



ASSEMBLY — 42ND SESSION

EXECUTIVE COMMITTEE

Agenda Item 21: Next Generation of Aviation Professionals (NGAP) initiative

PROFESSIONAL DEVELOPMENT IN THE CNS/ATM SYSTEM

(Presented by Chile and supported by the LACAC member States²)

EXECUTIVE SUMMARY

Life expectancy has increased worldwide, thereby prolonging working life and thus delaying retirement.

The communications, navigation and surveillance/air traffic management (CNS-ATM) system provides for the comprehensive management of airspace and air traffic in a safe, dynamic, economical and efficient manner, using advanced technologies for communications, navigation and surveillance. Within this system, there are professionals who, because of psychological or physical demands, may have a technical-operational working life that is shorter relative to the normal retirement age.

For this reason, it is important to plan for the professional development of current and future generations of professionals in the CNS/ATM system in a way that enables young talent to be recruited while also retaining the available talent in all other segments of the workforce, thus allowing the experience acquired to be used beyond the end of the technical-operational stage of the professional life cycle.

Traditionally, the respective education centres have provided training in technical-operational and specialized skills. But outside this sphere, there are no training guidelines at the managerial level for those professionals who, having completed the operational stage of their working lives, have the option of taking on leadership responsibilities at all levels associated with the management of the system's resources in general.

In order to enhance the workforce as needed to tackle future air navigation challenges in the context of the Next Generation of Aviation Professionals (NGAP) initiative, it is important to consider sustainable professional development for those within the CNS/ATM system, including managerial training for professionals who, having come to the end of the technical-operational stage of their working lives, take on roles in decision-making, leadership and team management, with a necessary medium- and long-term vision.

¹ The Spanish version provided by Chile

² Argentina, Belize, Bolivia (Plurinational State of), Colombia, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Paraguay, Peru, Uruguay and Venezuela (Bolivarian Republic of)

Action: The Assembly is invited to: a) acknowledge the importance of the professional development of current and future generations of professionals managing the CNS/ATM system as described in this WP; b) encourage Member States to collaborate with academia to promote the professional development of individuals working in CNS/ATM in order to meet needs at all stages of working life; c) request Member States to collect and share information with ICAO on the benefits of retaining and leveraging experienced CNS/ATM human capital; d) request that Member States assist ANSPs to promote continuous CNS/ATM professional development to meet needs at all stages of working life, facilitating a natural transition from the technical-operational sphere to high-level decision-making; and e) encourage ICAO to promote sustained CNS/ATM professional development as a fundamental pillar of global air navigation, at the different stages of working life, including the necessary high-level decision-making in the medium and long terms.	
<i>Strategic Goals:</i>	This working paper relates to <i>Every Flight is Safe and Secure</i> .
<i>Financial implications:</i>	Financial implications are expected for States, air navigation service providers (ANSPs) and training institutions
<i>References:</i>	Strategy for the Next Generation of Aviation Professionals (NGAP), ICAO, June 2024 Global Air Navigation Plan (GANP)

1. INTRODUCTION

1.1 In 2016, the 39th Session of the ICAO Assembly adopted Resolution A39–29, on the Next Generation of Aviation Professionals (NGAP), which underscores the importance of the NGAP initiative and urges Member States to identify long-term human resources needs.

1.2 Global air traffic volumes are anticipated to double within the next 15 years. New demands will arise in the aviation system, as will emerging technologies and new business models. In this scenario, the CNS/ATM system must work to enhance the resilience of the aviation system.

1.3 The CNS/ATM concept is a description that is required to organize and manage the flow of air traffic in a specific period of time. This description should incorporate an evolutionary vision, anticipating future technological changes and improvements, along with a strategic perspective that will make it easier to adapt to changing needs and optimize the air traffic management system in the long term.

1.4 To deal with a scenario of constant change, it is necessary to consider advanced knowledge in aviation, which is complementary to purely operational knowledge, emphasizing aspects of economic and/or human resources management, including managerial skills for professionals belonging to the CNS/ATM system.

2. ANALYSIS

2.1 Organizations must continually confront internal and external changes. The CNS/ATM system is no exception to this, and all States and regions must evolve to meet the expectations of users.

2.2 Planning within the CNS/ATM system must ensure a proper understanding of user requirements and consider future trends with regard to those requirements. The changes expected in the coming years in the aviation system will require professionals who take on managerial and decision-making roles within this system to be equipped with the right knowledge for these roles.

2.3 *Safety* must be the top priority in aviation and at all stages of working life in CNS/ATM system, which develops through the interactions of people who are responsible for managing it, monitoring its performance and intervening, if necessary, to ensure the desired outcomes. Attention must be paid to human factors in all system stages.

2.4 The CNS/ATM system approach encompasses elements shared between itself and many others, so it is important to view the result of the joint functioning of many parts as an integrated whole and to manage it as such. In addition, the necessary management of information, time and constant digital transformation requires updating of planning and management patterns within the system.

2.5 Users' expectations regarding commercial results require skilled management within the CNS/ATM system to achieve an appropriate balance between demand and capacity. Reflection on and analysis of different situations and scenarios should be encouraged in order to promote innovation and creativity. It is also important to take a broad view and redesign, if necessary, a business model, understanding that users are increasingly demanding and that it is necessary to adapt to them and their needs.

2.6 Professional development is a continuous process of growth and learning that enables individuals to improve their skills and knowledge in order to advance their careers and personal growth within an organization, which has a direct impact on the evolution of the organization. When people strive to enhance the quality of their work, they improve the results of projects in which they participate, thereby improving the organization's achievement of its objectives. The foregoing is applicable to the professional life cycle within the CNS/ATM system.

2.7 The advantage of professional development within an organization is that its internal culture, structure and processes are incorporated. The above is all the more important within the CNS/ATM system, since its primary line of business is operational safety.

2.8 The ageing of the workforce in the aviation industry may pose a threat when it comes to attracting the next generation of aviation professionals, but at the same time, depending on how it is managed, it can also offer tremendous potential.

2.9 If organizations within the CNS/ATM system create opportunities for highly experienced professionals to acquire the necessary skills to take on managerial functions once the operational stage of their professional lives has ended, not only will they be able to improve decision-making in an area in which they have extensive knowledge, but they will also set the course to be followed by new generations, who will be able to see themselves reflected in their predecessors.

3. **CONCLUSION**

3.1 ICAO aviation safety audits have identified lack of qualified aviation personnel as one of the common deficiencies and the main cause of low levels of effective implementation (EI) of critical elements (CE) of States' safety oversight systems.

3.2 NGAP-related issues are of vital interest to a wide range of stakeholders, including airlines, air navigation service providers, airports, training institutions and others, among them the CNS/ATM system.

3.3 The CNS/ATM system is essentially a set of technical systems but should also be seen as a set of business enterprises that depend heavily on each other.

3.4 The primary line of business of the CNS/ATM system is safety, a fundamental pillar of global air navigation, and it is therefore necessary to fill the training and skills gaps for the professionals involved at the different stages of the professional life cycle in the system.

3.5 Continuous professional training in the CNS/ATM system, including academic managerial knowledge for high-level decision-making, would contribute both to the retention of existing human resources who are knowledgeable about the line of business and to a more attractive system structural design for the recruitment of the next generation of aviation professionals.

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