The Need for Guidance Material on publishing

REMOTE DIGITAL AERODROME AIR TRAFFIC SERVICES

GACA®
الهيئة العامة للطيران المدني
General Authority of Civil Aviation

VISION رؤية 2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

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Remote Digital Aerodrome Air Traffic Services

Remote Digital Aerodrome Air Traffic Services (RDATS) encompass a range of operational concepts aimed at delivering air traffic control from a location that is not physically situated at the airport. This innovative approach includes several terminologies such as:

- Remote Tower Services (RTS)
- Remote Tower Operation (RTO)
- Remote Aerodrome ATS (RAATS)
- Remote Virtual Tower

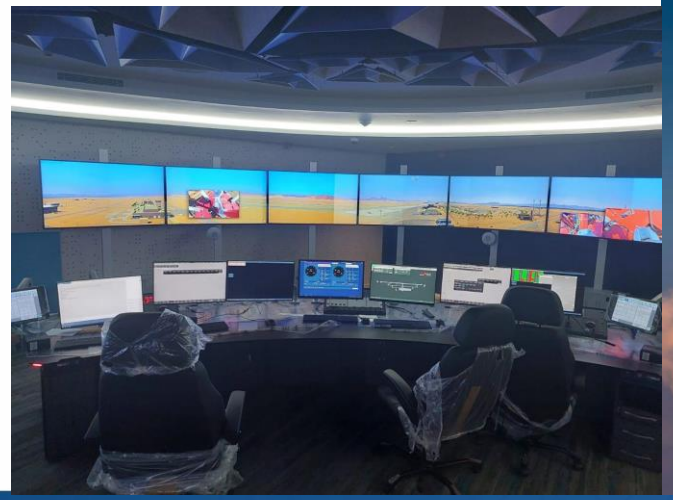
Introduction

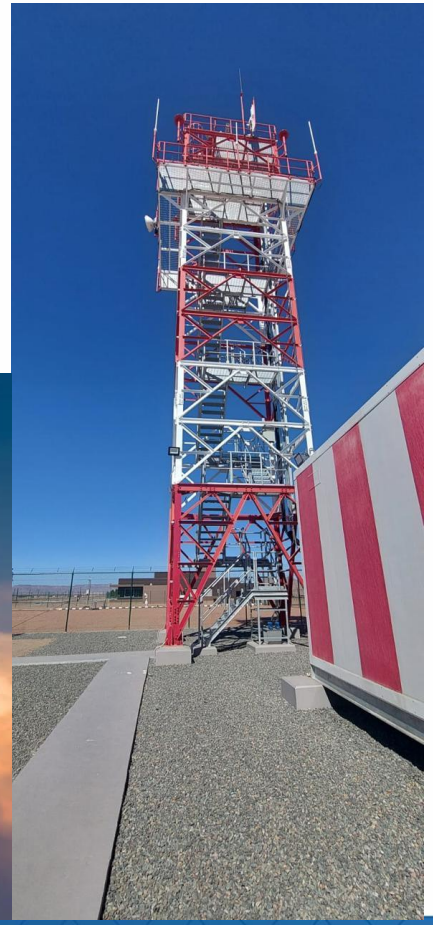
1. Provision of an aerodrome ATS from a remote location using digital video or surveillance technologies is addressed under ASBU element RATS-B1/1 - Remotely Operated Aerodrome Air Traffic Services of ICAO GANP.

2. States are encouraged to consider the implementation of the remote tower (RT) systems where operational benefits can be realized.

Introduction

3. Saudi Arabia has taken a significant step by implementing a Virtual Tower System (VTS) at Al-Ula Aerodrome (OEAO). This initiative represents the first phase of utilizing ATS remotely from a Remote Control Centre located at the Jeddah ATC Tower facility (OEJN).





