



*International Civil Aviation Organization*

**MIDANPIRG Communication, Navigation and Surveillance Sub-Group**

**Eleventh Meeting (CNS SG/11)**  
*(Muscat, Oman, 16-19 May 2022)*

---

**Agenda Item 4: CNS planning and implementation in the MID Region**

**SURVEILLANCE SYSTEMS IN JORDAN**

*(Presented by Civil Aviation Regulatory of Jordan)*

**SUMMARY**

This information paper provides an overview on Surveillance Status at Jordan.

**1. INTRODUCTION**

1.1 Jordan has installed a new Mode-S Radar System imbedded with ADS-B manufactured by ELDIS (CZECH) at Queen Alia International Airport to enhance ATM operational redundancy and efficiency in the provision of Air Traffic Services.

1.2 Jordan has installed a new Microwave links manufactured by ERICSSON with fully redundant (1+1) equipment to transfer radar data from radar site to Indra Aircon2100 System.

1.3 Jordan has installed new RADOME manufactured by Infinite (USA).

1.4 Jordan has started a new project to re-new all servers and workstation (hardware only) at Indra TACC sectors

1.5 Jordan has a negotiation with CS-SOFT company to provide their ATM application on a test platform as atrial for four months to identify the new features provided by the system.

1.6 Jordan has a plan to establish a new ATM Center to meet the future needs of Jordan air space

**2. DISCUSSION**

***Brief Description Information***

2.1 The new radar tender started in 2018, the project encountered some delay due to the effect of covide-19 pandemic. It was endorsed after a commissioning flight calibration in Feb 2021.

2.2 The Radome was installed in order to protect the Eldis radar antenna from severe weather conditions especially high wind speed and to extend the life span of the antenna.

2.3 The Radome installation was delayed after radar operation due to some financial constraints and other logistics.

2.4 The microwave link system has been designed and configured to transfer radar and non-radar data in a turbo ring topology.

### ***Benefits of New Radar***

2.5 The new radar increased the efficiency and effectiveness of Air Traffic Controllers performance .

2.6 The site selection of the new radar was intended to improve the range coverage. As an example, it was observed that the coverage range at east of Jordan has improved by about 100km.

2.7 The new radar has improved safety by insuring redundancy of radar.

2.8 Radome installation, enhanced safety by insuring continuous operation of radar even in severe weather conditions.

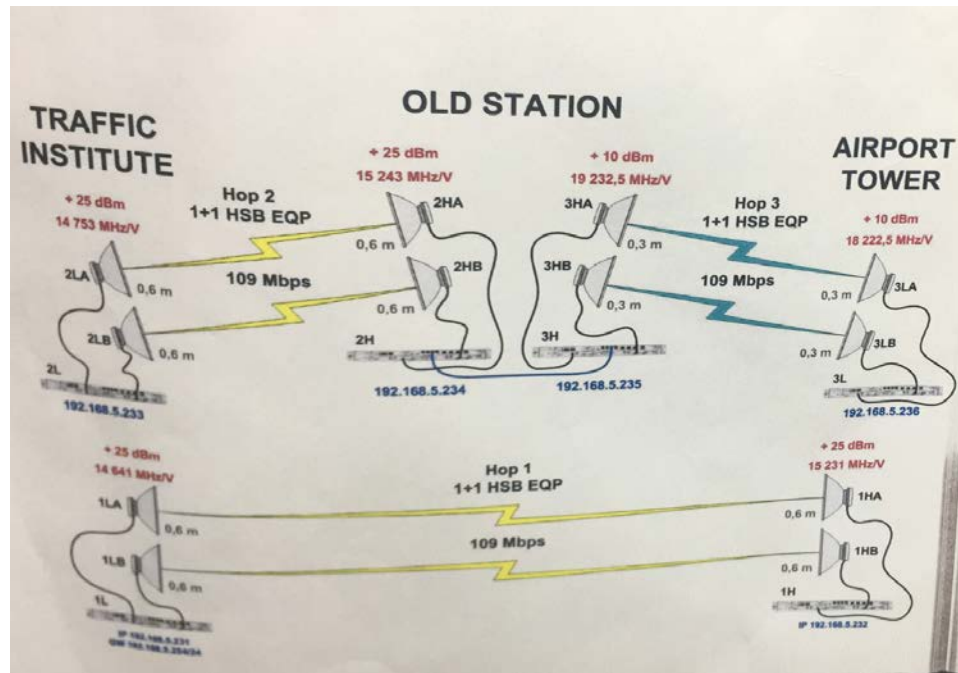
### **3. ACTION BY THE MEETING**

3.1 The meeting is invited to

1. note the information provided;
2. note the safety and efficiency benefits of the radome installation considering climate changes in the MID Region;
3. support Jordan proposal to activate radar data sharing between states in order to cover the non- radar areas;
4. support Jordan proposal to set a common data base that contains all necessary information about technical issues; and
5. note the need to get access to a common free analytical tool that will assess radar performance.

