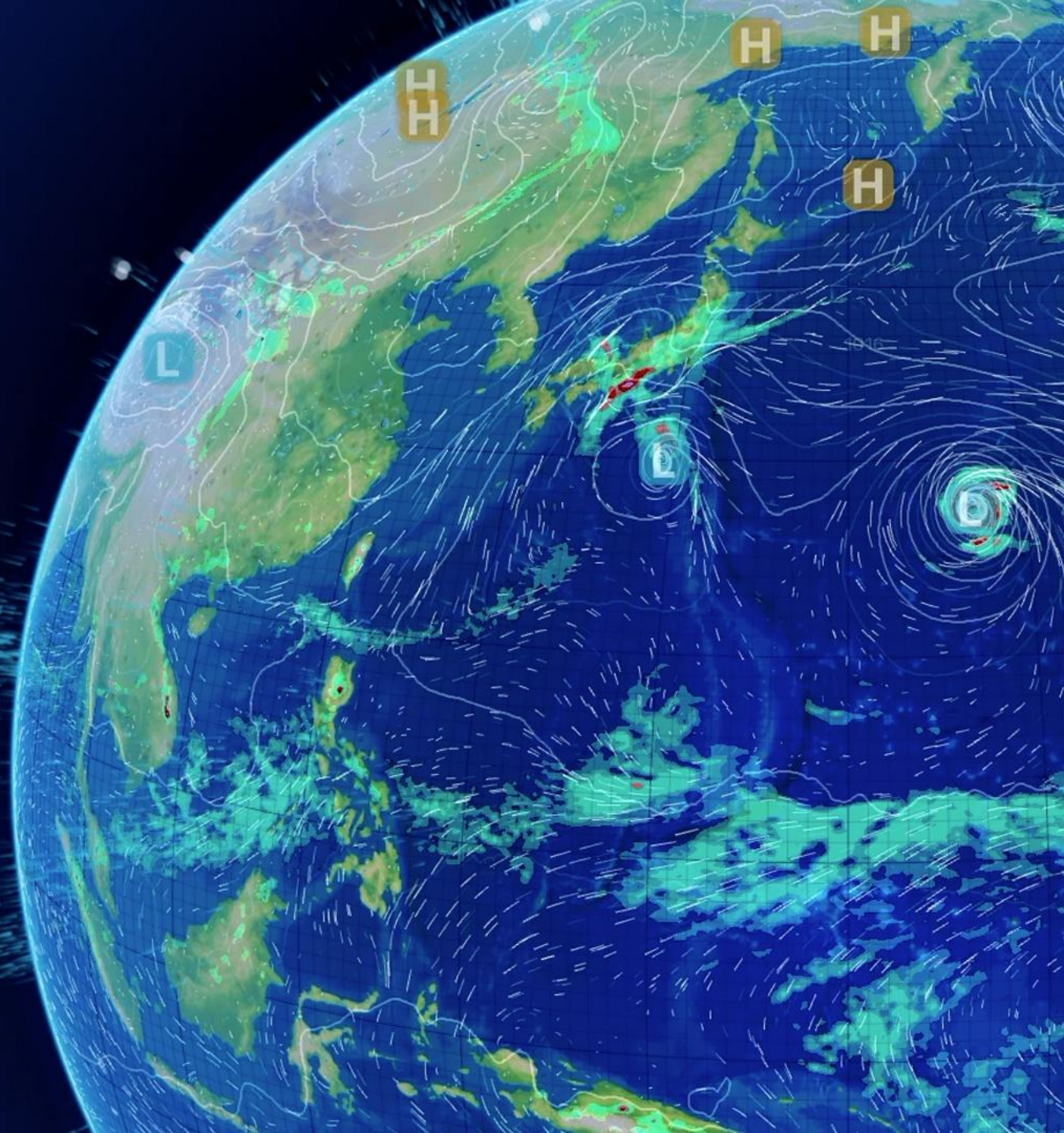
SADIS API

Karen Shorey
SADIS and WAFC London Manager



Met Office

SADIS

- SADIS has been operated by the Met Office System in various versions since 1994.
- Originally it used a satellite, then switched to use the internet (ftp).

