



ASSEMBLY — 41ST SESSION

EXECUTIVE COMMITTEE

Item 26: ICAO Civil Aviation Training and Capacity Building

**AVIATION TRAINING INTELLIGENCE AS PART OF THE STRUCTURE OF AVIATION
TRAINING ORGANIZATIONS (ATOs)**

(Presented by the Dominican Republic)

EXECUTIVE SUMMARY

It is essential for training organizations to build up capacity to interpret data and apply knowledge from aviation training intelligence (ATI) in an integrated way, through the functionality of its essential components (ECs). It is critical to enhance the management of aviation training intelligence in response to the changes introduced to the aviation industry by the COVID-19 pandemic.

There is a need to assess the ability of recognized aviation training organizations (ATOs) to manage aviation training intelligence in an integrated manner from within their organizational structures. This management involves data collection, information analysis, the identification of alternatives for strategic decision-making, and knowledge management. In order to arrive at strategic scale, the activities linked to ATI must have a substantial organizational impact, taking into consideration that all the information managed must reach all of the organization's activities and processes linked to the instructional design and delivery of its academic programs.

While these frameworks are not complete and do not accommodate all the operational requirements, it is recommended that ATOs consider including in these frameworks a unit to perform aviation training data/information analysis (ATI) functions. This ATI unit would be an advisory unit, reporting directly to the ATO's senior management.

Although not all ATOs have systematized the use of the tools that comprise each of the essential components of the ATI, the ATI analyst officers would focus on enhancing the analysis of available information.

With reference to implementation, we note that the GAT Office, accreditor of civil aviation training centres under the TRAINAIR PLUS programme and sponsor of this new training intelligence management, has in its organizational structure a position of aviation training data analysis officer with the competencies for these purposes.

¹ Spanish version provided by the Dominican Republic.

<p>Action: The Assembly is invited to:</p> <p>a) take note of the functions of the ATOs related to aviation training intelligence (ATI) and its benefits;</p> <p>b) adopt the recommendation for modification of the model ATO organizational structures presented in Doc 9841, Manual on the Recognition of Training Organizations in Appendix C — Organizational Structure of the ATO.</p> <p>c) request the ICAO GAT Office to continue its advisory work on the management of Aviation Training Intelligence (ATI); and</p> <p>d) urge Member States to collaborate actively with ICAO, in particular through their ATOs, to promote the appointment of Aviation Training Information Analysts to enhance the management of aviation training intelligence (ATI).</p>	
<p><i>Strategic Objectives:</i></p>	<p>This working paper relates to the Strategic Objectives:</p> <ul style="list-style-type: none"> • Safety • Air Navigation Capacity and Efficiency • Security and Facilitation • Economic Development of Air Transport • Environmental Protection
<p><i>Financial implications:</i></p>	<p>No additional resources are required.</p>
<p><i>References:</i></p>	<p>Doc 9841 Manual on the Approval of Training Organizations ICAO Training Report, vol. 8, no.1 – Aviation Training Intelligence</p>

1. INTRODUCTION

1.1 Aviation training intelligence (ATI) has been defined by ICAO as an integrated information structure, as well as a set of tools and methodologies to connect useful information for strategic and operational decision-making with the training needs of the aviation sector, which will enable the provision of optimal training solutions.

1.2 It is essential for training organizations to build capacity to interpret data and apply knowledge in an integrated manner from the ATI, through the functionality of its eight essential components (EC), which consider at least 18 different tools, processes and systems: ICAO DATA +, Aviation Forecast, TPeMs, LMS, TNA, OPA, ATED, ACPP, ISD, TPP methodology, quality assurance, instructional effectiveness, PTE, HRD, CAAMP, iMPLEMENT, and iStARS, in addition to the tools, processes and systems specific to the recognized aviation training organization (ATO).

1.3 It is critical to enhance the management of aviation training intelligence in the face of the changes introduced to the industry by the COVID-19 pandemic. Organizations have been faced with the need to manage change more efficiently, and increase their capacity for transformation, reinvention and adaptability, which will enable them to respond in a timely and effective manner with more concrete training solutions tailored to a changing world.

1.4 It is timely to assess the ability of ATOs to manage aviation instructional intelligence in an integrated manner from within the organizational structures of their organizations. This management involves data collection, information analysis, strategic decision-making alternatives and knowledge management. In order to have a strategic scope, the activities linked to ATI must have a substantial organizational impact, taking into consideration that all the information managed must reach all the activities and processes of the organization linked to the instructional design and delivery of its academic programmes.

1.5 We must consider that not all ATOs have systematized and integrated the use of the tools that comprise each of the essential components of ATI among themselves and with organizational systems and processes to enhance the analysis of available information.

2. DISCUSSION

2.1 The successful implementation of the ATI and the consequent creation of aviation training intelligence will depend largely on the ability of ATOs to interpret data, analyse information, present alternatives for strategic decision-making, and apply that knowledge by managing the cycle of essential components, which translates into the execution of organizational tasks, activities and processes.

2.2 Doc 9841, Manual on the Recognition of Training Organizations, in Appendix C — Organizational Structure of the ATO, provides examples of organizational schemes to maintain congruence with the needs of an effective quality system governance model. While these outlines are not complete and do not fit all operational requirements, it is recommended that ATOs consider including in these outlines a unit to perform the aviation training data/information analysis (ATI) functions. This ATI unit would be an advisory unit, reporting directly to the senior management of the ATO.

2.3 The aviation training data/information analyst unit designated in the ATOs would have the following main functions:

- a) Collect data from all sources involved in the ATI cycle, structure it and analyze it statistically.
- b) Interpret instructional data, especially those linked to training needs, to establish strategies within the organization.
- c) Aggregate data to identify instructional patterns and trends.
- d) Convert information into integrated informational dashboards.
- e) Propose training solutions, both for the design of new training and for its timely delivery.
- f) Propose alternatives for strategic decision-making based on data (data-driven decision).
- g) Integrate external information to the internal processes of the ATO.
- h) Provide periodic reports so that the information can be used by the organization for strategic purposes.

2.4 Among the benefits of integrating an aviation training data/information analysis unit into the organizational structure of an ATO, one might mention that it would:

- a) Facilitate decision-making for strategic and operational planning.
- b) Provide optimal training solutions.
- c) Reduce information gaps.
- d) Allow for anticipating needs and predicting industry behavior.

- e) Increase competitiveness.
- f) Customize training solutions.
- g) Improve customer experience (civil aviation authorities, service providers, civil aviation agencies, general aviation industry, peer organizations).

2.5 While not all ATOs have systematized the use of the tools that comprise each of the essential components of the ATI, Aviation Training Information Analyst Officers would focus on enhancing the analysis of available information.

3. CONCLUSION

3.1 It is recommended that the model ATO organizational structures contained in Doc 9841, Manual on the Recognition of Training Organizations in Appendix C — Organizational Structure of the ATO consider including a unit for aviation training data/information analysis (ATI).

3.2 This unit would have the primary function of addressing the aviation industry's current challenges related to training needs, instructional design and organizational development. This will require organizations to integrate another component into the organizational structure universe so that it continues to be efficient and functional, and that this integration allows aviation instructional intelligence to be leveraged more broadly and strategically.

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