航空交通工程及標準
Air Traffic Engineering and Standards

航空交通工程及標準部負責設計、規劃、統籌和提供航空交通管制（空管）系統、雷達、導航儀器和通訊設備，並監管香港空中航行服務（包括調查航空事故），以及簽發航空交通管制員執照和相關級別。

The Air Traffic Engineering and Standards Division (AESD) is responsible for the design, planning, coordination, and provision of air traffic control (ATC) systems, radars, navigational aids, communication facilities, regulating Hong Kong air navigation services including conducting incident investigation, and issuing air traffic controller licences and the associated ATC ratings.

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民航處總部

年內，航空交通工程及標準部繼續全力以赴，按時完成民航處總部工程項目，務使香港的民航業得以長期持續發展。總部的資訊和通訊科技設施，包括應急伺服器、自動化用戶電腦數據備份、網絡儲存設施、電腦網絡和伺服器、室內外無線通訊設施等，已於二零一二年十月如期安裝和整合。民航處各分部隨後於二零一二年年底陸續遷入新總部，為航空業界和公眾提供一站式服務。我們也致力推動環保，提供由本部資訊科技管理組特別研發的電子工具，鼓勵節約用紙，各項措施喜見成效。

更換空管系統

現有各個空管系統，由香港國際機場於一九九八年遷到赤鱲角使用至今。為維持穩定可靠和高水準的空管系統，以支援安全和高效率的航空交通服務，本處正在陸續更換空管系統。相關的系統安裝與驗收工作經已展開。待新系統完成測試，並向相關人員提供充分的技術和操作培訓後，新空管中心預計於二零一五年啟用。

CAD Headquarters

During the year, AESD continued its efforts in the timely completion of the CAD Headquarters project, with the objective of achieving long term sustainable aviation development in Hong Kong. Installation and integration of the information and communications technology (ICT) facilities of the Headquarters were completed in October 2012 as scheduled. The facilities included contingency servers, automated user computer data backup, network-based storage facilities, computer network and servers, indoor and outdoor Wi-Fi facilities, etc. Various CAD functional divisions were relocated to the new CAD Headquarters in end 2012, providing one-stop service to the aviation community and the general public. Initiatives for migration towards a greener office were implemented with encouraging results through the promotion of paper-saving work habits and customised electronic tools developed by the division's Information Technology Management Unit (ITMU).

Replacement of ATC Systems

To maintain a high-standard, stable and reliable ATC system to support safe and efficient air traffic services, work is in progress to replace the existing ATC systems which have been in use since the relocation of Hong Kong International Airport to Chek Lap Kok in 1998. Equipment installation and acceptance tests of the new ATC systems has commenced. Upon completion of system tests, as well as adequate technical and operational training for relevant staff, the new Air Traffic Control Centre (ATCC) is expected to commence operation in 2015.

民航處總部航空交通管制中心新安裝的航空交通管理系統。
A new Air Traffic Management System is installed at CAD Headquarters' ATCC.

在航空情報管理中心測試新安裝的航空資訊管理系統。
Testing the new Aeronautical Information Management System at the Aeronautical Information Management Centre.
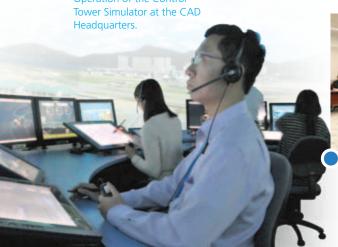
國際民航組織航空系統組塊升級

二零一二年十一月，國際民航組織在第12次空中航行會議上通過航空系統組塊升級計劃，為航空交通管理系統的現代化提供全球統一、環保和具成本效益的架構。民航處於二零一三年二月成立航空系統組塊升級策劃與實施委員會，並得到機場管理局和航空業界支持，策劃在香港實施航空系統組塊升級。在制定用於空管運作的通訊、導航及監察系統的更換策略和時間表時，本部會考慮航空系統組塊升級的要求，並參考《亞太區無縫航空交通管理計劃書》訂明的優先次序。本部現正進行詳細的市場調查，以敲定更換系統的時間表和方法。

