



International Civil Aviation Organization

**FOURTEENTH MEETING OF THE
COMMUNICATIONS/NAVIGATION/SURVEILLANCE
AND METEOROLOGY SUB-GROUP OF
APANPIRG (CNS/MET SG/14)**



Jakarta, Indonesia, 19 – 22 July 2010

Agenda Item 8: Regional Implementation of World Area Forecast System (WAFS)

3) other WAFS (ISCS & SADIS) Implementation Issues

OVERVIEW OF WIFS INTERNET SITES

(Presented by the United States of America)

SUMMARY

This Information Paper provides an overview of the operational World Area Forecast System (WAFS) Internet File Service (WIFS) sites that support access to WAFS data products.

This paper relates to:

Strategic Objectives:

- A. Safety – Enhance global civil aviation safety
- D. Efficiency – Enhance the efficiency of aviation operations

Global Plan Initiatives:

- GPI-18 Aeronautical information
- GPI-19 Meteorological Systems

1. Introduction

1.1 As of 1 May 2010 the replacement service for World Area Forecast System (WAFS) data products, the WAFS Internet File Service (WIFS), became operational. This new service will operate in parallel to the current ISCS Satellite service which will stop broadcasting WAFS data products in two years time. Starting in June 2012, WIFS will be the only available service providing access to WAFS data products.

2. Discussion

2.1 It should also be noted that in the past, the term WIFS had been incorrectly stated to be the WAFS Internet File **Server**. From here on out, the term WIFS will be stated to be the WAFS Internet File **Service**.

2.2 The U.S. has now set up the new Internet-based service (WIFS) that provides access to various WAFS data products to approved WAFS users. The WAFS data products are now hosted on multiple web-farms, all within the U.S., and the service provider (the National Weather Service) has attained Qualified Internet Communications Provider (QICP) status which approves them to deliver weather data over the public internet.

2.3 The Federal Aviation Administration (FAA) is the authorizing agency that grants approval for WAFS users to access WIFS. Once approved, the WIFS site administrators will assign a username and password that will enable authorized WAFS users to access WIFS. WAFS users can start the authorization process by filling out the associated form that can be found in the WIFS Users Guide and on the WIFS website.

2.4 An overview of the WIFS website and WIFS servers is provided in Attachment 1, WIFS Overview.

3. Action required by the Meeting

3.1 The meeting is invited to note the information in this paper.

(See WIFS Overview Power Point, Attachment 1)

WAFS Internet File Service (WIFS)

- WAFS data became operationally available via WIFS 5/1/2010
- On 7/1/2012 WIFS will be the only means to access WAFS data as ISCS Satellite service contract expires
- WAFS users now have only 24 months left to transition to WIFS

Operational WIFS Internet Sites

1. WIFS Support Web-site

<http://aviationweather.gov/wifs/>

2. WIFS File Servers

<https://hq.aviationweather.gov/wifs/data>

<https://srh.aviationweather.gov/wifs/data>

<https://crh.aviationweather.gov/wifs/data>

WIFS - Windows Internet Explorer

http://aviationweather.gov/wifs/

WIFS

WAFS Internet File Service (WIFS) Application
Aviation Weather Center CAWS System

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The World Area Forecast System (WAFS) Internet File Service (WIFS) is provided by the United States National Weather Service (NWS) Aviation Weather Center (AWC) as a highly reliable Internet source of meteorological products. The purpose of WIFS is to provide timely delivery of critical aviation-related weather information to support air traffic management and flight operations in over 80 countries, and regional meteorological telecommunications between the United States and nations in the Caribbean and Central America. This service is available to all authorized customers. Once the FAA approves a user state to access the WIFS system, the AWC will issue a user name and password which will be required to access the data. The International Civil Aviation Organization (ICAO), in Amendment 75 to Annex 3, recognizes the use of the Internet to access aviation weather data in support of flight planning. The WIFS provides this capability and serves an important function backing up the International Satellite Communications System (ISCS). The FAA plans to discontinue the satellite service in June of 2012. The WIFS will become the primary service at that time.

This application requires a user id and password.

[Return to Aviation Weather Center](#)

How to Register

Please e-mail the following information to wifs.admin@noaa.gov. All fields are required unless specifically stated as optional.