- SADIS FTP is not able to handle the huge increase in data volume that comes with the new WAFS gridded data sets
- SADIS FTP also isn't (and can't be made to be) SWIM compliant in line with ICAO recommendations.

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

Met Office

WHY SHOULD I USE THE SADIS API?

- The existing SADIS FTP is due to be retired in November 2028
- SADIS API is the only way to get the new, higher resolution WAFS gridded data sets

Met Office

WHY SHOULD I USE THE SADIS API?

These new data sets became part of ICAO Annex 3 (and the PANS-MET) with Amendment 82

NEW 0.25-DEGREE WAFS DATA SETS

Forecast Timesteps:

T+06 to T+24 at 1-hourly intervals

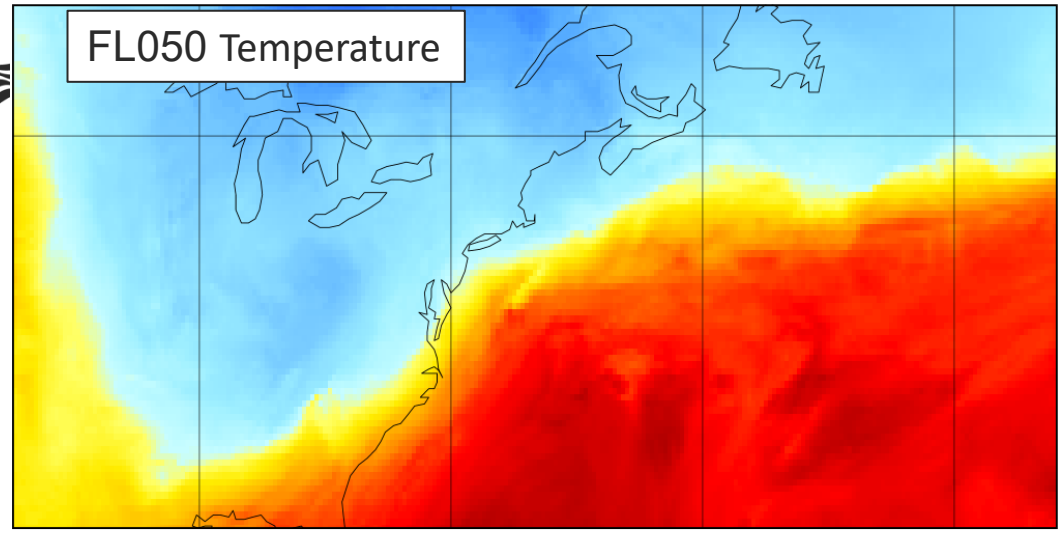
T+27 to T+48 at 3-hourly intervals[1]

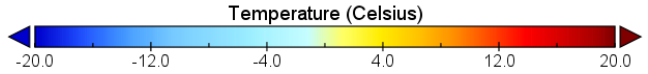
T+54 to T+120 at 6-hourly intervals[2]