持續發展安全管理系統，以支援穩妥的通訊、導航及監察設備和重要的屋宇設施

憑着同事共同努力，本部在二零一二年獲航空交通管理標準組頒發安全管理系統證書。維修服務機構也繼續改善安全管理系統，使維修工作更為安全。此外，本部定期召開檢討會議，有系統地覆檢安全管理系統，務求精益求精。年內，我們致力推動安全意識，並會繼續舉辦安全訓練和推廣活動。

另外，本部於年內已全面評估新空管系統的安全風險，確保系統的整體概念和設計均符合現有安全標準的嚴格要求。

民航處總部塔台模擬機的運作。
Operation of the Control
Tower Simulator at the CAD
Headquarters.

The International Civil Aviation Organization (ICAO) Aviation System Block Upgrades

ICAO endorsed the Aviation System Block Upgrades (ASBU) during the 12th Air Navigation Conference held in November 2012, providing a framework for Air Traffic Management (ATM) systems modernisation in a globally harmonised, environmentally friendly and cost-effective manner. With the support from Airport Authority Hong Kong (AAHK) and the aviation community, CAD established an ASBU Planning and Implementation Committee in February 2013 to steer relevant planning and implementation of ASBU in Hong Kong. The strategies and timeframe for the replacement of Communications, Navigation and Surveillance (CNS) systems for ATC will take into consideration the ASBU requirements and make reference to priorities stipulated under the Seamless ATM Plan for the Asia and Pacific Region. A detailed market survey was being conducted to firm up the timeframe and methodology for the CNS replacement plan.

Ongoing Development of the Safety Management System in Support of Provision of Safe CNS and Critical Building Services

With concerted efforts of colleagues, AESD was awarded the Safety Management System (SMS) Acceptance Certificate by the Air Traffic Management Standards Office in 2012. The maintenance services providers also improved their safety management systems with a view to further enhancing maintenance safety. In addition, we conducted regular review meetings to provide a forum for systematic review so as to achieve continuous improvement in SMS. Throughout the year, AESD maintained its momentum in safety promulgation and would continue to organise safety training and promotion activities.

AESD also completed a comprehensive safety risk assessment review of the new ATC systems during the year to ensure that the overall system concept and design was compliant with the stringent requirements of the established safety standards.

承蒙航空業界支持和參與，航空系統組塊升級策劃與實施委員會，於二零一三年二月召開第一次會議。
With the support and participation from the aviation community, the 1st meeting of the ASBU Planning and Implementation Committee was convened in February 2013.

衛星通訊、導航及監察/航空交通管理系統

為遵從國際民航組織的全球空中航行計劃和航空系統組塊升級計劃,以策劃和實施衛星通訊、導航及監察/航空交通管理系統,本部已開發及使用八個相關系統,進展良好:

(一) 飛前放行指示雙向數據鏈路服務

截至二零一三年三月底,飛前放行指示數據鏈路服務的使用率為76%,使用服務的航空公司則增至68家。預計未來數年會有更多航機使用這項服務,讓空管人員與飛行員的通訊效率進一步提升。

(二) 航空電訊網、航空交通服務訊息處理系統、航空交通服務設施間數據通訊

為配合國際民航組織亞太地區航空電訊網和航空交通服務訊息處理系統實施計劃,香港與澳門之間的航空交通服務訊息處理系統和航空電訊網已投入運作。二零一二至二零一三年,本部與北京和曼谷進行了多項測試,並計劃在二零一四年投入運作。本部已經安排與東京、馬尼拉、台北和其他鄰近地區的航空交通電訊當局進行更多測試,以配合這些地區未來數年的設備更換計劃。

另外,本部先後在二零零七年二月和二零一二年十一月,利用航空固定電訊網與三亞和台北實施航空交通服務設施間數據通訊,以加強航空安全,並提升與毗鄰空管中心通訊的運作效率。