<u>Field Description</u>	<u>Example</u>
ICAO LID:	AAXS
NAME (point of contact):	Ms. Judi Reno
TITLE (optional):	Executive Officer, Systems Engineering
ORGANIZATION:	Aeronautical Ltd.
WORKSTATION ADDR:	523 Saywer

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http://aviationweather.gov/wifs/page/open/id/19

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World Aviation Forecast System (WAFS) Internet File Services (WIFS)

Description:
The World Area Forecast System (WAFS) Internet File Service (WIFS) is provided by the United States National Weather Service (NWS) Aviation Weather Center (AWC) as a highly reliable Internet source of meteorological products. The purpose of WIFS is to provide timely delivery of critical aviation-related weather information to support air traffic management and flight operations in over 80 countries, and regional meteorological telecommunications between the United States and nations in the Caribbean and Central America. This service is available to all authorized customers. Once the FAA approves a user state to access the WIFS system, the AWC will issue a user name and password which will be required to access the data. The International Civil Aviation Organization (ICAO), in Amendment 75 to Annex 3, recognizes the use of the Internet to access aviation weather data in support of flight planning. The WIFS provides this capability and serves an important function backing up the International Satellite Communications System (ISCS). The FAA plans to discontinue the satellite service in June of 2012. The WIFS will become the primary service at that time.

The WIFS is an integral part of the AWC's Consolidated Aviation Web Services (CAWS) system which has been certified by the Federal Aviation Administration (FAA) as a Qualified Internet Communications Provider (QICP). The CAWS system provides QICP certification and access to the real-time repository for the WIFS application via the HTTPS protocol. The primary open source product for access using the HTTPS protocol is the "GNU Wget package" (GNU is a recursive acronym for "GNU's Not Unix" and is pronounced "guh-NEW"). For the purposes of meeting the ICAO Document 9855 (Guidelines on the Use of the Public Internet for Aeronautical Applications) and the FAA's Advisory Circular 00-62 for the Qualified Internet Communications Provider (QICP) requirement, there are three geographically remote web farms that house the WIFS data.

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http://aviationweather.gov/wifs/page/open/id/11

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Weather Products

Products For WAFS Internet File Services (WIFS)

WIFS disseminates products prepared by two centers of the National Weather Service (NWS) [National Centers For Environmental Prediction \(NCEP\)](#) (1) the [Aviation Weather Center \(AWC\)](#), and (2) the [NCEP Central Office \(NCO\)](#) WIFS products are also produced at over 122 NWS Offices nationwide. There are three types of products:

- (1) Gridded Binary (GRIB) Coded Data (produced at EMC), containing forecasts of upper wind and temperature data, tropopause height and temperature, and maximum wind (height, speed, direction), using [GRIB and GRIB2](#), and a 1.25 x 1.25 degree global grid for flight planning.
- (2) Charts (T4 coded facsimile charts) providing upper-air wind and temperature forecasts at selected flight levels (produced at EMC), and significant weather ([SIGWX](#)) forecasts (produced at AWC). Volcanic ash dispersion advisories are included when available.
- (3) Operational Meteorology (OPMET) alphanumeric messages, consisting of (a) routine aviation weather reports ([METARs](#)), produced by Federal Aviation Administration (FAA) contract observers at airports, (b) special reports (SPECIs) which are METARs issued on a non-routine basis, also produced by FAA observers at airports, (c) terminal aerodrome forecasts ([TAFs](#)), produced at NWS Weather Forecast Offices (WFO) by NWS forecasters, (d) en-route hazardous weather warnings of significant meteorological information

WAFS Internet File Service (WIFS) Application
Aviation Weather Center CAWS System

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products, and has responsibility for the management and operation of both the ISCS and the WIFS.

WIFS is available for use 24x7. Between the hours of 8:00 am and 5:00 pm Central Time, Monday through Friday, live WIFS technical support is provided by the AWC. To contact AWC WIFS technical support, use the following email address and phone number.

