INTERNATIONAL CIVIL AVIATION ORGANIZATION

First Meeting of the Africa - Indian Ocean Aviation System Planning and Implementation Group (AASPG/1)

Libreville, Gabon, 3 - 7 November 2025

Agenda Item 4: Implementation of air navigation goals, targets and indicators, including the priorities set in the Regional Air Navigation Plan

SADIS API IMPLEMENTATION - NIGERIA'S EXPERIENCE

(Presented by Nigeria)

SUMMARY	
This information paper highlights the progress made by Nigeria in terms of migrating from SADIS FTP to SADIS API. **Action by the Meeting:** Action by the meeting is provided in paragraph 3.1	
REFERENCE(S):	○ Amendment, 78, 81 and 82 to Annex 3 ○ AFI eANP ○ Outcomes of the WACAF Workshop on SADIS API
Strategic Objectives	A - *Aviation Safety* B - *Air Navigation Capacity and Efficiency*

1. INTRODUCTION

SADIS FTP

1.1. The Nigerian Meteorological Agency had implemented SADIS FTP since 2012 and deployed the services to about twelve airports on separate accounts through a third party.

SADIS API

1.2. Nigeria began the process of migration to SADIS API immediately ICAO called upon States to implement the SADIS API for which a workshop was organized in Dakar -Senegal.

2. DISCUSSION

REGISTRATION FOR SADIS API

2.1. In order for the SADIS Provider to maintain appropriate records on the users of the SADIS API the user is required to complete registration form before API access can be granted. The registration process can be instigated by e-mailing the SADISmanager@metoffice.gov.uk

2.2. SADIS API access is also dependent on approval from State Meteorological Authority; in this NIMET is the Nigeria's meteorological authority as well as SADIS user organization. Because of our previously obtained approval for SADIS FTP, access was automatically granted by the service provider.

2.3. During the registration, we indicated interest to use the following data sets:

- WAFS Gridded data API
- SIGWX data API
- OPMET data API

2.4. The WAFS gridded data set contains forecasts of hazard and non-hazard phenomena.

HAZARD DATA

- Turbulence severity
- Icing severity
- Horizontal extent and flight levels of base and top of cumulonimbus (CB) clouds.

NON-HAZARD DATA

- upper wind
- upper-air temperature;
- upper-air humidity;
- geopotential altitude of flight levels;
- direction, speed and flight level of maximum wind;
- flight level and temperature of tropopause;

2.5. All the data sets chosen are on 0.25 horizontal resolution. Data received from SADIS are raw/IWXXM format which requires suitable visualization software in order to visualize them in map form.

2.6. To receive the data sets, our ICT team wrote a script that automatically requests and download available data in SADIS into our central server where the data are processed for visualization, and distribution to different airport workstations.

NIMET SADIS TEAM

2.7. NIMET established a SADIS Team comprising of Meteorologists and ICT personnel (sourced internally), and willingness NIMET's leadership to provide required resources and support, which made it easier for the team to walk closely and achieve much within a short.