(三) 先進場面活動引導和控制系統

先進場面活動引導和控制系統有助加強監察飛行區內航機和車輛移動的情況。該系統設有衝突和跑道入侵警告功能,可以提高機場的空管安全和效率。本部已經與系統供應商洽購一套測試評估系統,以持續提升先進場面活動引導和控制系統的性能。該系統已於二零一二年四

SATELLITE-BASED CNS/ATM SYSTEMS

To comply with the ICAO Global Air Navigation Plan (GANP) and ASBU for planning and implementing satellite-based CNS/ATM systems, the division made good progress on the development of eight CNS/ATM systems as highlighted below:-

(i) Pre-Departure Clearance Two-way Datalink Service

The utilisation rate of the Pre-Departure Clearance Datalink Service was 76% and the number of participating airlines increased to 68 as at the end of March 2013. It is anticipated that more aircraft will use the service to enhance efficient communication between ATC staff and pilots in the coming years.

(ii) Aeronautical Telecommunication Network, Air Traffic Service Message Handling System and Air Traffic Service Inter-facility Data Communication

In accordance with the ICAO Asia-Pacific Regional Aeronautical Telecommunication Network (ATN) and Air Traffic Service Message Handling System (AMHS) Implementation Plan, the new ATN and AMHS circuit between Hong Kong and Macao was put into operation. Further tests and trials with Beijing and Bangkok were conducted in 2012-13 and planned for operational use in 2014. More tests have been arranged with Tokyo, Manila, Taipei and other adjacent air traffic service authorities to match with their system replacement roadmaps in the coming years.

The Air Traffic Service Inter-facility Data Communication over Aeronautical Fixed Telecommunication Network with Sanya and Taipei was put into operation in February 2007 and November 2012 respectively, enhancing flight safety and operational efficiency in communication with adjacent ATC centres.

(iii) Advanced Surface Movement Guidance and Control System

The Advanced Surface Movement Guidance and Control System (A-SMGCS) has been providing enhanced surveillance of aircraft and vehicle movements on the airfield, with conflict and runway incursion alerting functions available for added ATC safety and efficiency in the airport. For continuous improvement, AESD arranged with the A-SMGCS equipment supplier for the provision of a test and evaluation system, which was commissioned in April

月投入服務，可以加強先進場面活動引導和控制系統的保養支援。鑑於機場環境時有轉變，本部於二零一二年安排了供應商檢測先進場面活動引導和控制系統訊號的可靠度和覆蓋範圍，收集訊號覆蓋情況和性能表現數據，以採取措施提升系統表現。

(四) 廣播式自動相關監察

廣播式自動相關監察地面站系統合約已於二零一三年二月批出。民航處選定八個偏遠地點安裝地面站，監察在香港飛行情報區過境和低空飛行並裝設廣播式自動相關監察機載設備的飛機。在亞太地區空中航行規劃和實施小組第23次會議和民航局局長第49次會議期間，民航處大力推動利用廣播式自動相關監察數據進行安全監察和分析，並倡議共用監察結果，以提高區內的航空安全。民航處又計劃發展一套廣播式自動相關監察數據分析系統，監察香港飛行情報區內裝設了廣播式自動相關監察機載設備的飛機。

(五) 抵港航機排序系統

本部採購抵港航機排序系統，以提升航班準時抵港率，善用空域，並為空管人員提供自動化服務。提升系統功能的工作，包括改善處理復飛程序，配合標準儀表進場程序的改動，以及實行基本RNP 1標準儀表進場程序，已於二零一三年一月完成。

2012 to strengthen the maintenance support service for the equipment. To cater for the on-going changes of the airport environment, the division has engaged the equipment supplier to conduct an integrity and coverage check of the A-SMGCS to collect signal coverage and performance data for implementation of enhancement measures.

(iv) Automatic Dependent Surveillance-Broadcast

The Automatic Dependent Surveillance-Broadcast (ADS-B) ground station system contract was awarded in February 2013. Eight remote sites have been selected for the installation of ADS-B ground stations to provide surveillance for both en-route and low-flying ADS-B equipped aircraft within the Hong Kong Flight Information Region (HKFIR). During the 23rd meeting of the Asia and Pacific Air Navigation Planning and Implementation Regional Group and the 49th Conference of Directors General of Civil Aviation, CAD strongly promoted the use of ADS-B data to perform safety monitoring and analysis, and promulgated the sharing of monitoring results to enhance aviation safety within the region. CAD also outlined its plan to develop a system for ADS-B data analysis to facilitate the monitoring of ADS-B equipped aircraft within the HKFIR.

