

International Civil Aviation Organization



ICAO

WORKING PAPER (WP/21)

**ICAO ASIA AND PACIFIC (APAC)
THIRTIETH MEETING OF THE METEOROLOGY
SUB-GROUP (MET SG/30)**

Bangkok, Thailand, 20 to 24 July 2026

Agenda Item 8: Research, development and other initiatives

SADIS, WIFS AND WAFS MATTERS

(Submitted by WAFC London)

SUMMARY

This paper provides an update on matters that relate to the World Area Forecast System (WAFS) data sets, WAFC London operated Secure Aviation Data Information System (SADIS), and the WAFC Washington operated WAFS Internet File Service (WIFS).

IMPORTANT - It is planned to retire the SADIS FTP and WIFS systems in November 2028 so all users need to migrate to the SADIS API or WIFS API prior to that date.

1. INTRODUCTION

1.1 This paper reports on SADIS and WIFS operational matters as well as recent and upcoming changes in the provision of WAFS data. These changes have been agreed through the ICAO Met Panel Meteorological Operations Group (MOG) at its annual meetings.

2. DISCUSSION

WORLD AREA FORECAST SYSTEM DATA

Changes to the operational data sets

2.1 On 8 April 2025 the new multi-timestep SIGWX, which contains forecasts for T+6 to T+48 at 3-hourly intervals in IWXXM format) were made operational via the SADIS API and WIFS API. They come in IWXXM format and users are expected to visualize them from the IWXXM datasets. Briefing chart type visualisations are not provided.

2.2 No significant changes have been made to the core WAFS gridded data sets in the past year.

2.3 At WAFC London there was one change made to the data:

- A bug fix was applied on 12 February 2026 to the data published on the SADIS API to remove an unnecessary level of precision. This prevented a value of say 300.5K from being

encoded as 300.499999 or 300.500001 and instead encoded it properly. This change resulted in the data files shrinking in size to around 50% of their original sizes, from around 24GB per model run to 8GB per model run.

2.4 At WAFC Washington there were a couple of things to note:

- The WIFS GRIB ingest software was upgraded on 8 Mar 2025. This changed the processing of data from post-processing the grids after they have all arrived to an on-the-fly processing. This means the grids are available about 75 minutes earlier than with the older ingest code.
- There were a few small updates to the GFS model in 2025 including an upgrade of the Observation Processing (ObProc) package in August. This change added synoptic snow cover measurements and upgraded the Sea Surface Temperature assimilation software.
- The GFS model is scheduled to be upgraded to version 16.4 in 2026.

WAFS VERIFICATION

2.5 Verification data for WAFC London is available here <http://www.metoffice.gov.uk/aviation/responsibilities/icao>. WAFC London is now able to provide turbulence verification data which uses the IATA Turbulence Aware data sets. These observations are reported as an Eddy Dissipation Rate (EDR) which is the same as what the WAFS Turbulence forecasts, but it is important to note that the IATA data doesn't differentiate between turbulence types and can therefore include convective turbulence which WAFC turbulence data is not trying to forecast.

2.6 Verification data for WAFC Washington is mostly available here: <https://www.emc.ncep.noaa.gov/users/verification/aviation/wafs/prod/>. Wind direction verification plots are available here: <http://www.emc.ncep.noaa.gov/gmb/icao/>.

2.7 Both WAFCs verify their own wind and temperature forecasts. WAFC London provides verification data for the harmonized/blended cumulonimbus cloud forecasts, and turbulence forecasts.

2.8 New performance metrics have been added by WAFC London which show model performance according to different wind speed categories, and for timesteps extending out to T+120.

2.9 The WAFCs will start providing SIGWX cumulonimbus, turbulence and icing verification in 2026 for multiple forecast timesteps, and are currently collecting the needed to create this.

SADIS FTP and WIFS

2.10 No changes have been made to SADIS FTP or WIFS in the past year.

2.11 On 12 August 2025 WAFC London was alerted to a cyber security issue where login in details had been compromised by a third party. In response it was decided that it was necessary for all SADIS FTP users to change their login passwords, and this was implemented at 09 UTC on 19 August 2025. Data on SADIS FTP was not compromised as it is read only.

2.12 **IMPORTANT - It is planned to retire the SADIS FTP and WIFS systems in November 2028** so all users will need take action soon to move across to the SADIS API or WIFS API prior **to that date**. Registration information is available here:

- SADIS API: <https://www.metoffice.gov.uk/services/transport/aviation/regulated/international-aviation/sadis/sadis-api>
- WIFS API: <https://aviationweather.gov/wifs/api.html>

2.13 Moving over to the SADIS API or WIFS API brings the following benefits:

- Access to the higher resolution WAFS gridded data sets – more vertical levels, hourly forecast data from T+6 to T+24 and forecasts that go out to T+120 hours.
- Access to the new WAFS SIGWX forecasts – multi-timestep SIGWX data at 3-hourly intervals from T+6 to T+48.

2.14 The arrangements for backup access remains unchanged. So SADIS API users are entitled to use WIFS API for backup purposes and vice versa.