E-mail: wifs.admin@noaa.gov

Phone: 1(816) 584-7200

Outside of normal AWC support hours, users can expect a response from the AWC within three business days. If users require immediate help outside of AWC business hours they should contact the NWS Telecommunications Operations Center Help Desk for support:

E-mail: wif.support@noaa.gov

Phone: 1(815) 584-7200

Symtom	Probable Cause	Actions to Take
Data out of date, cannot be retrieved, or is not being properly displayed on the missing on the workstation	WAFS data retrieve process failed	Test the internet connection (Note 1) Check the data retrieve log file for errors (Note 2) Contact the WAFS workstation support team
	Data on WIFS is out of date	Test the internet connection (Note 1) Browse to the WIFS online file list and check to see if data is up to date (Note 3) If data is out of date send an email to wifs.admin@noaa.gov and contact the NWSTG to report the problem.(Note 4)

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http://aviationweather.gov/wifs/page/open/id/10

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WAFS workstation Vendors

ISCS Workstation Vendors

Database of Manufacturers of Meteorological Workstation Equipment can be found at:

<http://www.metoffice.com/sadis/about/manufacturers.html>

(La base de datos de las empresas fabricantes del equipo para la estacion de trabajo meteorologica se pueden encontrar por la red del internet en la siguiente direccion).

Each manufacturer should be asked if their workstation equipment meets the ISCS Workstation Specification document.

(Cuando se comuniquen con los fabricantes, aseguren que el equipo esta actualizado con los parametros necesarios para ISCS. Establecidos en el Documento de la Especificacion para las Estaciones de Trabajo del ISCS.

Disclaimer:

The ISCS Program Office does not recommend and does not endorse workstation equipment or workstation software from any vendor. Each manufacturer should be asked if their workstation equipment meets the WAFS Workstation Software Specification document. Information on the software specification and evaluation information can be found at:

<http://www.metoffice.com/sadis/software/index.html>

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Changes

Data Changes

RC	Advisory	Description	PDF	Data	Status
0001B	NOTAM / ASTAM	Volcanic Ash Advisory	ISCS-0001B.pdf	DATA-0001B.txt	Pending
0012.02	NA	Harmonization of ISCS/WAFS - CARSAM region Amendment 2	ISCS-0012_2.pdf	DATA-0012_2.txt	Pending
0013	NA	Migration of ISCS sockets	ISCS-0013.pdf	DATA-0013.txt	Pending
0015.01	NA	ISCS/WAFS broadcast of the Volcanic Ash Graphic (VAG)	ISCS-0015B.pdf	DATA-0015B.txt	Pending
0017	NA	Transition of Gridded Binary (GRIB) data format from GRIB-1 to GRIB-2	ISCS-0017.pdf	DATA-0017.txt	Pending
0017.01	NA	Transition of Gridded Binary (GRIB) data format from GRIB-1 to GRIB-2 Amendment 1	ISCS-0017_1.pdf	DATA-0017_1.txt	Pending
0018	NA	High-at-Glance Significant Weather (SIGWX) Forecasts	ISCS-0018.pdf	DATA-0018.txt	Pending

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http://aviationweather.gov/wifs/page/open/id/5

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WIFS Documentation

Draft Documents Available

To view the draft ICD [click here](#)

To view the draft User's Guide [click here](#)




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http://aviationweather.gov/wifs/images/upload/WIFS_Users_Guide_v1.2.pdf - Windows Internet Explorer

http://aviationweather.gov/wifs/images/upload/WIFS_Users_Guide_v1.2.pdf

http://aviationweather.gov/wifs/images/upload/WIFS...

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The World Area Forecast System (WAFS) Internet File Service (WIFS) Users Guide

By
WAFC Washington

Version 1.2

April 26, 2010

http://aviationweather.gov/wifs/images/upload/WIFS_Users_Guide_v1.2.pdf - Windows Internet Explorer

http://aviationweather.gov/wifs/images/upload/WIFS_Users_Guide_v1.2.pdf

http://aviationweather.gov/wifs/images/upload/WIFS...

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Table 1 WIFS Primary URL for HTTPS Access

Web Farm	First Letter of State²	Base WIFS URL¹
NWS National Headquarters	A, B, C, D, E, F, G, H, I	https://hq.aviationweather.gov/wifs/data
NWS Southern Region Headquarters	J, K, L, M, N, O, P, Q, R, S	https://srh.aviationweather.gov/wifs/data
NWS Central Region Headquarters	T, U, V, W, X, Y, Z	https://crh.aviationweather.gov/wifs/data

1 Specific data are stored in separate subdirectories. See Table 2.

2 State name spelling in U.S. English.

Users will require a user ID and password to access the WIFS via the Internet. Recommended Internet connection is a minimum of 64 kbps, bursting to 512 kbps. Once the data is retrieved from the WIFS, users require application software that is capable of ingesting and displaying the WAFS data. Additionally, the software needs to be able to access the WAFS data directly from the appropriate WIFS URL (as indicated in Table 1). A list of WAFS workstation providers can be found at

http://aviationweather.gov/wifs/images/upload/WIFS_Users_Guide_v1.2.pdf - Windows Internet Explorer

http://aviationweather.gov/wifs/images/upload/WIFS_Users_Guide_v1.2.pdf

http://aviationweather.gov/wifs/images/upload/WIFS...