(v) Arrival Manager System

The Arrival Manager (AMAN) System was procured to help achieve higher on-time arrival rate, more efficient use of airspace and automated service to controllers. Further enhancement of system features, including improvement on handling missed approaches, Standard Terminal Arrival Route (STAR) changes, and implementation of Basic Required Navigation Performance (RNP-1) STAR configuration, were completed in January 2013.

在大帽山雷達站安裝和測試廣播式自動相關監察地面站。
Installation and testing of ADS-B ground stations at Tai Mo Shan Radar Station.

(六) 為國際民航組織新飛行計劃書和航空交通服務訊息格式而設的前置處理器

為符合國際民航組織於二零一二年十一月十五日實施的飛行計劃書和航空交通服務訊息格式新規定，本部已早於二零一一年十月完成為現有的航空資料庫和飛行數據處理系統開發前置處理系統，並於二零一二年三月完成內部測試。與其他空中航行服務機構的測試其後也於二零一二年十月完成。新的飛行計劃書格式已在國際民航組織所訂的期間，即二零一二年十一月十二日至十七日，順利完成過渡並投入運作。

(七) 陸基增強系統

陸基增強系統能支援香港國際機場採用性能導航，以回應全球對善用空域的訴求。該系統可以提高全球衛星導航系統的準確度，使在覆蓋範圍內飛機的進場和着陸程序更為精確。本部於二零一一年完成系統的初步選址研究，並於二零一二年開發一套處理地政總署香港衛星定位參考站網數據的設施，結合香港國際機場全球衛星導航系統監測站收集到的數據，設立全港衛星數據庫，以便通過國際民航組織電離層研究工作組與周邊地區合作，共同研究亞太地區上空的電離層對陸基增強系統性能的影響。

(八) 電子飛行進程單系統

為協助新空管中心和航空交通控制塔順利改以無紙方式運作，本部安排了香港國際機場控制塔人員使用電子飛行進程單系統。年內完成控制塔人員的相關培訓和操作評估後，系統於二零一二年十二月投入運作。

電子飛行進程單系統的工程合約包括提供綜合顯示器，以集中顯示來自多方面的運作資料，方便控制塔人員操作。綜合顯示器的技術測試和運作評估，定於二零一三年進行。

(vi) Front End Processing System for New ICAO Flight Plan and Messages

In order to meet the new ICAO requirements on flight plan and air traffic service messages format by 15 November 2012, AESD's development of two front end processors for the Aeronautical Information Database and the Flight Data Processing System was completed successfully in October 2011. Internal testing was completed in March 2012, and testing with other air navigation service providers (ANSPs) were completed in October 2012. With the Front End Processing System put into operational use, transition to the new flight plan format within the ICAO defined period, i.e. from 12 to 17 November 2012, was successful.

(vii) Ground-Based Augmentation System

Ground-Based Augmentation System (GBAS) supports the implementation of Performance-Based Navigation for addressing global demands on the efficient use of airspace capacity. It augments the accuracy of the Global Navigation Satellite System (GNSS) and supports optimisation of procedures for precision approach and landing operations within its area of coverage. A GBAS siting study was completed in 2011 and a facility was successfully developed in 2012 for processing data captured by the Hong Kong Satellite Positioning Reference Station Network of the Lands Department. Together with the data collected by the GNSS Monitoring Station in HKIA, a territory-wide satellite database was established to enable the collaboration with neighbouring states through the ICAO Ionospheric Studies Task Force for studying ionospheric effect on GBAS performance in the Asia and Pacific regions.

(viii) Electronic Flight Strip System

To facilitate a smooth transition to the electronic flight strip environment in the new ATCC and the ATC Tower, an electronic flight strip system (EFSS) was arranged for operational use by tower controllers at HKIA. Having completed relevant training and operational evaluation, EFSS was put into operation in December 2012.

