

**61ST CONFERENCE OF
DIRECTORS GENERAL OF CIVIL AVIATION
ASIA AND PACIFIC REGION**

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AGENDA ITEM 4: AIR NAVIGATION

**PROPOSAL FOR A HARMONIZED HUMAN PERFORMANCE
TRAINING AND ASSESSMENT CURRICULUM FOR ATSEP IN
THE ASIA-PACIFIC REGION**

(Presented by the Republic of the Philippines)

SUMMARY

This paper addresses the operational gap between organizational human factors guidance and individual competency assessment for Air Traffic Safety Electronics Personnel (ATSEPs) in the Asia-Pacific region. Building directly upon the achievements of the ICAO APAC CNS Sub-Group's Regional ATSEP Human Factors Guidance Material, this paper highlights the need for an operational bridge to train and evaluate non-technical competencies for ATSEPs. Integrating Human Factors (HF), Threat and Error Management (TEM), and Team Resource Management (TRM) into a standardized Competency-Based Training and Assessment (CBTA) framework can help ANSPs systematically mitigate maintenance errors, improve crisis communication, and build system resilience. This paper proposes leveraging the existing CNS SG platform to share best practices, validate prototype behavioral matrices, and support future enhancements to regional guidance material.

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1. INTRODUCTION

1.1 Air safety performance is fundamentally linked to the continuous reliability of ground-based Communication, Navigation, Surveillance, and Air Traffic Management (CNS/ATM) systems. Within the Asia-Pacific (APAC) region, rapid traffic growth and high-stress weather environments place severe operational pressure on Air Navigation Service Provider (ANSP) infrastructures.

1.2 The frontliners providing system installation, upgrade, maintenance to defend system degradation are the Air Traffic Safety Electronics Personnels (ATSEP). The ICAO Doc 10057 (Manual on ATSEP Competency-Based Training and Assessment) and ICAO Doc 9941 (Training Development Guide) provide excellent baselines for structured training, yet there were no prescriptions for standardized, observable non-technical performance indicators.

1.3 The ICAO Asia/Pacific region has made significant progress in addressing this domain through the development and adoption of the Regional ATSEP Human Factors Guidance Material (Version 2.0) by the CNS Sub-Group (CNS SG/29). This guidance material provides an essential foundation by establishing the Stress Factor Mapping Document (SFMD), supervisory leadership frameworks, and ANSP-level organizational self-evaluation checklists.

1.4 To realize the benefits of the Regional Guidance Material, Air Navigation Service Providers (ANSPs) require an operational bridge to translate high-level organizational checklists into observable, individual behavioral metrics. This paper proposes leveraging the established CNS SG platform to integrate an operational Human Performance Competency-Based Training and Assessment (CBTA) framework for ATSEPs across the region.

2. DISCUSSION

2.1 The Regional ATSEP Human Factors Guidance Material effectively answers what environmental, shift, and management stressors affect technical personnel. However, routine maintenance activities and high-stress outages require a standardized tool to answer how individual ATSEPs and technical teams should demonstrate, practice, and be assessed on non-technical competencies in real time.

2.2 In contrast to flight operations (CRM) and air traffic control (TRM), where non-technical behavioral markers are routinely evaluated, ATSEP training remains predominantly technical-centric. Systemic failures, communication latency, and delayed system restorations often stem not from a deficiency in technical competencies, but from breakdowns in situational awareness, threat recognition, and team coordination – which are all non-technical human performance skills.

2.3 To complement the existing Regional Guidance Material, the Philippines (through the Civil Aviation Authority of the Philippines and the Civil Aviation Training Center – CATC Philippines) is developing an operational framework that maps observable behaviors directly to three non-technical pillars: Human Factors (HF); Threat and Error Management (TEM); and Team Resource Management (TRM).

2.4 Developing a dedicated and specialized ATSEP Human Performance Course is feasible for Civil Aviation Training Centers in the region. The training development methodology is in accordance with ICAO Doc 9941 – Training Development Guide that aims for the course to be a competency-based, job-related, and scenario-driven training package designed to translate human factors principles into measurable workplace performance.

3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to:

- a) note the ongoing regional progress under the CNS Sub-Group (CNS SG) regarding the implementation of the Regional ATSEP Human Factors Guidance Material (Version 2.0);
- b) recognize the necessity of operationalizing the Regional Guidance Material by translating its organizational principles into practical, individual Competency-Based Training and Assessment (CBTA) curricula—specifically targeting Human Factors (HF), Threat and Error Management (TEM), and Team Resource Management (TRM);
- c) encourage States and Administrations to utilize the existing CNS SG mechanism to exchange experiences, share training tools, and collaborate with regional training centers (such as CATC Philippines) in testing and validating standardized ATSEP non-technical competency matrices; and
- d) request the CNS Sub-Group to consider incorporating practical CBTA training benchmarks and observable behavioral markers for the possible future revisions and/or supplementary materials of the Regional ATSEP Human Factors Guidance Material.

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