**APPENDEX A**

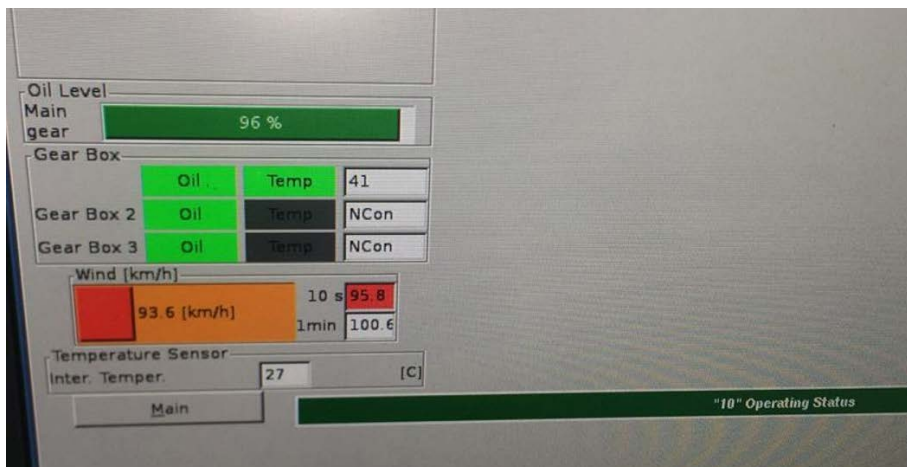
- MW link path design

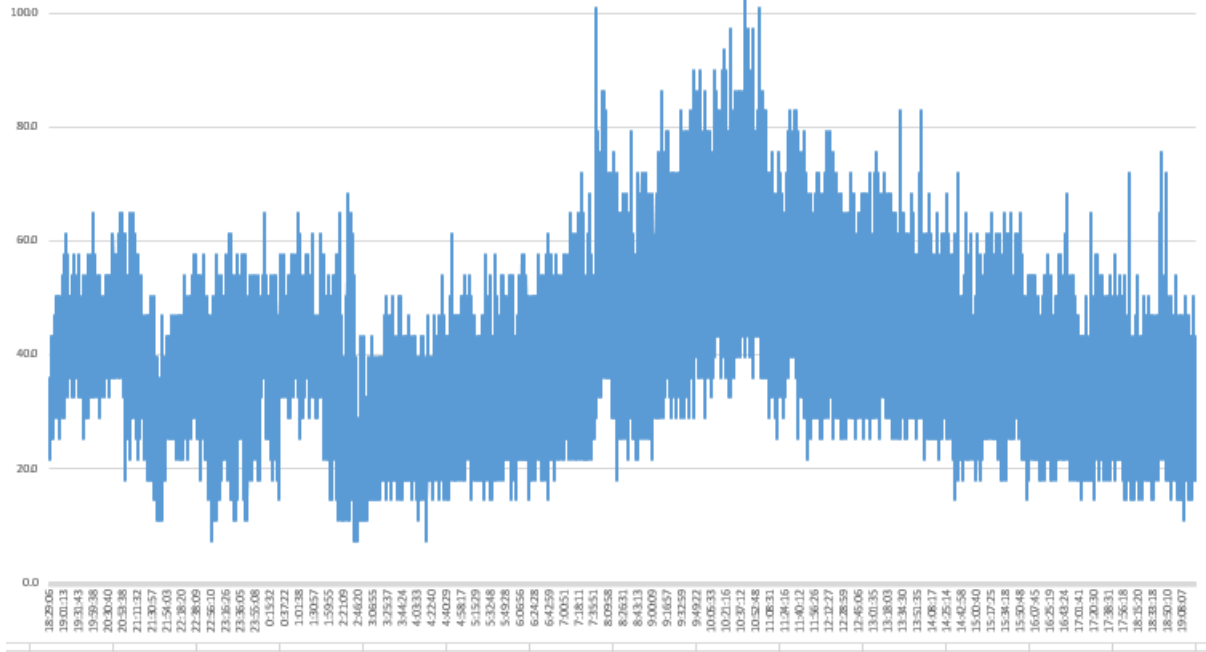


- RADOME



- Wind speed measure





- Damage due to high wind speed

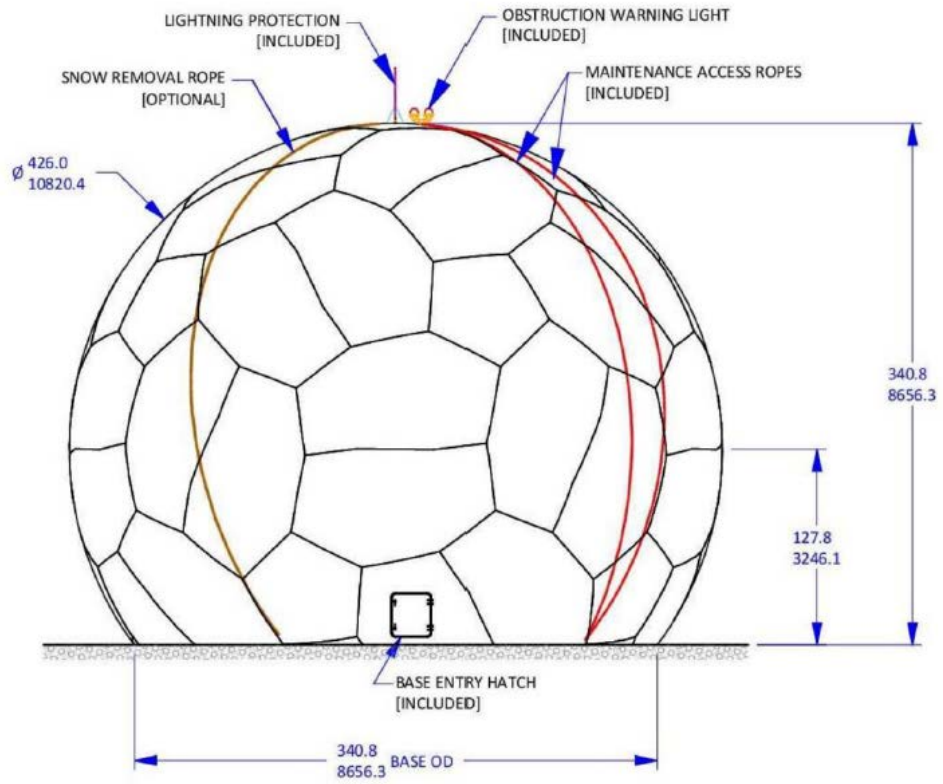






## 7.2. RADOME OUTLINE DIMENSIONS

### 7.2.1. 80.0% Truncation



Panel quantities are:

Type	Qty
Z	1
A	10
B	20
C	20
BB1	5
BB2	5
CB1	5