As part of the EFSS contract, Integrated Display Units (IDU) were provided to concentrate and present operational information from multiple sources to enhance operation of tower controllers. Technical testing and operational evaluation of IDU are scheduled in 2013.

優化通訊、導航及監察和航空交通管理系統的維修安排

為加強空中航行服務，本部採用風險為本模式，改善通訊、導航及監察/航空交通管理系統的現行維修安排。本部聯同維修服務機構檢視現行維修安排，按現有和新系統的設備狀況和性能，改善並實施標準維修程序，務求迅速回應系統維修要求，從而提升系統運作效率和服務質素。年內，本部已把綜合維修計劃和維修措施納入標準維修程序，以涵蓋現有的通訊、導航及監察/航空交通管理系統、機電系統、屋宇設備和電子裝置。

機場協同決策

香港國際機場以至珠江三角洲各個機場，均認同機場協同決策制度有助改善航機進場和續航程序，從而提升機場各方的運作效率。為配合本港發展和推行機場協同決策制度，本部主導開發試行系統，並於二零一二年九月推出試行平台，供機場各方試用。二零一二年年底和二零一三年年初，本部和機場管理局、航空公司、地勤服務公司等參與機構舉行檢討會議，得悉試行結果獲業界讚許和大力支持，為日後其他試行計劃，以及與業界實施互通機場協同決策訊息，奠定良好基礎。

Enhanced Maintenance for CNS and ATM Systems

With a view to strengthening the provision of air navigation services, the division adopts a risk-based approach to enhance the existing maintenance practice for CNS/ATM systems. Current maintenance practices were reviewed with maintenance service providers. Standard maintenance procedures of both existing and new CNS/ATM systems were enhanced for providing faster response to maintenance issues, hence enhancing operational efficiency and service quality based on equipment conditions and system performance. Comprehensive maintenance schemes and maintenance initiatives for the existing CNS/ATM systems, electrical and mechanical systems, building services facilities and electronics installation were adopted as standard procedures within this year.

Airport Collaborative Decision Making

Airport collaborative decision making (A-CDM) is recognised as one of the strategic drivers in HKIA as well as airports in the Pearl River Delta region to enhance flight arrival and turnaround processes and hence operational efficiency of various airport stakeholders. To facilitate the development and implementation of A-CDM in Hong Kong, AESD took the lead in the development of the A-CDM Trial Platform which was successfully launched for trial use by airport stakeholders in September 2012. Review meetings were held with participating organisations including AAHK, airlines and ground handlers in late 2012 and early 2013 with positive feedback and strong support received for further trials/operational use of CDM information.

二零一二年八月，本部同事向機場管理局、航空公司、地勤服務公司等簡報機場協同決策系統試行平台。
AESD staff briefing AAHK, airlines and ground handlers on CDM Trial Platform in August 2012.

航空交通管理標準組

航空交通管理標準組負責確保本港提供的空中航行服務，達到並維持在所訂的最高安全水平。

安全監督工作

為持續監察航空安全，航空交通管理標準組年內為航空交通管理部和航空交通工程及標準部進行了兩次審計和26次安全檢查。審計內容包括查核服務機構有否遵守安全管理系統的規管要求，並重點審查安全政策／目標和促進安全元素的實施成效。檢查範圍包括航空交通管理的運作、程序、培訓和考試、安全管理系統的實施、空管設備／系統、安全事故調查，以及安全建議的跟進行動。檢查人員檢查了多個設施和工作單位，包括空管中心、控制塔、航空情報中心、備用空管中心、備用控制塔、培訓組、雷達模擬機和塔台模擬機。此外，又檢查了空中航行服務的其他領域，例如通訊、導航及監察（包括航空網絡中心）、航空氣象、搜索和救援、空中航行服務程序——航空器運行和航空資訊服務（包括繪製航圖）。