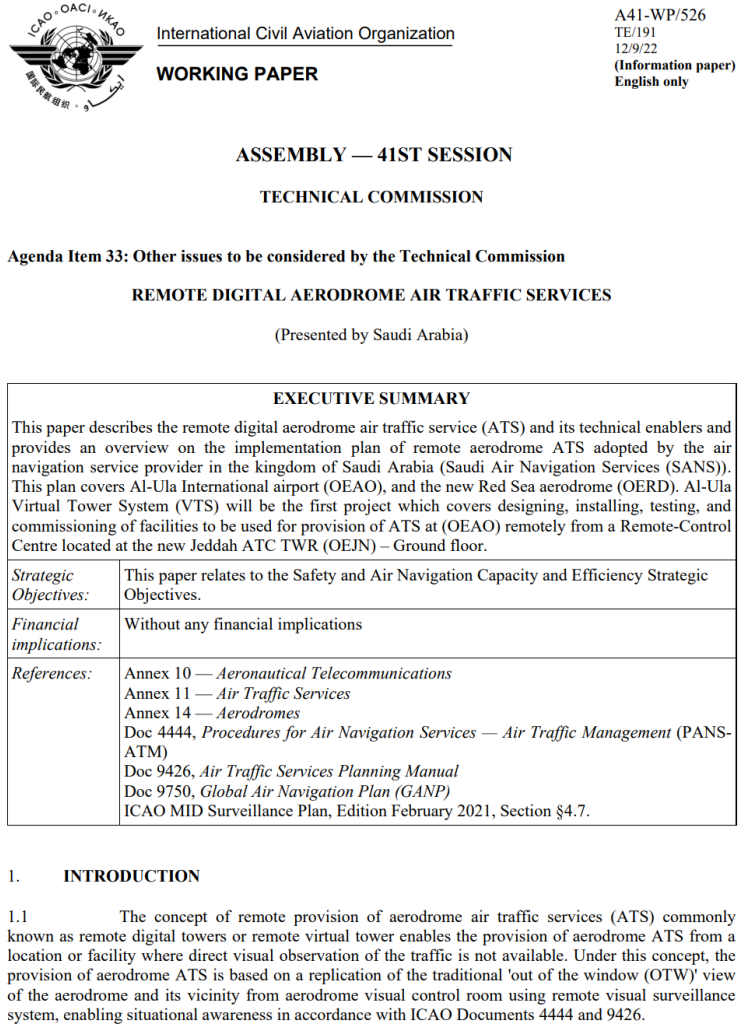
Introduction

4. To support this transition, it is essential that the aerodrome chart is updated to indicate the location of the main tower, including the position of the rotating beacon light.

5. Virtual Tower System (VTS) is planned for installation at other airports across Saudi Arabia.

Discussion at ASSEMBLY — 41ST SESSION

Saudi Arabia presented an information paper during the 41st session of the assembly, Technical Commission, regarding Remote Digital Aerodrome Air Traffic Services.



International Civil Aviation Organization

WORKING PAPER

A41-WP/526
TE/191
12/9/22
(Information paper)
English only

ASSEMBLY — 41ST SESSION

TECHNICAL COMMISSION

Agenda Item 33: Other issues to be considered by the Technical Commission

REMOTE DIGITAL AERODROME AIR TRAFFIC SERVICES

(Presented by Saudi Arabia)

EXECUTIVE SUMMARY

This paper describes the remote digital aerodrome air traffic service (ATS) and its technical enablers and provides an overview on the implementation plan of remote aerodrome ATS adopted by the air navigation service provider in the kingdom of Saudi Arabia (Saudi Air Navigation Services (SANS)). This plan covers Al-Ula International airport (OEAO), and the new Red Sea aerodrome (OERD). Al-Ula Virtual Tower System (VTS) will be the first project which covers designing, installing, testing, and commissioning of facilities to be used for provision of ATS at (OEAO) remotely from a Remote-Control Centre located at the new Jeddah ATC TWR (OEJN) – Ground floor.

Strategic Objectives:	This paper relates to the Safety and Air Navigation Capacity and Efficiency Strategic Objectives.
Financial implications:	Without any financial implications
References:	Annex 10 — *Aeronautical Telecommunications* Annex 11 — *Air Traffic Services* Annex 14 — *Aerodromes* Doc 4444, *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM) Doc 9426, *Air Traffic Services Planning Manual* Doc 9750, *Global Air Navigation Plan (GANP)* ICAO MID Surveillance Plan, Edition February 2021, Section §4.7.

1. **INTRODUCTION**

1.1 The concept of remote provision of aerodrome air traffic services (ATS) commonly known as remote digital towers or remote virtual tower enables the provision of aerodrome ATS from a location or facility where direct visual observation of the traffic is not available. Under this concept, the provision of aerodrome ATS is based on a replication of the traditional 'out of the window (OTW)' view of the aerodrome and its vicinity from aerodrome visual control room using remote visual surveillance system, enabling situational awareness in accordance with ICAO Documents 4444 and 9426.