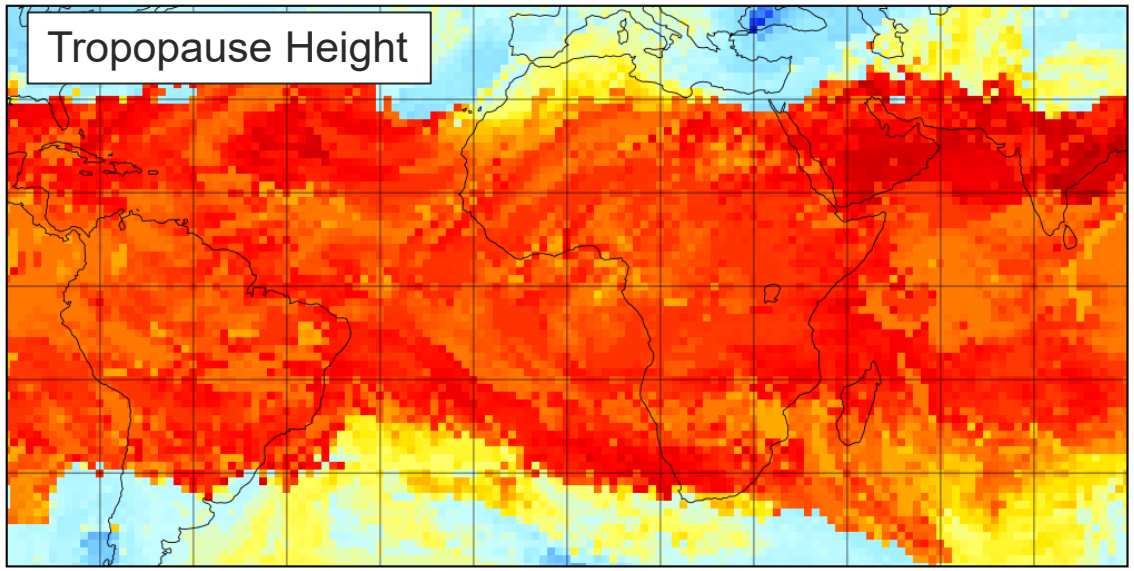
[1]Icing, Turbulence and Cumulonimbus stops at T+48

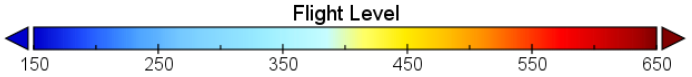
[2]WAFC London data past T+66 is only produced for the 00Z and 12Z model runs

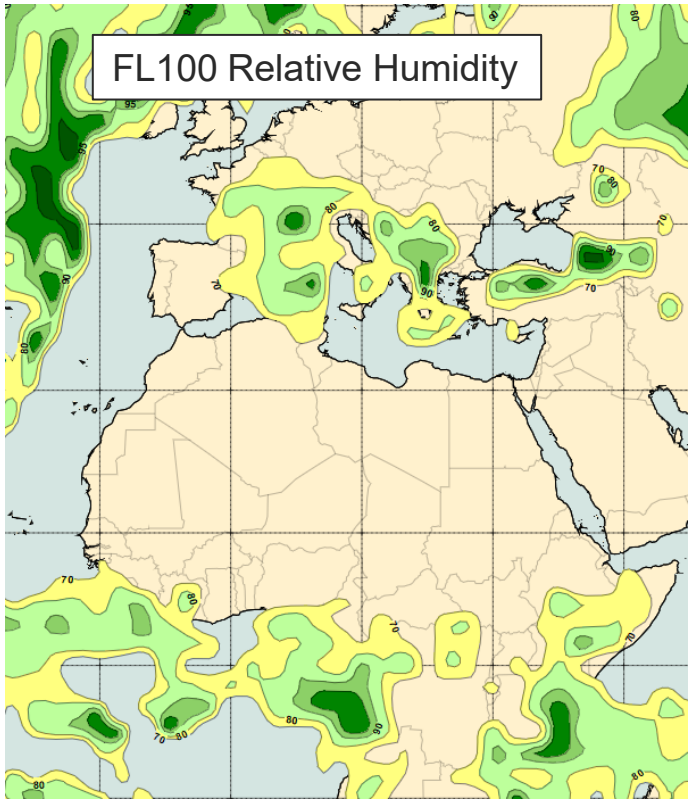
Wind U/V - 56 vertical levels from FL050 to FL600
Temperature - 56 vertical levels from FL050 to FL600
Geospatial Height - 56 vertical levels from FL050 to FL600
Relative Humidity - 14 vertical levels from FL050 to FL180
Tropopause height and Tropopause temperature
Max wind height, and max wind u/v
Icing Severity - 26 vertical levels from FL050 to FL300
Turbulence Severity - 36 vertical levels from FL100 to FL450
Cumulonimbus Extent, Base and Top