全賴同事群策群力，本部實施的安全管理系統工作於二零一二年順利完成，並獲航空交通管理標準組簽發安全管理系統證書。因應部門的監察要求，負責電子工程維修的服務機構也設置和使用了安全管理系統，確保維修工作安全可靠。通過空中航行服務標準協調會議，航空交通管理標準組和空中航行服務機構定期檢討安全管理的相關事宜，推動安全管理系統持續發展和改進。

航空交通管理標準組的職責之一，是聯同航空交通管理部的調查人員，就所有空管事故進行初步調查，然後再按既定指引，確定調查的形式。

航空交通安全評核委員會每半年召開會議，檢討空管事故和其他安全事故。委員會成員包括飛行標準及適航部、航空交通管理標準組和航

AIR TRAFFIC MANAGEMENT STANDARDS OFFICE (ATMSO)

ATMSO is responsible for ensuring that a high standard of safety is set, achieved and maintained in the provision of air navigation services in Hong Kong.

Safety Oversight Activities

For ongoing safety regulatory surveillance, ATMSO conducted two audits and 26 safety inspections on ATMD and AESD in 2012-13. The audits covered the regulatory compliance of the service providers' SMS with a focus on the effective implementation of safety policy/objectives and safety promotion elements. The inspections included ATM activities in operations, procedures, training, examinations, SMS implementation, ATC equipment/systems, safety occurrences investigations, and follow-up actions arising from safety recommendations. Facilities visited by the inspectors included the ATCC, Control Tower, Aeronautical Information Centre, Backup ATCC and Backup Tower, Training Unit, radar simulator and Tower simulator. Inspections on CNS (including the Aeronautical Network Centre), meteorological information, search and rescue, Procedures for Air Navigation Services–Aircraft Operations and Aeronautical Information Services (including aeronautical charting) domains of air navigation services were also conducted.

Through concerted efforts of colleagues, implementation of AESD SMS was successfully completed in 2012 and the division received an SMS acceptance certificate issued by ATMSO. In compliance with regulatory requirements of the department, the electronics engineering maintenance services provider also developed and implemented its SMS to ensure the safety of maintenance work. Additionally, through the Air Navigation Services Standards Coordination Meeting, ATMSO regularly reviewed ANSP issues pertinent to the implementation of SMS to promote continual development and improvement.

As part of its duties, ATMSO participated in the preliminary investigations of all ATC incidents jointly with ATMD investigators. A decision would then be made as to the form of investigation to be conducted in accordance with established provisions.

Review on ATC incidents and other safety occurrences is conducted half yearly by the Air Traffic Safety Assessment Committee, which comprises representatives from the Flight Standards and Airworthiness Division,

空交通管理部的代表，以及本地主要航空公司和政府飛行服務隊的航空安全代表。航空交通管理標準組繼續監察事故後調查報告所提出的安全建議，跟進執行進展和成效。

年內，航空交通管理標準組積極參與更換空管系統的項目，履行安全監督的職責並提供意見，確保新系統安全過渡。

為客觀和有系統地加強安全監察措施，空中航行服務機構必須訂立安全表現指標和完善的實行計劃，以達到航空交通管理標準組所認可的安全表現目標，並定期向該組提交相關數據，作安全監察之用。

文件編製

航空交通管理標準組定期覆檢和更新現有規管文件，確保內容準確、有效和符合現況。年內共發出兩份有關安全事項和空管執照規定要求的《空中航行服務資料通告》。

空管主任執照

航空交通管理標準組的重要職責之一，是根據《國際民航公約》附件1的標準和《1995年飛航（香港）令》的規定，執行空管主任執照簽發制度。年內，該組共發出136份首次簽發的空管主任執照、空管級別執照和合格證書，另續發了206份空管級別執照和合格證書。

與資訊科技管理組合作開發的電子空管主任執照數據庫於年內啟用，提升了處理空管主任執照程序的效率。該系統將會擴展至與航空交通管理部共用，為申請、處理和簽發空管主任執照、空管級別執照和證書提供一站式服務。

根據《國際民航公約》和《1995年飛航（香港）令》的規定，航空交通管理部獲批准成為認可培訓組織，可為航空交通管制員提供培訓。航空交通管理部舉辦的空管培訓課程，必須依據《國際民航公約》附件1的規定開辦，並須接受航空交通管理標準組監管。

ATMSO, ATMD, flight safety personnel of major local airline operators and the Government Flying Service. ATMSO continued to monitor the progress and effectiveness of post-incident follow-up actions on the recommendations put forward in the investigation reports.