ICAO – ATC Tower symbol

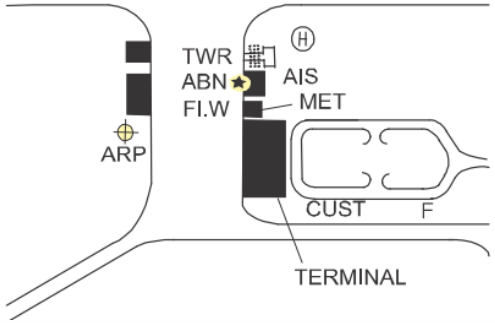
ICAO Annex 4: No specific ATC tower symbol for aerodrome chart.

SYMBOLS FOR AERODROME/HELIPORT CHARTS

145	Hard surface runway	
146	Pierced steel plank or steel mesh runway	
147	Unpaved runway	
148	Stopway SWY	
149	Taxiways and parking areas	
150	Helicopter alighting area on an aerodrome	Ⓗ
151	Aerodrome reference point ARP	⊕
152	VOR check-point	⊖
153	Runway visual range (RVR) observation site	▷

154	Point light	● / ○
155	Obstacle light	✳
156	Landing direction indicator (lighted)	T
157	Landing direction indicator (unlighted)	T
158	Stop bar	•••
159	Runway-holding position — Pattern A / Pattern B *Note.— For application, see Annex 14, Volume I, 5.2.10.*	≡≡≡ / ⊓⊓⊓
160	Intermediate holding position *Note.— For application, see Annex 14, Volume I, 5.2.11.*	- - - -
161	Hot spot *Note.— Hot spot location to be circled.*	◯

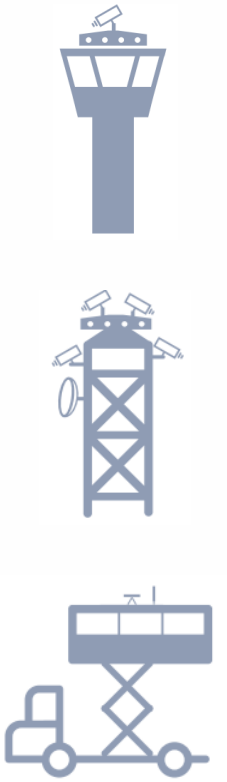
ICAO Doc 8697 and specimen of aerodrome chart: aircraft servicing areas and buildings of operations significance.



Need for guidance

1. The establishment of standards and guidance for the Aeronautical Information Publication (AIP) Aerodrome (AD) section and aerodrome charts related to Remote Tower Services (RTS) has become essential.

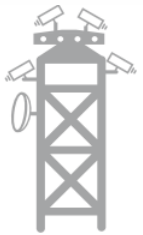
2. As various types of remote air traffic control towers for different operational modes are available in the market, it is crucial to address the following points in the AIP to ensure comprehensive information for airspace users:



Need for guidance

Indication of Remote ATC/AFIS

Clear information must be provided about the availability of Remote Air Traffic Control (ATC) or Aerodrome Flight Information Services (AFIS), including the specific mode of operation.



Interdependence with Other Airports

The AIP should outline the interdependence with other airports that may be serviced by a common Remote Tower Center, ensuring that users are aware of potential operational relationships

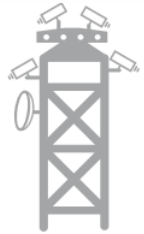
Need for guidance

Communication Failure Protocols

Procedures for handling communication failures in the context of Remote ATC/AFIS must be clearly defined and published in the AIP.

Chart Symbols

Standardized chart symbols must be developed to represent Remote Tower Services.



Unique Name and Definition

A unique name and clear definition for Remote Tower Service should be established to avoid confusion among users.

Action by the meeting

The meeting is invited to :

1. Take Note of this working paper regarding need of guidance related to Remote Digital Aerodrome Air Traffic Services publication.
2. Develop and provide guidance for the inclusion of remote ATC/AFIS information in the Aeronautical Information Publication (AIP) and aeronautical charts.
3. Create standardized symbols to represent remote ATC/AFIS and mobile tower on aerodrome charts.

Red Sea airport Mobile tower configuration

Thank You

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