SADIS API

2.15 The SADIS API is now fully operational and comprises of three elements: one for provision of the higher resolution WAFS gridded data sets, one for the provision of WAFS SIGWX forecasts, and one for the provision of OPMET data.

2.16 Appendix A shows the users set up with access to the SADIS API as of 17 June 2026.

2.17 Information on the operation of the SADIS API is available here: <https://www.metoffice.gov.uk/services/transport/aviation/regulated/international-aviation/sadis/sadis-api/index>. It adheres to the EUROCONTROL SWIM technical infrastructure yellow profile, and is published in the EUROCONTROL SWIM registry (<https://eur-registry.swim.aero/services>). The API uses Open Geospatial Consortium Environmental Data Retrieval framework and is largely harmonized with its twin the WIFS API operated by WAFC Washington.

2.18 Registration for the SADIS API includes agreeing a set of terms and conditions, and getting set up onto the developer portal used by the Met Office.

2.19 Several updates/changes to the SADIS API have been made over the past year:

- In September 2025 the file naming convention used for individual pieces of METAR and TAF data which arrived into the system as collective/aggregated bulletins (this is how most are transferred over the Aeronautical Fixed System). This data is given an “ii” in the “TTAAii” header a value of “99” as part of the file name, and this applies to both TAC format and IWXXM format METARs and TAFs.
- In November 2025 an update was made to enable the publication of the new VONA messages (in TAC and IWXXM format).
- In February 2026 an update was made to the gridded data part of the SADIS API to fix a problem where the collection metadata was updating before the data had updated.

2.20 SADIS Users are entitled to a backup account with the WIFS and WIFS API systems provided by WAFC Washington (<https://aviationweather.gov/wifs/>), which can be used in the rare event that there is a SADIS outage. The backup account should be tested periodically to make sure that it can be utilized when the need arises.

WIFS API

2.21 Between September 2025 and February 2026, the WIFS API underwent a complete rewrite to improve API efficiency, simplify code maintenance, and increase consistency between WIFS and SADIS APIs.

- The upgraded WIFS API became operational in June 2026.

2.22 While user impacts were intentionally limited, users will experience the following changes:

- OPMET collection and location metadata endpoints will no longer be gzip compressed.
- The WMO header will be removed from OPMET TAC products.
- METAR and TAF collectives will be broken down by report, such that there will be one METAR or TAF per file.
- OPMET data requests will be limited to 5 minute boundaries (PT5M) and no longer 1 minute boundaries.
- Administrative messages will have a new “notices” collection.
- “TAC” and “IWXXM” subdirectories will be removed as well as the “.tac” and “.iwxxm” file extensions in zipped collections.
- Gridded data model runtime information moved to the items’ endpoint.

GENERAL SADIS MATTERS

SADIS Access

2.23 Appendix A provides a list of SADIS users located within the ASI-PAC region and is a subset of the latest “Status of Implementation of SADIS” document that can be found here: <https://www.icao.int/airnavigation/aeronautical-meteorological-service/documents> (please bookmark this link – the previous METP public pages have recently moved here). This list now indicates users who have also signed up to use the new SADIS API.

2.24 SADIS using States are also encouraged to accede to the SADIS Agreement if they have not already done so. Information in the SADIS cost recovery process and the SADIS Agreement is available here: <https://www.icao.int/sustainability/Joint-Financing/Pages/SADIS.aspx>

2.25 States within the ASI-PAC region who have acceded to the SADIS agreement and who use SADIS are: Australia, Bangladesh, Laos, Thailand and Vietnam.

SADIS Cost Recovery Administrative Group.

2.26 In accordance with Article VII of the SADIS Arrangement, the SADIS Cost Recovery Administrative Group (SCRAG) is responsible for administering the Arrangement. The group meets annually to determine the cost-share attributable to each Party and to review the costs associated with the provision of the SADIS service, along with any related financial activities.

2.27 SCRAG is composed of at least one Party from the Asia Region. Nominations for this role are coordinated through the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG).

2.28 Australia agreed to join the SCRAG last year, but an additional representative from the ASI-PAC region would be welcomed. There is a single 1-day meeting annually, usually held virtually in December.

2.29 Anyone interested in serving as the regional representative are invited to submit their candidacy to the ICAO Asia and Pacific (APAC) Office in advance of the meeting for consideration.

SADIS Efficacy Survey

2.30 The annual SADIS FTP efficacy survey for 2026 will commence on 1 September 2026. Users will be notified of it by SADIS administrative messages and State SADIS focal points will (hopefully) receive a letter from the ICAO Secretariat. The SADIS provider would like to thank those who responded last year and would like to encourage all SADIS users to participate in the 2025 Survey.

2.31 Results of the 2025 survey will soon be available on <https://www.icao.int/airnavigation/aeronautical-meteorological-service/documents>

2.32 Organizations that have signed up to the SADIS API will receive a separate SADIS API survey towards the end of 2026. Once user uptake of the SADIS API has increased further, this survey will be formalized.

SADIS Focal Points

2.33 A copy of parts of the SADIS Focal Points document is included as Appendix B. The full document is created and maintained by the ICAO Secretariat in Montreal, and is reliant on people informing them of changes to the focal points.