As part of the safety regulatory oversight responsibilities, ATMSO participated actively in the ATC systems replacement project to provide inputs with a view to facilitating the safe transition to the new systems.

To enhance safety monitoring measures with a systematic and objective-based approach, ANSP was required to establish safety performance indicators together with structured action plans to achieve safety performance targets as agreed by ATMSO. Such safety performance measurements were periodically provided to ATMSO for regulatory oversight.

Documentations

ATMSO conducted regular reviews and updates on existing regulatory documents to ensure that they remain accurate, valid and up-to-date. Two Air Navigation Services Information Notices were promulgated in this year on relevant safety issues and ATC licensing requirements.

ATC Personnel Licensing

One of the important functions of ATMSO is to administer the ATC licensing scheme in accordance with the standards in ICAO Annex 1 and the requirements of Air Navigation (Hong Kong) Order 1995. During the report period, ATMSO processed 136 initial awards of ATC Licences, ATC Ratings and Certificates of Competency, as well as 206 renewals of Ratings and Certificates.

With ITMU's support, an electronic ATC Licence Database (e-ATCL) was developed and implemented to enhance the efficiency and effectiveness of the ATC licensing scheme. The e-ATCL would be extended for shared use with ATMD to provide one-stop service for the application, processing and issuing of ATC licences, ratings and certificates.

In accordance with requirements of ICAO and the Air Navigation (Hong Kong) Order 1995, ATMD was recognised as an approved training organisation for conducting training for air traffic controllers. ATC training conducted by ATMD shall be run pursuant to stipulations in ICAO Annex 1 and subject to regulatory oversight of ATMSO.

航空交通工程及標準 Air Traffic Engineering and Standards

航空交通管理標準組舉辦安全文化簡報會，鞏固安全監督和安全管理的概念。
ATMSO conducted a briefing on safety culture to enhance the concept of safety oversight and safety management.

安全推廣工作

為推廣安全訊息，航空交通管理標準組定期為空中航行服務機構和維修服務承辦商的職員，舉辦安全文化和安全管理系統簡報會，以鞏固安全監督和安全管理的概念。

航空交通管理標準組與本處轄下的香港民航訓練中心攜手合作，為本地和區內的航空機構籌辦規管航空交通管理和安全監督的培訓課程。該課程會視乎可用的培訓時段和航空業界的反應，在適當的時機推出。

此外，本組也定期於本處內聯網發布規管資訊和安全管理資料，方便空中航行服務人員查閱。

培訓及發展事務辦公室

培訓及發展事務辦公室負責部門的整體培訓計劃。為了提高培訓計劃的效率，培訓及發展事務辦公室推出了重要措施，包括繪製培訓意念圖，構建推行具效率並以稱職為本的培訓和學習項目，藉此實踐部門的各項培訓措施。此外，我們也制定了發展意念圖，以闡述培育民航處專業職系人員的可行工作流程。

本處多個分部派出代表組成培訓及發展事務委員會，通過會議，一起評估各個倡議的項目，提升策劃和推行培訓工作的成效，栽培各專業職系人員，發展並深化他們在所屬民航專業範疇的能力和知識。

民航處培訓資料庫

民航處開發的培訓資料庫程式，有助記錄各個專業職系人員曾經接受的培訓和設定將來的培訓計劃。其他應用元件，包括「資歷」、「職位調動」、「編制人數和實際人數」，正在編寫之中。

Safety Promotion Activities

For safety promotion, ATMSO conducted periodic briefings to ANSP colleagues and the staff of the maintenance services provider on safety culture and SMS to reinforce safety oversight and safety management concepts.

