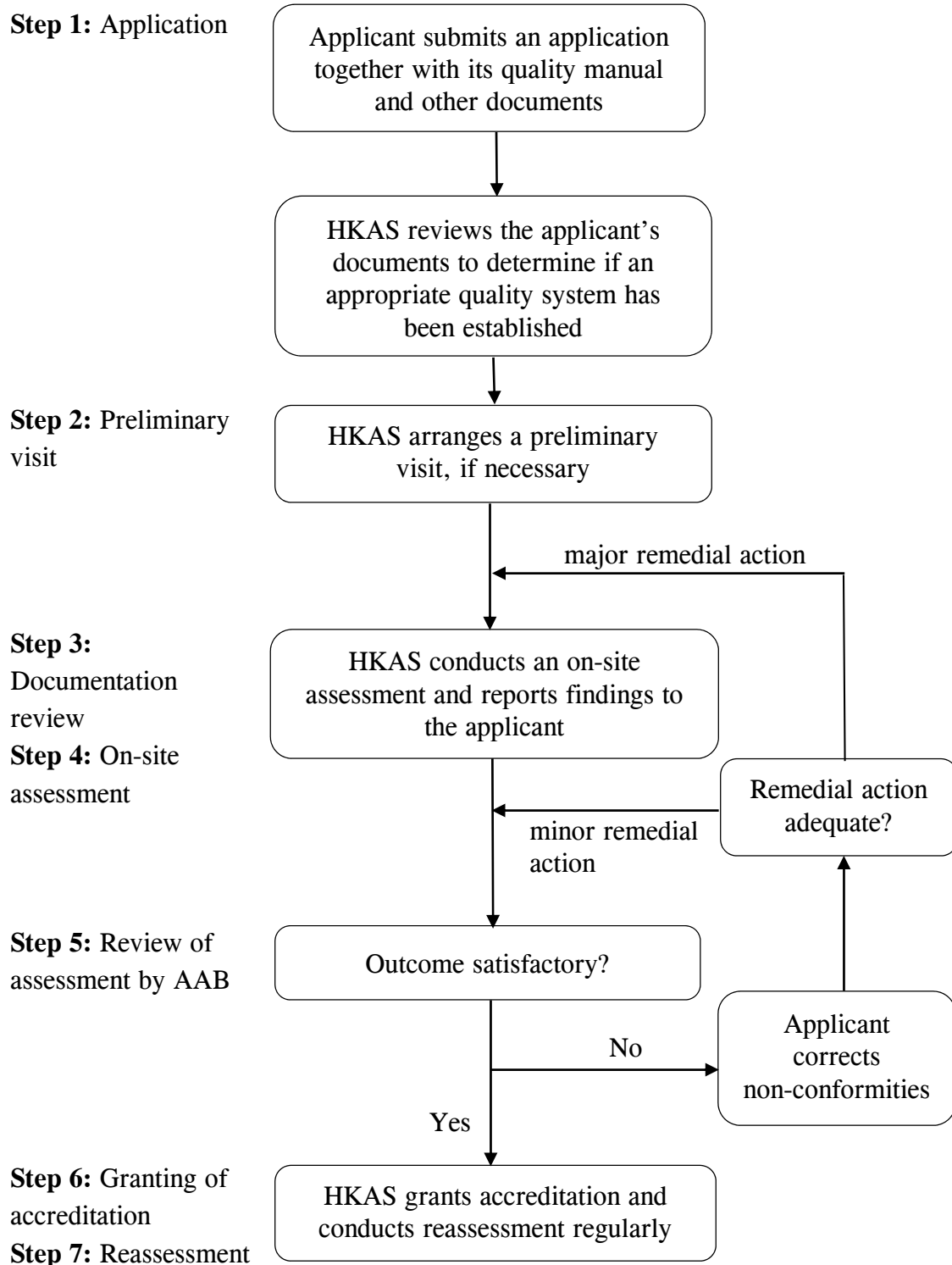## (31 December 2020)

(a) HOKLAS	
1.	Calibration service
2.	Chemical testing
3.	Chinese medicine
4.	Construction materials
5.	Electrical and electronic product
6.	Environmental testing
7.	Food
8.	Forensic testing
9.	Medical testing
10.	Pharmaceutical products
11.	Physical and mechanical testing
12.	Proficiency testing providers
13.	Reference material producers
14.	Testing required by the China Compulsory Certification System
15.	Textiles and garments
16.	Toys and children's products
17.	Veterinary testing
18.	Other services (Note)
(b) HKCAS	
1.	Energy management system certification
2.	Environmental management system certification
3.	Food safety management system certification
4.	Greenhouse gas validation and verification
5.	Information security management system certification
6.	Occupational health and safety management system certification
7.	Product certification
8.	Quality management system
9.	Residential care homes (elderly persons) service providers' management system certification

(c) HKIAS	
1.	Construction products
2.	Consumer products
3.	Indoor air quality inspection
4.	Scene of crime investigation

Source: *Audit analysis of ITC records*

Note: *Other services included: (a) cigarette testing; (b) cosmetics and sterile products (microbiological tests); (c) gas appliances testing; (d) medical face mask; (e) petroleum products; and (f) sound measurement.*

Accreditation procedures of Hong Kong Accreditation Service
(31 December 2020)

Step 1: Application

> Applicant submits an application together with its quality manual and other documents

> HKAS reviews the applicant's documents to determine if an appropriate quality system has been established

Step 2: Preliminary visit

> HKAS arranges a preliminary visit, if necessary

major remedial action

Step 3: Documentation review

Step 4: On-site assessment

> HKAS conducts an on-site assessment and reports findings to the applicant

> Remedial action adequate?

minor remedial action

Step 5: Review of assessment by AAB

> Outcome satisfactory?

No

> Applicant corrects non-conformities

Yes

Step 6: Granting of accreditation

Step 7: Reassessment

> HKAS grants accreditation and conducts reassessment regularly

Source: Audit analysis of ITC records

Acronyms and abbreviations

AAB	Accreditation Advisory Board
Audit	Audit Commission
B/Ds	Bureaux/departments
CAB	Conformity assessment body
CCC	China Compulsory Certification
CE	Chief Executive of the Hong Kong Special Administrative Region
CEPA	The Mainland and Hong Kong Closer Economic Partnership Arrangement
COR	Controlling Officer's Report
GLD	Government Logistics Department
HKAS	Hong Kong Accreditation Service
HKCAS	Hong Kong Certification Body Accreditation Scheme
HKCTC	Hong Kong Council for Testing and Certification
HKIAS	Hong Kong Inspection Body Accreditation Scheme
HOKLAS	Hong Kong Laboratory Accreditation Scheme
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
ITC	Innovation and Technology Commission
LEP	Local Exhibition Programme
MOEP	Mainland and Overseas Exhibition Programme
PSIB	Product Standards Information Bureau
PSRC	Product Standards Resource Centre
RT-PCR	Reverse transcription-polymerase chain reaction
SCL	Standards and Calibration Laboratory
SI	International System of Units
SPRs	Stores and Procurement Regulations
T&C	Testing and certification
TFEC	Task Force on Economic Challenges