ICT AND SYSTEMS SUPPORT

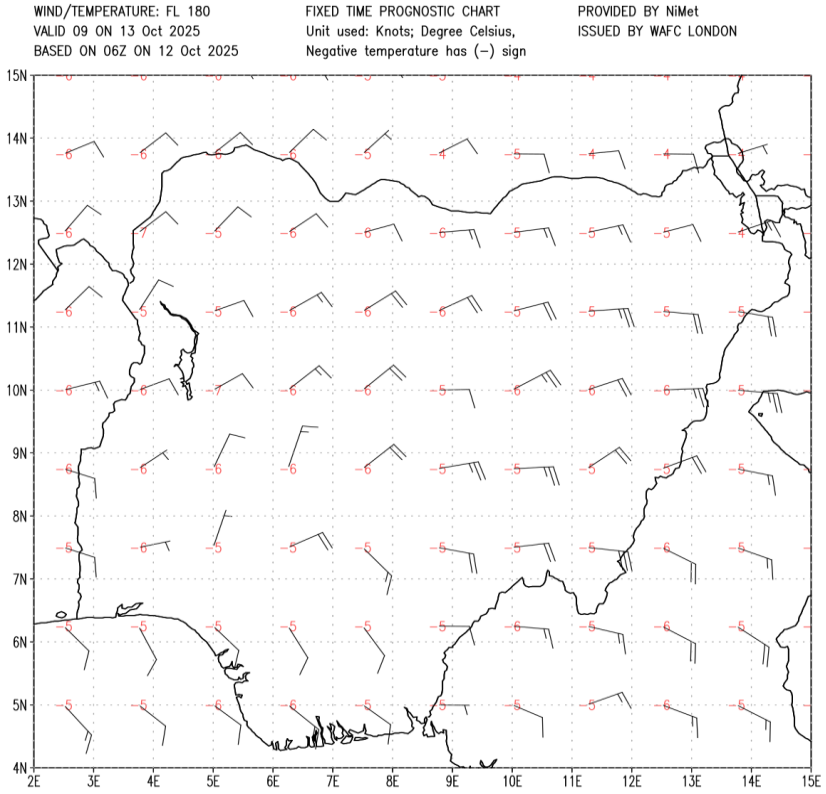
2.8. Our ICT team developed and assembled necessary and compatible software for data interrogation and requests. Implementation of SADIS API requires the following:

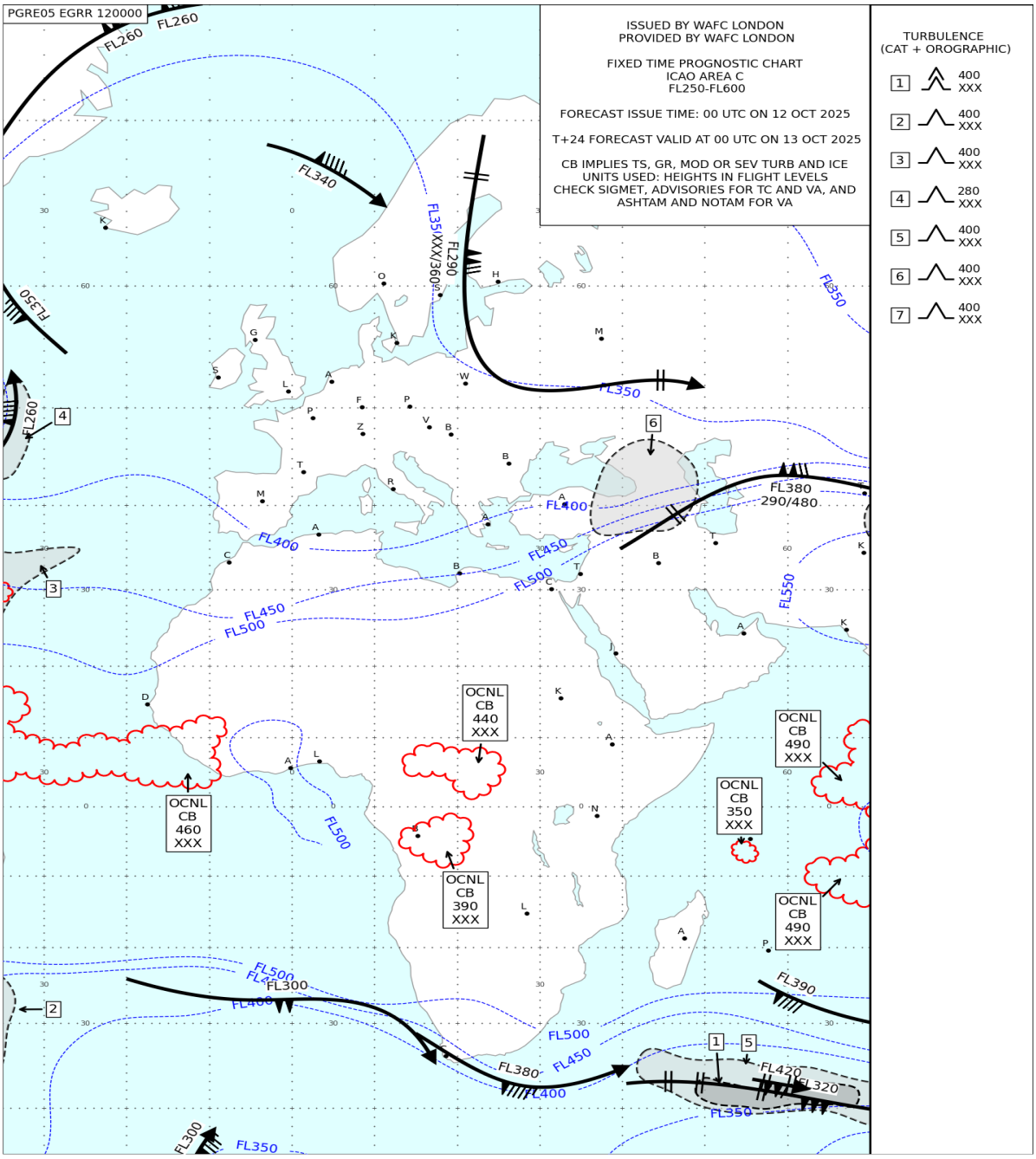
- **Hardware:** We need robust server running in enterprise capacity to be able to scale interrupt from across NiMet outstations.
- **Firewall:** We need to procure and deploy a centrally managed Next-Generation Firewall (NGFW) with 24/7 monitoring to defend against sophisticated cyber threats, including Man-in-the-Middle (MITM) attacks.
- **SSL:** We need to procure and implement and enforce a policy of end-to-end encryption for all connections to and from our central SADIS API hub. This will cryptographically verify data origin and ensure integrity, preventing attacks and tampering.
- **Front-End Visualization**: Procurement and Implementation of a web-based application that allows forecasters to easily view and analyze the new SIGWX, gridded, and OPMET data. This is critical as the new SIGWX is data, not pre-made charts.
- Implement **location-based access controls for the SADIS system.** Restrict system logins to within NiMet's trusted national office network, with exceptions requiring explicit executive approval.

