



ICAO

*International Civil Aviation Organization***Twenty Ninth Meeting of the Communications/
Navigation and Surveillance Sub-group (CNS SG/29)
of APANPIRG**

Bangkok, Thailand, 16-20 June 2025

Agenda Item 12: Capacity Building, including Human Factors and Air Traffic Safety Electronics Personnel (ATSEPs) related training**HONG KONG CHINA INITIATIVES IN SUPPORTING THE
ICAO NEXT GENERATION AVIATION PROFESSIONALS PROGRAMME**

(Presented by Hong Kong China)

SUMMARY

In view of global challenge in shortage of skilled aviation professionals, the ICAO has launched its Next Generation Aviation Professionals (NGAP) Programme. Hong Kong China has been steering full support to this ICAO Programme and established the Hong Kong International Aviation Academy (HKIAA), which offers comprehensive aviation-related curriculum catering for the training needs of aviation professionals in various domains both locally and regionally. In particular, the HKIAA provides competency-based training to young generation, gearing them up as professional Air Traffic Safety Electronics Personnel (ATSEP). This working paper shares the initiatives and experience of Hong Kong China and encourages States/Administrations, ANSPs, aviation academia and communities to steer their further effort in supporting the ICAO NGAP Programme.

1. INTRODUCTION

1.1 Civil aviation is a continuous growing sector that plays a pivotal role in driving economic growth, fostering connectivity and influencing environmental sustainability. The global aviation industry has faced a significant challenge in shortage of skilled aviation professionals which directly impedes the attainment of expected growth in air transport. In meeting this challenge, the ICAO, under its NGAP Programme, has been working with States/Administrations, international organizations, industry and academia to assist the aviation communities in accelerating supply of qualified and competent aviation professionals to support the future demands and growth in air transport.

2. DISCUSSION*The Hong Kong International Aviation Academy*

2.1 Hong Kong China, as a major international and regional aviation hub, also has faced the same challenge in shortage of skilled aviation professionals, as other aviation communities

worldwide. In supporting the ICAO NGAP Programme and meeting the operational needs, the HKIAA has been established by the Airport Authority Hong Kong since 2016. Under the ICAO TRAINAIR PLUS Programme (TPP), the HKIAA is an ICAO Platinum member / Training Centre of Excellence (TCE) and is the world's second organization to have received an Airports Council International (ACI)-ICAO TPP-Airport dual recognition. The HKIAA is a Steering Committee member of ICAO TRAINAIR PLUS Program, an ACI Accredited Training Partner, and an IATA Authorized Training Centre. The HKIAA is also an Academia member of CANSO.

2.2 The HKIAA offers comprehensive aviation-related curriculum catering for the training needs of aviation professionals, industry new comers and young people who would like to pursue their career in aviation industry. Partnering with local and overseas education institutions, professional organizations and industry practitioners, HKIAA delivers all levels of programmes including aviation summer day camps, placement programmes, professional certificate courses and accredited programmes.

2.3 The HKIAA's campus provides 5,500-square-meter facilities incorporating resources to accommodate students, meeting the training needs of participants and professionals to embark on career development or enhancing their qualifications in aviation. With sophisticated training facilities and highly qualified professional instructors, the training centres of the HKIAA help talents locally and in the region to further their career by offering proven training programmes in various aviation domains, including Air Traffic Management, Flight Training, Air Traffic Safety Electronics Personnel (ATSEP), Airport Operations, Aviation Security, Foundation and Academic Programmes. For details, please refer to the website of the HKIAA (<https://www.hkiaacademy.com>).

Competency-based ATSEP Training

2.4 Every action taken by the engineering and maintenance personnel of CNS/ATM equipment might have direct implications to the safe and reliable operations of the equipment, and in turn affecting the safety-critical air traffic services. As such, it is crucial that such personnel are provided with systematic training to acquire the professional knowledge and skills in operating and maintaining the safety-critical CNS/ATM equipment. To attract young generation to pursue their career development in ATSEP, HKIAA has been taking the initiative and collaborating with the Civil Aviation Department (CAD) to systematically consolidate ATSEP training elements into the training curriculum offered by HKIAA. In this regard, HKIAA has designed an ATSEP Training Series, complying with both the specifications of ICAO Doc 10057 and the EUROCONTROL-SPEC-132, "EUROCONTROL Specification for ATSEP Common Core Content Initial Training".

2.5 The HKIAA's ATSEP Training Series comprise a total of six modules on both Basic Training and Qualification Training to suit students of various levels of technical competencies and/or different career development needs. In particular, the Basic ATSEP Training modules provide underpinning knowledge on ICAO, aviation regulations, overview of CNS/ATM electronics systems and ATSEP roles, with the aim to prepare the ATSEP with broad knowledge and skills on aviation to further undertake domain training. The Qualification Training modules provide domain-specific knowledge and skills on Communications, Navigation, Surveillance as well as Data Processing and Automation systems (see Appendix).