2.34 The full list mostly contains the national met services, or in some cases the ANSP for around 100 SADIS using states. This document is very overdue for an update – and there are some entries that can be removed entirely as they are no longer SADIS using States, some entries that are missing (Bhutan and Indonesia), and many out of date records as people have changed jobs.

2.35 The METSG/30 attendees are invited to review the entry for their State (in Appendix B), and to let the SADIS manager (SADISmanager@metoffice.gov.uk) know the new contact details.

Note: all fax numbers are being removed from the original document!

2.36 The METSG is invited to agree on the following action:

METSG/30 Action XX – SADIS Focal Point information

SADIS using States should:

- a) review the information provided in the SADIS Focal Points document (included as Appendix B)
- b) notify the SADIS manager with updated contact information or a request to delete the record by 30 September 2026 so that a document update can be initiated with the ICAO Secretariat.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the contents of this paper and undertake the SADIS efficacy survey if their organization is a SADIS user.

MET SG/30
Appendix A to WP/21

Appendix A – Status of implementation of SADIS

(17 June 2026)

Key:

SADIS FTP = operational user ('X') of SADIS FTP or SADIS API service
** = approved SADIS hardware and/or software supplier*

ICAO Contracting State		User		Location	SADIS FTP	SADIS API
No	Name	No	Name	Name		
ASIA REGION						
1.	Afghanistan	170.	PACTEC International	Kabul	X	
2.	Australia	171.	Bureau of Meteorology	Melbourne	X	X
	Australia	172.	Weather Zone	North Sydney	X	
	Australia	173.	Air Services Australia	Canberra	X	
	Australia	174.	Qantas			X
	Australia	175.	MetOps Weather	Pomona, QLD	X	
	Australia	176.	AvSoft Australia	Morrabbin, VIC		X
	Australia	177.	TAFHighlight			X
3.	Bangladesh	178.	National Meteorological Service	Dhaka Airport	X	
4.	Bhutan	179.	National Centre for Hydrology and Meteorology (NCHM)	Thimpu	X	X
5.	China – Hong Kong	180.	Hong Kong Observatory	Hong Kong Intl. Airport	X	X
	China - Macau	181.	Civil Aviation Authority	Macau Airport	X	
	China - Macau	182.	Meteorological and Geophysical Bureau	Macau	X	
6.	India	183.	India Meteorological Department	New Delhi	X	
	India	184.	Laminaar Aviation Infotech (formerly Sheory Digital Systems)	Mumbai	X	X
7.	Indonesia	185.	Badan Meteorologi Klimatologi dan Geofisika (BMKG)	Sultan Hasanuddin International Airport, Makassar	X	
8.	Lao People’s Democratic Republic	186.	Ministry of Natural Resource and Environment	Vientiane International Airport	X	
9.	Maldives	187.	National Meteorological Service	Male Airport	X	
10.	Nepal	188.	National Meteorological Service	Kathmandu Airport	X	
11.	Pakistan	189.	Meteorological Department	Karachi	X	
12.	Thailand	190.	Thai Meteorological Department	Suvarnabhumi Airport	X	
	Thailand	191.	Thai Meteorological Department	Don Mueang Airport	X	
13.	Viet Nam	192.	Civil Aviation Authority	Hanoi	X	
	Viet Nam	193.	Airports Corporation of Vietnam (ACV)	Tan Son Nhat Airport, Ho Chi Min City	X	
	Viet Nam	194.	Airports Corporation of Vietnam (ACV)	Noi Bai Int. Airport	X	

Appendix B – SADIS Focal Point information

Focal point information for SADIS using States in the ASI-PAC region

State	New details	Phone/e-mail
Australia	Mr. Ian SENIOR Communications Software Information Technologies Branch Bureau of Meteorology	Tel: +61 3 9669 4293 E-mail: srcs@bom.gov.au i.senior@bom.gov.au
Bangladesh	Mr. Manzurul Haque KHAN Meteorologist Main MET Office	Tel: +880 (2) 891 4543 Email: mhkhan_bmd@yahoo.com
Bhutan	No details	
China – Hong Kong	Mr. Pak-wai CHAN Senior Scientific Officer Hong Kong Observatory	Tel: +852 2926 8435 E-mail: pwchan@hko.gov.hk
China - Macao	Mr. Weng Kun LEONG (Ivan) Chief of Aeronautical MET Centre Macao Meteorological and Geophysical Bureau	Tel: +853 8898 6290 Fax: +853 2885 0557 E-mail: wkleong@smg.gov.mo
India	Dr. S. L. SINGH Scientist “E”, Information Systems and Services Division (ISSD) India Meteorological Department	Tel: +91 11 4382 4314; +91 11 24693186 E-mail: sl.singh@imd.gov.in slsinghp@gmail.com
Indonesia	No details	
Lao	Mr. Singthong PATHOUMMADY Chief MET Station Network and Telecommunications Division Department of Meteorology and Hydrology	Tel: +856 (21) 215 010 E-mail: dmhvte@laotel.com
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