WORKING PAPER

FOURTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 26 August to 6 September 2024

Agenda Item 3: **Air Navigation System Performance Improvement**
3.1: **Proposals to improve the efficiency of air navigation services contributing to LTAG**

REGULATIONS FOR THE DEVELOPMENT OF DIGITAL CONTROL TOWER AND REMOTE CONTROL TOWER TECHNOLOGY STANDARDS FOR THE CERTIFICATION OF SERVICE PROVIDERS

(Presented by the Republic of Colombia)

EXECUTIVE SUMMARY

This paper presents Colombia's proposal to ICAO for the development of standards and recommended methods for the implementation of digital control tower and remote control tower technology. By means of this proposal, ICAO is requested, through such regional planning and implementation groups as the Caribbean/South American Regional Planning and Implementation Group (GREPECAS) and the other planning groups of the different regions across the world, to develop additional regulations and standards conducive to harmonization among the signatory States, facilitating the global implementation of this new technology. These strategies are essential to the planning and assurance of the safe and efficient integration of digital and remote control towers, and will strengthen safety and security in the movement and airside areas of airports and contribute to the sustainable development of the aviation sector.

Action: The Conference is invited to:
a)   recommend to ICAO that it draw up the necessary regulations for the implementation of digital and remote control towers;
b)   urge ICAO to develop standards for the certification and validation of suppliers of digital and remote control tower systems;
c)   suggest to ICAO that it develop and standardize a comprehensive training programme for digital and remote control tower personnel; and
d)   advise ICAO to develop guidelines for the detailed environmental and operational impact assessment of digital and remote control towers, ensuring that these assessments are aligned with the recommendations of the ICAO Global Air Navigation Plan.

1.   INTRODUCTION

1.1   In recent years, digital and remote control tower technology has advanced significantly, offering new capabilities and improvements in air traffic management. The implementation of these

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[1] Spanish version provided by Colombia.

technologies both poses challenges and presents opportunities for the modernization of air traffic control, enhancing efficiency and safety.

1.2   To date, the lack of specific regulations and clear standards has limited the effective deployment of these technologies. It is therefore crucial that ICAO should issue guidelines and standards defining the necessary procedures for the safe operation of digital and remote control towers. In addition, specific standards must be developed for the certification of the providers of these technologies, ensuring that they meet the necessary safety and operability requirements.

2.   DISCUSSION

2.1   Colombia proposes four key strategies for the effective implementation of digital and remote control tower technology. These strategies are designed to address both the regulatory and technical considerations necessary to ensure the safe and efficient integration of these technologies in the airspace. These strategies are outlined below.

2.2   **Drawing up the necessary regulations for the implementation of digital and remote control towers**

2.2.1   The first strategy has as its aim the creation of a robust regulatory framework that defines the necessary parameters for the operation of digital and remote control towers. The implementation of this regulation is crucial to ensuring that all operations are conducted in a safe and efficient manner, avoiding conflicts and improving coordination between different airspace operators.

2.3   **Development of standards for the certification and validation of providers of digital and remote control tower systems**

2.3.1   The second strategy is focused on the development of specific standards for the certification and validation of digital and remote control tower system providers. These standards are essential to ensuring that the services offered by providers meet the necessary safety and operational requirements, promoting confidence and acceptance by both operators and the general public.

2.4   **Training plans**

2.4.1   The third strategy is concerned with training for the personnel who will operate the remote towers. This will ensure compliance with the competence and training standards set by ICAO, thus guaranteeing a high level of safety and operational efficiency.

2.5   **Impact assessment**

2.5.1   The fourth strategy is aimed at conducting a detailed operational impact assessment of remote towers. This analysis should be aligned with the recommendations of the Global Air Navigation Plan and other relevant instruments, thereby ensuring sustainable and effective implementation.

3.   CONCLUSION

3.1   Strategies for the adoption of a robust regulatory framework defining standards for the implementation of digital and remote control tower technologies, along with the development of specific standards for the certification and validation of technology system providers, are of fundamental importance

for the safe and efficient implementation of these technologies in Colombia and across the world. These measures will not only enhance the safety and efficiency of the airspace, but will also promote the integration and harmonization of standards among States, contributing to the sustainable development of the aeronautical sector.

3.2   In the light of the above, the Conference is invited to adopt the following recommendation:

Recommendation 3.1/x – Regulations for the development of digital control tower and remote control tower technology standards for the certification of service providers

That ICAO:

a)   establish the necessary legal framework for the implementation of digital and remote control towers;

b)   develop standards for the certification and validation of digital and remote control tower system providers;

c)   develop a comprehensive training programme for digital and remote control tower personnel, including theoretical and practical curricula, the certification of instructors and the uses of advanced simulators; and

d)   develop guidelines for the detailed environmental and operational impact assessment of digital and remote control towers, ensuring that these assessments are aligned with the recommendations of the ICAO Global Air Navigation Plan.

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