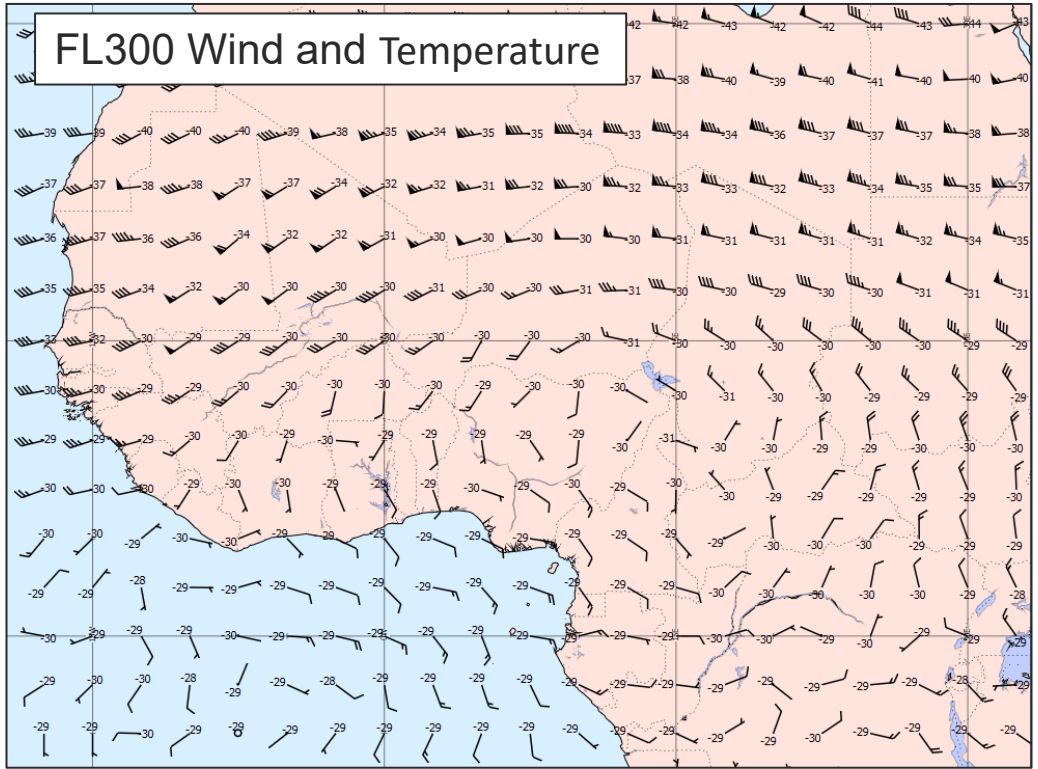

FL050 Temperature


Temperature (Celsius)
-20.0
-12.0
-4.0
4.0
12.0
20.0

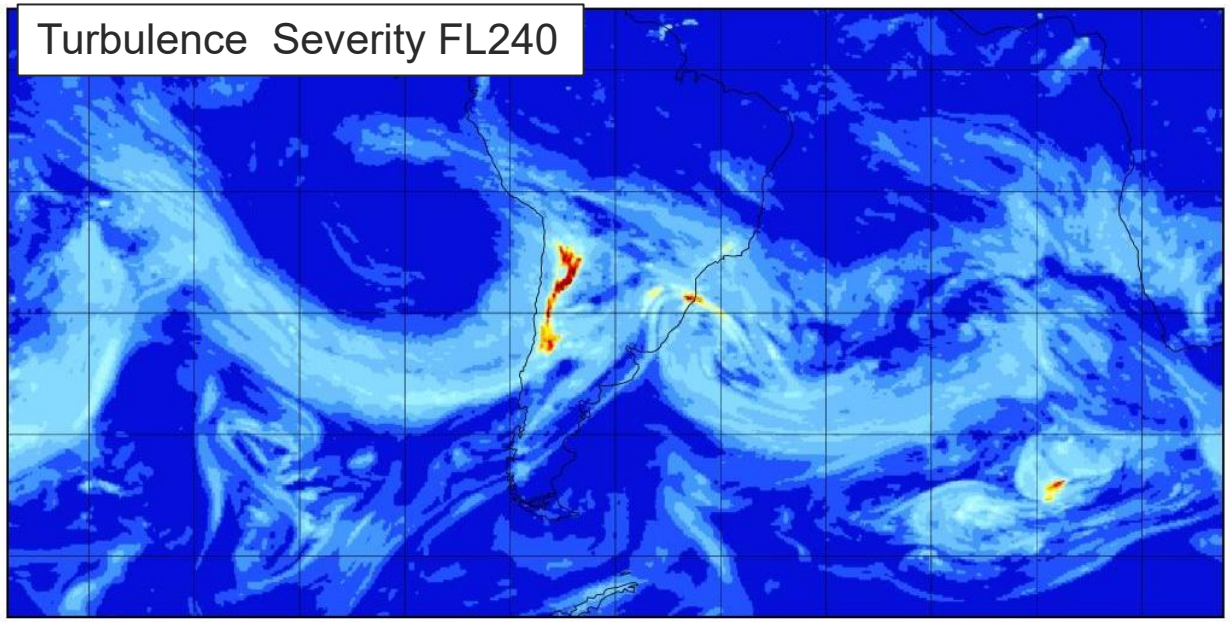

Tropopause Height


Flight Level
150
250
350
450