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5. Directory Structure

The WIFS directory structure, with respect to the base URL (e.g., <https://srh.aviationweather.gov/wifs/data>), is provided below.

```
/BUFR
/GRIB
/GRIB2
  /KWBC
    /trial_forecasts
      /ice
      /cb
      /cat
      /incldturb
  /EGRR
    /trial_forecasts
      /ice
      /cb
      /cat
      /incldturb

/OPMET_HOURLY
/OPMET_MINUTE
/OPMET_ROLLING
/ISCS_ADMIN_MSG
/PNG
```

Table 2 lists the subdirectory name, the file format, and a description of the

http://aviationweather.gov/wifs/images/upload/WIFS_Users_Guide_v1.2.pdf - Windows Internet Explorer

http://aviationweather.gov/wifs/images/upload/WIFS_Users_Guide_v1.2.pdf

http://aviationweather.gov/wifs/images/upload/WIFS...

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<i>WIFS Subdirectory¹</i>	<i>File Format</i>	<i>Data Description</i>
OPMET-MINUTE	ASCII	Files containing one minute's worth of METARs/SPECIs, TAFs, SIGMETs, Advisories, Air Reports, NOTAMs, ASHTAMs
OPMET-HOURLY	ASCII	Files containing one hour's worth of METARs/SPECIs, TAFs, SIGMETs, Advisories, Air Reports, NOTAMs, ASHTAMs
OPMET-ROLLING	ASCII	5/30/60 minute window files containing METARs/SPECIs, TAFs, SIGMETs, Advisories, Air Reports, NOTAMs, ASHTAMs
GRIB	GRIB Edition 1	Model Forecast Grids
GRIB2 ²	GRIB Edition 2	Model Forecast Grids
BUFR	B inary U niversal F orm for the R epresentation of meteorological data (BUFR)	Significant Weather
PNG	Portable Network Graphics (PNG)	Significant Weather Images
ISCS_ADMIN_MSG	ASCII	Administrative Notices

Operational WIFS Internet Sites

1. WIFS Support Web-site

<http://aviationweather.gov/wifs/>

2. WIFS File Servers

<https://hq.aviationweather.gov/wifs/data>

<https://srh.aviationweather.gov/wifs/data>

<https://crh.aviationweather.gov/wifs/data>

Index of /wifs/data











<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
 Parent Directory		-	
 BUFR/	22-Jun-2010 19:00	-	
 GRIB/	22-Jun-2010 17:30	-	
 GRIB2/	06-May-2010 23:00	-	
 ISCS ADMIN MSG/	22-Jun-2010 21:10	-	
 OPMET-HOURLY/	22-Jun-2010 21:00	-	
 OPMET-MINUTE/	22-Jun-2010 21:14	-	
 OPMET-ROLLING/	29-Mar-2010 18:23	-	
 PNG/	22-Jun-2010 19:00	-	

