



**International Civil Aviation Organization**

**NINTH MEETING OF THE  
METEOROLOGY SUB-GROUP (MET/SG/9)  
OF THE AFI PLANNING AND  
IMPLEMENTATION REGIONAL GROUP (APIRG)**

Dakar, Senegal, 21 to 23 October 2009

**Agenda Item 3: WAFS in the AFI region**

**SUMMARY OF RECENT AND FORTHCOMING  
DEVELOPMENTS TO THE SADIS**

(Presented by the SADIS Provider State)

**SUMMARY**

This paper describes SADIS developments since September 2008. Some of these developments have had a direct impact on end users. A number of important developments are planned to the SADIS in future years and these are highlighted in this paper for the consideration of the group.

**1. INTRODUCTION**

1.1 This paper presents developments to the SADIS since September 2008. For more details of the activities of the SADIS, users may wish to review information available on the ICAO SADIS Operations Group website at URL: [www.icao.int/anb/sadisopsg](http://www.icao.int/anb/sadisopsg).

**2. RECENT DEVELOPMENTS**

**2.1 Cessation of the SADIS 1G satellite broadcast**

In accordance with SADISOPSG Conclusion 9/15 and 13/24, the SADIS first-generation (SADIS 1G) satellite broadcast was withdrawn from service on 05 January 2009. Any SADIS 1G user yet to migrate to a SADIS second-generation (SADIS 2G) VSAT reception system can obtain procurement guidelines within the SADIS User Guide (URL: <http://www.icao.int/anb/sadisopsg/sug/>) and via the Met Office SADIS homepage (URL: <http://www.metoffice.gov.uk/sadis/index.html>)

***Suggested action:*** Note this information only.

## 2.2 Update to the SADIS User Guide

A Fourth Edition of the SADIS User Guide (SUG) was endorsed by SADISOPSG/13. Extensive amendments to the SUG were necessary to take into account the phasing out of the SADIS 1G broadcast, Amendment 74 to Annex 3, and the agreement by the IAVWOPSG to use PNG chart form instead of T4 charts for the volcanic ash advisories in graphical form. No paper copies of the SUG will be distributed by ICAO. Instead, users are encouraged to visit URL: <http://www.icao.int/anb/sadisopsg/sug/> to obtain the latest version and associated Annexes 1 to 4.

**Suggested action:** Visit URL: <http://www.icao.int/anb/sadisopsg/sug/> to obtain the latest SADIS User Guide, Annexes 1 to 4.

## 2.3 Development of alternative SADIS 2G hardware

The SADIS Provider has completed acceptance tests of the NetSys SADIS Transcoder (NST) as an alternative SADIS 2G reception unit. The NST is available only as part of a complete NetSys SADIS 2G package, and presents data as a UDP-multicast output. Further information on the NST can be obtained direct from the supplier via URL: <http://www.netsys.co.za/> or email: [info@netsys.co.za](mailto:info@netsys.co.za).

In addition, the SADIS Provider has completed acceptance tests of a VADOS VadEDGE 4100-series router for SADIS 2G. In view of a market trend away from the X.25 protocol, VADOS Systems developed the 4100 as an entry-level IP-only router that is compatible with SADIS 2G reception systems. The VadEDGE 4100 presents data as TCP/IP or UDP-multicast. Further information on the VadEDGE 4100 can be obtained direct from the supplier at URL: <http://www.vados.com/new/index.php> or email: [sadis2g@vados.com](mailto:sadis2g@vados.com).

Details of the NetSys SADIS Transcoder and the VADOS VadEDGE 4100 are contained within the SADIS User Guide.

**Suggested action:** Consider whether your SADIS reception system could benefit from these new service offerings and contact the vendors directly for further assistance..

## 2.4 Initial phase of enhancements to the SADIS FTP service

In April 2009, SADIS Provider implemented an initial phase of enhancements to the SADIS FTP service. The SADIS FTP service now resides on virtual server hardware and benefits from cross-hall IT resilience. These enhancements were transparent to users, with existing usernames, passwords, IP/host address and directory/file structure remaining unchanged.

**Suggested action:** Note this information only.

## 2.5 Procurement of SADIS 2G data backup arrangement

The SADIS Provider State is continuing with the development of a SADIS 2G data backup arrangement with the US NWS Telecommunications Gateway (NWSTG) and the SADIS OPMET Gateway (NATS).

