

CANSO Asia Pacific Regional Safety Implementation Strategy

**In support of CANSO Global Strategy
for the Future of Safety in Air Traffic
Management**

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1

Introduction

This plan (referred to as the APAC Regional Safety Implementation Strategy) sets out the strategic context, safety priorities and supporting initiatives to implement the CANSO Global Strategy for the Future of Safety in Air Traffic Management (ATM) in the Asia Pacific (APAC) region. This plan is intended to coordinate collaborative regional safety improvement actions, as well as providing a reference guide to inform individual air navigation service providers' (ANSP) own safety programmes.

The APAC Regional Safety Implementation Strategy has been developed by the CANSO APAC Safety Workgroup which is represented by a growing number of ANSPs in the region. In developing this plan, the Workgroup has cooperated through meetings and surveys to address the following questions:

- Are we safe?
- Will we be safe in the future?
- What do we need to do and prioritise to improve the safety of ATM operations?

The delivery of this plan will contribute to improving the safety of aviation while supporting the ongoing traffic growth across the region. It also aims to support harmonisation of safety management capabilities across ANSPs in the long term.

2

Overview of the Asia Pacific Region

The APAC region is leading the world in air traffic growth. According to the International Air Transport Association (IATA)¹, in the next twenty years, this region is expected to account for two-thirds of global aviation growth with nearly half of all air travel (some 2.9 billion journeys) originating or terminating in the region.

This significant growth poses a range of safety challenges. For some ANSPs, traffic demand is already exceeding existing capacity and capability. In some places this is leading to safety challenges in regard to workload, resourcing and coordination issues. Current ANSP infrastructure and operational approaches may be tested and require continual assessment and review.

The increasing traffic growth heightens the need to acquire and integrate modern advanced technologies and systems to support safe and efficient air navigation services. System interoperability needs to improve to enhance capacity and safety performance across the region, given the air traffic density and complexity. Technological transformations may also introduce new risks in areas such as change management, human factors and training in the transition to next-generation ATM technologies.

The ANSPs in the region come from countries of diverse national cultures and this influences safety cultures. There are considerable differences in the levels of safety management maturity. Some ANSPs are in the initiating stage of implementing a safety management system (SMS), while other ANSPs are in the advanced stages of managing, measuring and continuous improvement.

¹ Source: IATA: <http://www.iata.org/pressroom/pr/Pages/2014-11-19-01.aspx>

A number of similar safety risk factors are shared² by ANSPs in the region, including:

- Human Performance: Workload and fatigue issues in dealing with rapid traffic growth;
- Human Factors: Communication and coordination issues (e.g. non-standard phraseology, hear-back / read-back errors, call sign confusion), procedural compliance issues (e.g. shortcutting procedures when under workload pressure to cope with traffic increases), integrating human factors in incident investigation;
- Technologies: limitation in the existing ATM tools to cope with increasing traffic complexity (e.g. lack of suitable air traffic flow management systems, or tools to monitor and detect traffic conflictions);
- Airspace design limitations, which are also impacted by military airspace requirements;
- Runway safety issues (e.g. runway incursions, unstable approaches); and
- Safety Change Management (e.g. communicating changes, managing risks associated with changes, managing risk information within the ANSP).

The challenges and opportunities associated with growth highlight the importance of evolving our mindset and approach to safety management. ANSPs across the APAC region share a strong commitment to working together to ensure and improve safety.

Regional solutions are required beyond the boundary of individual ANSPs, as the safety and efficiency of flights transcend national borders. These solutions are necessitated by growing airspace user expectations for more harmonised and seamless ATM services. Collaboration and shared learning is the key to ensure aviation safety in the region in times of significant demand and change. These are the key drivers underpinning this plan.

3

Overview of CANSO Safety Strategy

The APAC Regional Safety Implementation Strategy builds on the four themes of the CANSO Global Strategy for the Future of Safety in ATM. The CANSO APAC Safety Workgroup has agreed on the relative importance of these themes to guide the development of this region's safety priorities and implementation plans. The four themes, described below, are the working definitions produced by the APAC Safety Workgroup.

People Create Safety

The theme of 'People Create Safety' recognises that people are our strength rather than weakness. It emphasises the importance of building a positive safety culture, including embedding the Just Culture principles where the focus of safety is not on individual failures and errors but guided by the organisation's clear definition and understanding of what constitutes acceptable and unacceptable behaviours.

It is essential that we continue to embrace a continuous learning culture that is supported by robust investigation processes, analysing causal factors and contextual conditions. These learnings must be used to strengthen systems to control risk exposure and prevent reoccurrence of errors or failures. It is equally important to acknowledge areas within our operations that are performing well and to pass on these learnings and experiences.