OFFICIA LAUNCH OF SADIS API IN NIMET

2.9. After weeks of painstaking work by the team, SADIS API was officially launched by the Director General/CEO of NIMET, for operational use in Nigeria on 27 August, 2025.

SOME OUTPUTS FROM SADIS API





OPERATIONAL AND MAINTENANCE BENEFITS

2.10. Simplified **Management and Updates**: This is one of the biggest advantages. When you need to update software, apply a security patch, or change a feature, you do it once on the central server. All users immediately access the new version upon their next interaction. This eliminates the nightmare of managing updates across thousands of individual user devices (e.g., like updating a desktop application).

2.11. **Easier Debugging and Troubleshooting:** Logs, error reports, and user activity are all funneled to a central point. This makes it significantly easier to identify, reproduce, and fix bugs because you have a complete view of the system's state and user actions in one place.

2.12. **Centralized Backup and Disaster Recovery:** Backing up data is streamlined because all critical information resides in a single data centre or cluster. You can implement robust, automated backup routines without worrying about data being siloed on individual user machines. In case of failure, recovery is faster and more reliable.

2.13. NiMet has succeeded in taking control of SADIS from a third party. SADIS FTP and API can be used side by side until 2028 when SADIS FTP will be retired.

ADVANTAGES OF SADIS API

2.14. SADIS FTP is not able to handle the huge increase in data volume that comes with the new WAFS gridded data sets.

2.15. SADIS FTP also isn't (and can't be made to be) SWIM compliant in line with ICAO recommendations.

2.16. SADIS API is the newest generation of SADIS. It is twinned with the WIFS API (operated by WAFC Washington).

2.17. SADIS API became operational in March 2024 for the WAFS Gridded and OPMET data, on 8 April 2025 WAFS SIGWX became operational.

2.18. NIMET has commenced work on the next phase of the SADIS API implementation project, which is to integrate SADIS with our existing workstation such as: eFlight folder, MeoWiz and MSG. eFlight Folder and MeoWiz are developed internally to support electronic transmission of meteorological information to ATS, flight crew, airport management etc.

3. ACTION BY THE MEETING

3.1. The meeting is invited to :

a) note the information in this paper; and

b) encourage States and Organizations to engage for the migration to SADIS API system for the provision of OPMET information in the required format.