Once configured and tested, an ISDN data backup link would be instigated in the event that the UK Met Office was unable to pass SADIS data from Exeter to the satellite uplink facility at Whitehill. WAFS data would be routed from the NWSTG to the SADIS Gateway over ISDN, then onward routed to Whitehill for dissemination across the SADIS 2G satellite broadcast.

The SADIS Provider State expects this data backup capability to be available operationally in 2009.

*Suggested action: Note this information only.*

## 2.6 SADIS workstation software evaluations

At the request of SADISOPSG/13, the SADIS Provider has conducted a third round of SADIS workstation software evaluations. The assessments were necessary in light of changes to the SADIS broadcast since the previous round of evaluations in 2005/2006, notably the adoption of Amendment 74 to Annex 3 and the cessation of the SADIS 1G broadcast.

By May 2009, the SADIS Provider had conducted 8 SADIS workstation software evaluations, with 7 of the packages available fulfilling the software requirements of SADISOPSG/13. The results of these evaluations will be presented to SADISOPSG/14 and are also available to view at URL: <http://www.metoffice.gov.uk/sadis/software/index.html>.

It remains the responsibility of the user to ensure that procured software meets their full requirements. It is not intended that the software evaluations fulfil this task. The results from the software evaluations may be used as one additional source of information to aid any procurement process but should not be viewed in isolation of other important procurement requirements.

*Suggested action: Consider whether your workstation software continues to fulfil your local user needs and the requirements of the SADISOPSG. If not, consider consulting your workstation provider directly.*

## 2.7 GRIB 2 WAFS data trial on SADIS 2G

To facilitate the implementation of WAFS upper-air forecasts in GRIB 2 code form, the SADIS Provider has conducted initial trials using test data on the SADIS 2G satellite broadcast aimed at determining the likely transmission performance of this new data set.

In April 2009, the SADIS Provider disseminated two *uncompressed* GRIB 2 data volumes to a small number of SADIS 2G users. These initial trials demonstrated that a 50MB data volume

(uncompressed GRIB 2 WAFS data) would take almost 2 hours to disseminate across the existing SADIS 2G infrastructure. Compare this is an existing GRIB 1 WAFS data set, amounting to 10MB (uncompressed), which takes in the region of 20-25 minutes to broadcast across SADIS 2G.

Further dissemination trials are planned in late 2009 pending availability of *compressed* GRIB 2 trial data from WAFC London. The WAFCS expect to achieve a compression ratio of around 2:1, thus allowing the 50MB data volume to fall to around 25MB, with a envisaged fall in transmission time on SADIS 2G to less than 1 hour. The results of the dissemination trials will be discussed within the SADISOPSG and WAFSOPSG in order to determine the future implementation of the GRIB 2 data, and any changes that may be necessary to accommodate the new data on the SADIS 2G service.

***Suggested action:*** Review discussions at SADISOPSG and WAFSOPSG.

### 3. FORTHCOMING DEVELOPMENTS

#### 3.1 Further enhancements to the SADIS FTP service

The SADIS Provider has received endorsement from SADISOPSG/14 (July 2009) to progress with the development of a second phase of SADIS FTP enhancements. This second phase will be aimed at delivering a *SADIS FTP Secure* service in 2010. Some of the technology utilised to deliver the initial phase of developments (outlined above) will be used to deliver the phase two enhancements – e.g. virtual server environment.

Once operational, the SADIS FTP Secure service will be provided in parallel with the existing SADIS FTP service for a period of at least 12 months, to allow users the opportunity to migrate to the new (more secure) service. Existing usernames/passwords and IP/host address will change in order to access the new SADIS FTP Secure service.

***Suggested action:*** Monitor the development of a *SADIS FTP Secure* service through the SADISOPSG.

#### 3.2 Distribution of GRIB 2 WAFS data on SADIS

Further to the discussion above relating to the development of GRIB 2 WAFS data and the likely transmission performance of this data on the SADIS 2G satellite broadcast, the SADIS Provider is expected to make the new data available (initially) on the SADIS FTP service in early 2010.

The SADISOPSG will be expected to determine whether any changes are necessary to the existing SADIS 2G infrastructure in order to accommodate GRIB 2 WAFS data via satellite.

***Suggested action:*** Access the GRIB 2 data on SADIS FTP (when available) and monitor discussions at SADISOPSG relating to the availability of the gridded data via SADIS 2G.

4. **ACTION BY THE MET/SG**

4.1 The MET/SG is invited to review the content of this working paper and to consider the suggested actions.