Safety is achieved by all individuals in the organisation taking responsibility and ownership of their actions and behaviours. This should be supported by an environment that encourages and supports honest reporting of errors and failures without fear of punishment or ridicule. People also need to be

² The points reflect the common safety risk issues that were discussed at CANSO APAC Workgroup meeting in December 2014 and May 2015.

supported by training/education, systems, tools and information so that they are competent and capable to perform their work safely and can effectively manage safety risks and challenges.

Safety culture is ultimately set by the leadership of the organisation and the trust between the management and frontline personnel. Leaders' commitment to safety improvement and demonstration of positive and proactive safety actions drive the standards of professionalism and level of safety performance of ANSPs.

Safety Intelligence

As ATM is becoming more demanding, with increased use of automation, there is a heightened need for understanding the risks in our system and developing effective strategies to ensure the risks are managed effectively. As a result, safety management is increasingly dependent on collecting and understanding information from day-to-day operations to assess and understand the performance of existing risk controls and performance variability so as to anticipate and prepare for emerging risks.

The theme of 'Safety Intelligence' relates to how ANSPs should gather and analyse data to address the key questions of "are we safe" and "will we be safe in the future". It is about understanding what types of data to collect, the obstacles that prevent us from gathering such data and the prioritisation of the findings after the data is analysed. The objective is to gain confidence over the safety performance of our services and guide the organisation's decision making so that resources can be prioritised for key safety improvement interventions and initiatives.

'Safety Intelligence' is concerned with:

- Collecting safety data from various sources, such as safety reports from staff, audits, surveys and incident/accident investigations
- Analysing safety data against performance indicators/ targets
- Prioritising information to indicate key safety risks, effectiveness of risk controls as well as strengths and weaknesses of safety management processes
- Understanding factors which influence positive performance outcomes.
- 'Safety Intelligence' is critically linked with 'People Create Safety'. Valuable safety data relies on an open, just and proactive culture.

Tailored and Proportionate

The theme of 'Tailored and Proportionate' recognises that we are resource constrained and must apply our finite resources where the best safety benefits can be realised. It is about making 'how we do safety' fit for current objectives and future challenges within each ANSP.

The approach to safety management needs to be proportionate to the risk and complexity of the organisation. With limited resources, safety processes are most effective when they are tailored to suit the organisation and integrated in the day-to-day operations and project lifecycles. Fundamentally this is how we adopt an effective business approach to safety where the balance between safety and other business outcomes is optimised.

Learning and Challenging

The theme of 'Learning and Challenging' recognises that ANSPs regionally are better prepared for tackling our safety challenges if we work together as an ANSP community. By collaborating and learning together

(e.g. through networks and regular information exchange), we will be able to efficiently and effectively address common ATM safety risks, learn from lessons of other ANSPs, and contribute to safer skies.

This theme is also about striving for higher standards and not being content with the status quo. It requires maintaining vigilance about emerging risks/threats and constantly scanning within and outside our organisations to seek improvement. 'Learning and Challenging' also depends on the safety culture where safety is top of the organisation's agenda and staff can feel safe and supported to raise concerns or provide suggestion for safety improvement.

Relative Importance of Themes in the Asia Pacific Region

The CANSO APAC Safety Workgroup has assessed the relative importance of the four themes from the Global Strategy for the region (as illustrated in Figure 1 below).

'People Create Safety' has been identified as the most fundamental element for the region and is an enabling factor for the implementation of the other themes. It recognises that our people play a key role in delivering and assuring the safety of our operations. Considering the safety challenges in the APAC region, near-term initiatives are focused around 'People Create Safety', which aims at promoting positive safety culture, strengthening safety accountabilities and developing competencies of our people to understand and manage safety risks effectively.



**Figure 1: Relative importance of Global Safety Strategy themes for CANSO APAC region
(Importance is proportionate to the size of the circles)**

Implementing 'Learning and Challenging' and 'Tailored and Proportionate' adopts a two-pronged approach. It is recognised that the ANSPs in the region are constrained by resources. There are ongoing opportunities for sharing and capturing lessons learned across ANSPs, targeting improvement actions proportionate to the safety risks we face, and collaboratively finding common solutions to make our skies safer and seamless for airspace users. It is also about looking into the future of ATM safety and integrating safety risk management practices in change management, embedding SMS into business-as-usual practices, and managing all these proportionate to our respective operations.