In association with the department's Civil Aviation Training Centre, ATMSO had also prepared an ATM Regulatory and Safety Oversight Training Course for the local and regional aviation communities. The course would be presented depending on the availability of training slot and general response of the aviation communities.

In addition, regulatory information and safety management materials were published regularly on the intranet for convenient access by all air navigation services staff.

TRAINING AND DEVELOPMENT OFFICE (TDO)

TDO is responsible for planning departmental training as a whole. To enhance the effectiveness of such planning, TDO introduced strategic measures, including the development of a Training Mind Map for effective and competency based training and learning, setting the approach for implementing various CAD training initiatives. Being drawn up in parallel was a Development Mind Map that spelt out the possible work flow for the development of CAD professional grade officers.

Representatives from various CAD divisions are drawn to form the Training and Development Committee. Through meetings of the committee, members evaluate initiatives to enhance the effectiveness in the planning and provision of training to officers of different professional grades with a view to developing and enhancing the competence and knowledge in their respective disciplines in civil aviation.

CAD Training Database

The CAD Training Database Programme has been developed to facilitate the recording of staff training and formulation of future training plans for officers of different professional grades. Additional modules covering qualification, posting and establishment and strength are being developed.

航空教育徑

自二零一三年三月起，培訓及發展事務辦公室接辦在民航處新總部設立的航空教育徑。教育徑的主要目標為提升公眾，尤其是新一代，對航空業發展的興趣。教育徑於二零一三年一月二十八日正式開幕，由民航處處長羅崇文先生聯同國際民航組織秘書長雷蒙·邦亞曼先生主禮。為進一步向青少年推廣航空教育，本處推出相關項目，培訓青年制服團體成員，擔任教育徑義務導賞員。

資訊科技管理

通過妥善實施各項新的資訊科技措施和「電子政府」策略，資訊科技管理組繼續支援各分部的日常運作。年內，資訊科技管理組完成四項大型資訊科技計劃，以加強服務和支援：

（一）發展和推行職務考察數據庫，簡化申領職務考察款項的程序，以及減省處理的人手。

（二）發展和推行流動電子日誌，提供實時的空管消息和適時的預警功能，以盡早糾正可能發生的問題，嚴守航空交通安全標準。

（三）發展和推行流動實時空管資料工具，提供實時的空管資料，協助民航處人員於航空交通意外或事故發生後，迅速反應和決策。

（四）為配合政府的資訊科技政策並符合《無障礙網頁內容指引》2.0標準的要求，資訊科技管理組修改了民航處網站(www.cad.gov.hk)的設計，方便視障或聽障人士獲取民航資訊。

Aviation Education Path

Since March 2013, TDO has been tasked to manage the Aviation Education Path in the new CAD Headquarters. The main objective of the Education Path is to arouse the interest of the general public, in particular the next generation, in aviation developments. The Education Path was officially opened jointly by the Director-General of Civil Aviation, Mr Norman Lo, and the Secretary General of ICAO, Mr Raymond Benjamin, on 28 January 2013. To further promote youth aviation education, a programme has been launched to train up members of youth uniform groups as volunteer tour guides for the Education Path.

IT MANAGEMENT

ITMU continued to support day-to-day operations of various divisions through effective implementation of new IT initiatives and e-Government strategy. During the year, four major IT projects were completed for the betterment of IT service and support:

(i) Development and implementation of the Duty Visit Database, which streamlines workflow in applications for duty visit claims and saves manpower to process the applications.

(ii) Development and implementation of Mobile e-Log, which provides real-time update of ATC events and timely alert for early rectification of potential issues in meeting stringent air traffic safety standards.

(iii) Development and implementation of Mobile Real-time ATC information, a handy tool to assist CAD officers in gaining real-time ATC situation information in mobile manner, allowing quicker response during an air traffic accident or incident.

(iv) In order to comply with the pan-Government IT policy, the departmental website (www.cad.gov.hk) was enhanced to meet the Web Content Accessibility Guidelines 2.0 standard. ITMU designed the revamp of the website to facilitate persons with vision and hearing impairment to gain access to civil aviation related information.