2.6 Trainees satisfactorily completed ATSEP training will be given higher opportunity for employment by the CNS/ATM systems maintenance organizations to continue receiving On-Job-Training (OJT) with a view to acquiring full ATSEP certification. Besides, an internationally renowned professional engineering institution, namely the Hong Kong Institution of Engineers (HKIE), was engaged to complete a comprehensive professional and qualification assessment process on the ATSEP training scheme, where ATSEP certified personnel are accredited to be the Associate Members of the HKIE. Those Associate Members could continue to pursue their specialization in the HKIE which has well-established mutual recognition/cooperation scheme with international professional engineering

bodies in other countries worldwide. Through professional recognition of ATSEP qualification by international engineering institutions, career development in ATSEP has been directly linked up with and further promoted within the engineering industry, channeling continuous flow of engineering workforce into the highly specialized aviation domain.

3. ACTION BY THE MEETING

3.1 The meeting is invited to :-

- a) note the initiatives taken by Hong Kong China in establishing the HKIAA, offering comprehensive aviation-related curriculum catering for the training needs of aviation professionals, industry new comers and young generation to pursue their career in aviation industry, with a view to supporting the ICAO NGAP Programme and addressing the challenge in shortage of skilled aviation professionals both locally and regionally;
- b) note the competency-based ATSEP training programme offered by the HKIAA, in compliant with the ICAO and EUROCONTROL specifications, for gearing up ATSEP by equipping them with professional knowledge and skills in maintaining and supporting the safety-critical CNS/ATM equipment operations; and
- c) encourage State/Administrations to implement competence-based ATSEP training if they have capacity in doing so, or make use of training resources in the region to better support training of ATSEP in maintaining and supporting safety-critical CNS/ATM equipment operations.



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AIR TRAFFIC SAFETY ELECTRONICS PERSONNEL (ATSEP) Training Series

The ATSEP Training Series is designed to comply with both the specifications of ICAO Doc 10057, "Manual on Air Traffic Safety Electronics Personnel Competency-based Training and Assessment" and the EUROCONTROL-SPEC-132, "EUROCONTROL Specification for ATSEP Common Core Content Initial Training".

 **In-person, Hong Kong International Aviation Academy, Hong Kong**

 **English**

01

Initial Training (Basic)

Training designed to impart fundamental knowledge of the Communications, Navigation, Surveillance (CNS) / Air Traffic Management (ATM) system and skills applicable to all ab initio ATSEPs.



Entry-level personnel preferably with academic background in electronics or telecommunications engineering who intend to build a career in the operation and maintenance of air traffic services related electronics systems of the civil aviation industry.

ATCS1920

Basic ATSEP Training



40 hours
(5 days)

Objectives

Provide underpinning knowledge on international civil aviation organisations, aviation regulations, CNS / ATM electronics systems and ATSEP roles, with the aim to prepare the ATSEP with broad knowledge and skills on aviation to further undertake domain training and unit training.

ATCS1921

Basic Training Shared Across Domains



24 hours
(3 days)

Objectives

Provide underpinning knowledge on cross domain skills applicable to the operation and maintenance of any CNS / ATM system, including subjects such as human factors, health and safety.



02

Initial Training (Qualification)

Training designed to impart domain related knowledge and skills appropriate to the qualification stream to be pursued in the CNS / ATM environment.



Entry-level personnel preferably with academic background in electronics or telecommunications engineering who has successfully completed training courses ATCS1920 and ATCS1921, or equivalent.

ATCS1922

Qualification Training on Communications



32 hours
(4 days)

Objectives

Provide domain-specific knowledge on communications systems, including A/G, G/G radio, antenna systems, voice communication switching systems and radio interfaces and applications.

ATCS1923

Qualification Training on Navigation



24 hours
(3 days)

Objectives

Provide domain-specific knowledge on navigation systems, including NDB, DF, CVOR, DVOR, DME, ILS, GNSS, PBN and RNAV.

ATCS1924

Qualification Training on Surveillance



40 hours
(5 days)

Objectives

Provide domain-specific knowledge on surveillance systems, including PSR, SSR, transponder, Mode A/C/S, SMR, MLAT, A-SMGCS, ACAS, and TCAS.

ATCS1925

Qualification Training on Data Processing



56 hours
(7 days)

Objectives

Provide domain-specific knowledge on data processing and automation systems, including SDP/FDP, AMHS, AIDB, Network principles, protocols, applications, AFTN, ATN, VDL mode 2, ACARS, SATCOM, SITA, ARINC, CPDLC, ATIS, PDC.