Underpinning 'Learning and Challenging' and 'Tailored and Proportionate' themes are longer term opportunities for developing the 'Safety Intelligence' framework in the region (including defining the concept of 'Safety Intelligence'). The objectives include aligning metrics and methodologies of assessing safety performance, understanding our changing operational contexts and emerging risks, assessing performance of our risk controls and benchmarking SMS maturity for continuous improvement.

4

Key Safety Priorities

During 2013-2015, the CANSO APAC Safety Workgroup members undertook a number of surveys to provide an understanding and baseline measure of the region's SMS implementation progress, common safety priorities and risk areas. The surveys included topics on SMS maturity, safety culture, fatigue management, change management and runway safety. The survey results, coupled with the common regional safety challenges identified from CANSO Workgroup meetings, have highlighted the following key priorities for safety improvement in the APAC region.

Safety Strategy Themes	Safety Improvement Areas
People Create Safety	<ul style="list-style-type: none"> – Awareness, understanding and practical application of Just Culture. – Defining and implementing safety accountabilities and responsibilities. – Driving positive safety culture and continuous safety improvement from the leadership. – Development and delivery of training, communication and education to equip all staff in the organisation to effectively adopt safety processes, understanding risk and manage change. – Understanding of human factors in ATM operations.
Tailored and proportionate	<ul style="list-style-type: none"> – Integrating safety risk management practices in change management. – Embedding safety risk management system into business-as-usual practices. – Moving the focus of safety investigations or analysis to systemic factors (away from individuals).
Learning and Challenging	<ul style="list-style-type: none"> – Collaboration and sharing learning across the region to address common safety risks. – Improving safety promotions including systematic sharing of lessons learnt from investigations and other safety assurance activities.
Safety Intelligence	<ul style="list-style-type: none"> – Identification and analysis of operational risk management. – Improving the quality of safety reports and analysis by using a common methodology and sharing of best practice for the region. – Developing and understanding safety performance measures.

Table 1: CANSO APAC Region Safety Improvement Areas

5**Safety Implementation Plans**

Table 2 below summarises the safety implementation plans for the CANSO APAC Workgroup. The plans aim to address the identified safety challenges and improvement areas aligned with the four strategy themes. The tactical plans focus on managing common risk areas in this region while the strategic safety plans look to manage change and transition, improve safety capabilities, learning and collaboration for APAC.

As we obtain feedback from ongoing surveys, discussion and other collaborative work conducted through the CANSO APAC Safety Workgroup, further insight will be gained into areas which need different or additional interventions.

The activities identified below will be implemented in a Tailored and Proportionate manner, taking into consideration the context, resources and risk of applicable ANSPs.

CANSO Safety Strategy Themes	Tactical Implementation Plans	Strategic Implementation Plans
People Create Safety	<ul style="list-style-type: none"> – Develop understanding for safety culture and review step-by-step guide to safety climate surveys. – Create awareness and embed Just Culture in investigation and reporting processes, building on existing CANSO guidance material. – Develop and manage repository of safety materials for APAC to develop knowledge base with document links to CANSO materials. – Enhance understanding of risk management for operational staff through programmes such as 'PULSE' incorporating a focus on professionalism. 	<ul style="list-style-type: none"> – Fatigue management in APAC. – Enhance understanding and management of human factors and human performance in ATM operations and investigation. – Strengthen safety mindset from leadership/ top management to the frontline personnel.

CANSO Safety Strategy Themes	Tactical Implementation Plans	Strategic Implementation Plans
Learning and Challenging	<ul style="list-style-type: none"> – Apply change management for APAC ANSPs. – Delivery of runway safety initiatives <ul style="list-style-type: none"> – Establishing runway incursion criteria – Sharing best practices on runway safety – Integrating CANSO runway safety materials with APAC ANSPs. – Industry collaboration and stakeholder engagements <ul style="list-style-type: none"> – ATC/ pilot risk management seminar. 	<ul style="list-style-type: none"> – Integrate SMS into the management of change and business operations. – Develop regional threat and error management framework. – Adopt whole-of-organisation safety approach.
Safety Intelligence	<ul style="list-style-type: none"> – Identify risks in operations. – Implement common safety risk methodologies. – Enhance the understanding and management of risk information in ATM operations. – Sharing safety intelligence across APAC. 	<ul style="list-style-type: none"> – Identify emerging safety risks in ATM operations. – Implement common framework for risk management, monitoring and analysis. – Measure leading indicators for SMS.

Table 2: CANSO APAC Regional Safety Implementation Plans

6

Document Review

This document will be reviewed annually by the CANSO APAC Safety Workgroup. This is to ensure that the priorities for regional safety improvement and supporting implementation plans continue to adapt to ongoing changes in the regional aviation environment and ensure alignment with the evolution of the CANSO Global Strategy.

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