



ICAO

INTERNATIONAL CIVIL AVIATION ORGANIZATION

**Twenty-Seventh Meeting of the AFI Planning and Implementation Regional Group
(APIRG/27)**

5 to 6 November 2024

**Agenda Item 3: Implementation of air navigation goals, targets and indicators,
including the priorities set in the Regional Air Navigation Plan**

3.6. Other Air Navigation Initiatives

**REQUIREMENT FOR THE DEVELOPMENT OF NEW SARPS FOR
REMOTE TOWER OPERATIONS**

(Presented by South Africa)

SUMMARY	
<p>This working paper presents the requirement for the formulation of Standards and Recommended Practices (SARPS) for the provision of Remote Air Traffic Services at aerodromes, to enhance the already existing SARPS for conventional Air Traffic Services (ATS) at aerodromes.</p> <p>Action: The Conference is invited to:</p> <ul style="list-style-type: none"> a) to accept the requirement for the enhancement of existing Standards and Recommended Practices (SARPs) to accommodate the provision of Remote Air Traffic Services (RATS), and b) to formulate new standards regarding Remote Air Traffic Services. 	
<i>Strategic Objectives</i>	A, B, D, and E

1. INTRODUCTION

1.1 The global ATM operational concept envisions a system that is service-oriented, performance-driven and predicated on the guiding principles described in the OCD (Global Air Traffic Management Operational Concept, Doc 9854). To fulfil this vision, the Air Traffic Management (ATM) system shall ensure that performance forms the basis for all ATM system development.

- 1.2 The ATM System shall ensure that any performance management system establishes rules for, among other things, performance measurement, performance maintenance, performance management and performance enhancement.
- 1.3 The expectation is that ICAO will, in a timely manner, be responsible for the adoption/approval of SARPs and Procedures for Air Navigation Services(PANS) for the ATM community to progress the evolution of the ATM system.

2. DISCUSSION

- 2.1 A conventional aerodrome tower is a facility located at an aerodrome from which the Air Traffic Service (ATS) can be provided to aerodrome traffic mainly through direct visual observation of the area of responsibility of the ATS unit, whereas a remote aerodrome tower is a facility from which ATS can be provided to aerodrome traffic through real-time visual presentation of the elements contained in its area of responsibility, together with other elements that support the operation.
- 2.2 The remote tower concept is based on the premise the Air Traffic Control Officer (ATCO) will have no direct visual observation of their area of responsibility. Therefore, one of the primary objectives of the concept is to introduce a new way to provide visual observation of the area of responsibility of the ATCO that fulfils the existing ICAO provisions.
- 2.3 The new features, therefore, relate primarily to visual observation. Due to the nature and characteristics of the new visual observation means, and provided that any visual presentation of the scenario will never be equal to direct visual observation, there is the risk that the new visual presentation could have a negative impact on safety, for which mitigation measures will be needed.
- 2.4 The technical systems are located at two different places, at the aerodrome and at the aerodrome, interacting with each other but also with external entities at both sides. The way in which the technical systems will interact may be different from that of the conventional tower, something that may necessitate an enhancement to the current service provision standards.
- 2.5 The aerodrome's technical environment is characterised through the description of the existing communication, navigation, and surveillance systems available at the aerodrome plus the available safety nets, these will not change because of providing ATS remotely.
- 2.6 The introduction into service of the remote tower concept is a change to the functional system that may impact on one or several aviation undertakings, as it may introduce changes to the way in which they receive the ATS or the operational context in which these services are provided to them, or to the way in which the aviation undertakings are operating. These interdependencies with other service providers and with aviation undertakings should be considered by the ATS provider when conducting the safety assessment.
- 2.7 The main driver of the implementation of the remote tower concept is cost-efficiency, the safety criteria to be applied should ensure that the level of safety after the introduction into service of the remote tower concept is at least not reduced compared to current conventional tower operations. The objective should be to identify those conditions which might be more

significantly affected by the aspects of the remote tower operation.

- 2.8 The introduction into service of the remote tower concept also has direct implications on human factors as it may influence the capability of the ATCO to accomplish their allocated tasks and to meet their job requirements. It is thus imperative that new standards in the technology associated to image presentation, which encompasses several aspects be introduced. New standards for the assessment of other human performance aspects, such as workload, fatigue and boredom, situational awareness, and perception, will be required.
- 2.9 The type and characteristics of air traffic operating at an aerodrome with remote provision of ATS is an important aspect to focus on, especially when VFR and IFR traffic is combined. Characteristics such as mix of aircraft or equipment are deemed to be important and should be considered in the enhancement of existing standards.
- 2.10 Visual presentation requirements are the core of the remote provision of ATS, it should provide a presentation which will enable the ATCO to maintain continuous watch on all flight operations at and in the vicinity of an aerodrome as well as on vehicles and personnel on the manoeuvring area. Personnel involved in the maintenance of facilities, installations and equipment enabling and supporting the remote provision of ATS at an aerodrome should be adequately trained, qualified and competent to perform their duties in accordance with the requirements.

3. CONCLUSION

- 3.1 The meeting is requested to accept the requirement for the enhancement of existing Standards and Recommended Practices to accommodate the provision of Remote Air Traffic Services
- 3.2 ICAO is requested to formulate new standards regarding Remote Air Traffic Services.

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