Index of /wifs/data/GRIB2/KWBC - Windows Internet Explorer






















https://aviationweather.gov/wifs/data/GRIB2/KWBC/

Index of /wifs/data/GRIB2/KWBC

Index of /wifs/data/GRIB2/KWBC

<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
 Parent Directory	-	-	-
 20100621 1800 YHXE50 KWBC.grib2.WAFS.GRIB2	21-Jun-2010 22:23	43K	
 20100621 1800f06.grib2	21-Jun-2010 22:35	1.5M	
 20100621 1800f09.grib2	21-Jun-2010 22:35	1.5M	
 20100621 1800f12.grib2	21-Jun-2010 22:36	1.5M	
 20100621 1800f15.grib2	21-Jun-2010 22:39	1.5M	
 20100621 1800f18.grib2	21-Jun-2010 22:38	1.4M	
 20100621 1800f21.grib2	21-Jun-2010 22:39	1.5M	
 20100621 1800f24.grib2	21-Jun-2010 22:40	1.5M	
 20100621 1800f27.grib2	21-Jun-2010 22:40	1.5M	
 20100621 1800f30.grib2	21-Jun-2010 22:40	1.5M	
 20100621 1800f33.grib2	21-Jun-2010 22:40	1.5M	
 20100621 1800f36.grib2	21-Jun-2010 22:40	1.5M	
 20100622 0000 YHXE50 KWBC.grib2.WAFS.GRIB2	22-Jun-2010 04:21	38K	
 20100622 0000f06.grib2	22-Jun-2010 04:28	1.5M	
 20100622 0000f09.grib2	22-Jun-2010 04:37	1.5M	
 20100622 0000f12.grib2	22-Jun-2010 04:37	1.5M	
 20100622 0000f15.grib2	22-Jun-2010 04:37	1.5M	
 20100622 0000f18.grib2	22-Jun-2010 04:37	1.5M	
 20100622 0000f21.grib2	22-Jun-2010 04:37	1.5M	
 20100622 0000f24.grib2	22-Jun-2010 04:37	1.5M	

Index of /wifs/data/OPMET-HOURLY

<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
 Parent Directory		-	
 20100621_09_OPMET	21-Jun-2010 10:04	1.0M	
 20100621_10_OPMET	21-Jun-2010 11:00	1.1M	
 20100621_11_OPMET	21-Jun-2010 11:59	1.8M	
 20100621_12_OPMET	21-Jun-2010 13:00	1.1M	
 20100621_13_OPMET	21-Jun-2010 13:59	1.2M	
 20100621_14_OPMET	21-Jun-2010 14:59	1.3M	
 20100621_15_OPMET	21-Jun-2010 16:04	1.1M	
 20100621_16_OPMET	21-Jun-2010 16:59	946K	
 20100621_17_OPMET	21-Jun-2010 17:59	1.5M	
 20100621_18_OPMET	21-Jun-2010 18:59	1.5M	
 20100621_19_OPMET	21-Jun-2010 19:59	1.0M	
 20100621_20_OPMET	21-Jun-2010 20:59	1.3M	
 20100621_21_OPMET	21-Jun-2010 22:06	1.0M	
 20100621_22_OPMET	21-Jun-2010 22:59	1.1M	
 20100621_23_OPMET	21-Jun-2010 23:59	1.6M	
 20100622_00_OPMET	22-Jun-2010 00:59	1.0M	
 20100622_01_OPMET	22-Jun-2010 01:59	1.0M	
 20100622_02_OPMET	22-Jun-2010 02:59	1.1M	
 20100622_03_OPMET	22-Jun-2010 04:03	1.0M	
 20100622_04_OPMET	22-Jun-2010 04:59	1.1M	

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Appendix A: Wget Description

GNU Wget is a free software package for retrieving files using HTTP, HTTPS and FTP, the most widely-used Internet protocols. It is a non-interactive command-line tool that can be executed from programs, scripts, and cron jobs. GNU Wget has many features to make retrieving large files easy, including:

- Can resume aborted downloads, using `REST` and `RANGE`
- Can use filename wild cards and recursively mirror directories
- NLS-based message files for many different languages
- Optionally converts absolute links in downloaded documents to relative, so that downloaded documents may link to each other locally
- Runs on most UNIX-like operating systems as well as Microsoft Windows
- Supports HTTP proxies
- Supports HTTP cookies
- Supports persistent HTTP connections
- Unattended / background operation
- Uses local file timestamps to determine whether documents need to be re-downloaded when mirroring
- GNU Wget is distributed under the GNU General Public License.

To download Wget, navigate to <http://ftp.gnu.org/gnu/wget/>.

Detailed GNU Wget documentation can be found at <http://www.gnu.org/software/wget/manual/>. For other manuals, please see <http://www.gnu.org/manual/>.

Done Unknown Zone

Example of wget

```
wget --user=xxx --password=yyy --no-check-certificate -r -R "*bufr" -l1  
"https://crh.aviationweather.gov/wifs/data/BUFR/"
```

Where xxx and yyy are the username and passwords assigned by WIFS

- This example would retrieve all of the files from the BUFR folder