Total:	66

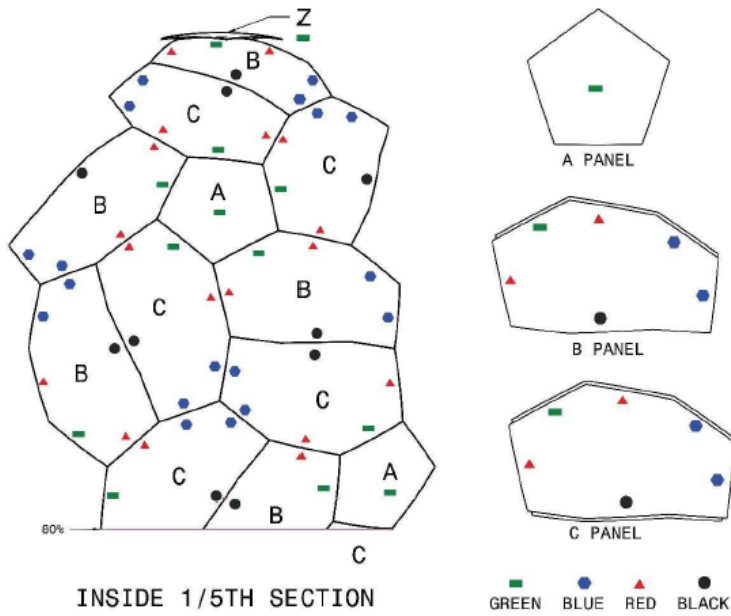


Figure 7 Panel Types and Identification

- Frequency: 0.0 – 4.0 GHz IEEE L& S-Band
- Transmission Loss: <-0.20 dB One-way
- Wind Speed: 155 mph [250 Km/h] FOS >2.0 (Using ASCE 7 guidelines)
- Equatorial Diameter: 35.5 Ft [10.8m] Internal Diameter 3" [75 mm] less
- Base Outside Diameter: 340.8 inches [8656 mm] 80.0% Truncation