550
650

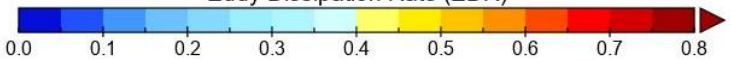

FL100 Relative Humidity


FL300 Wind and Temperature

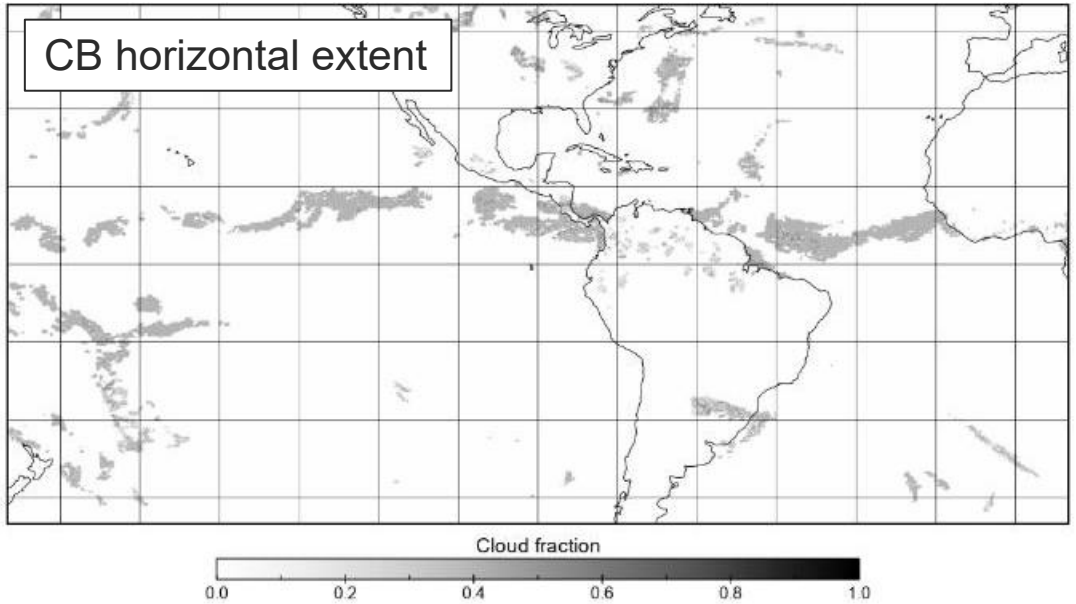
Turbulence Severity FL240



Eddy Dissipation Rate (EDR)

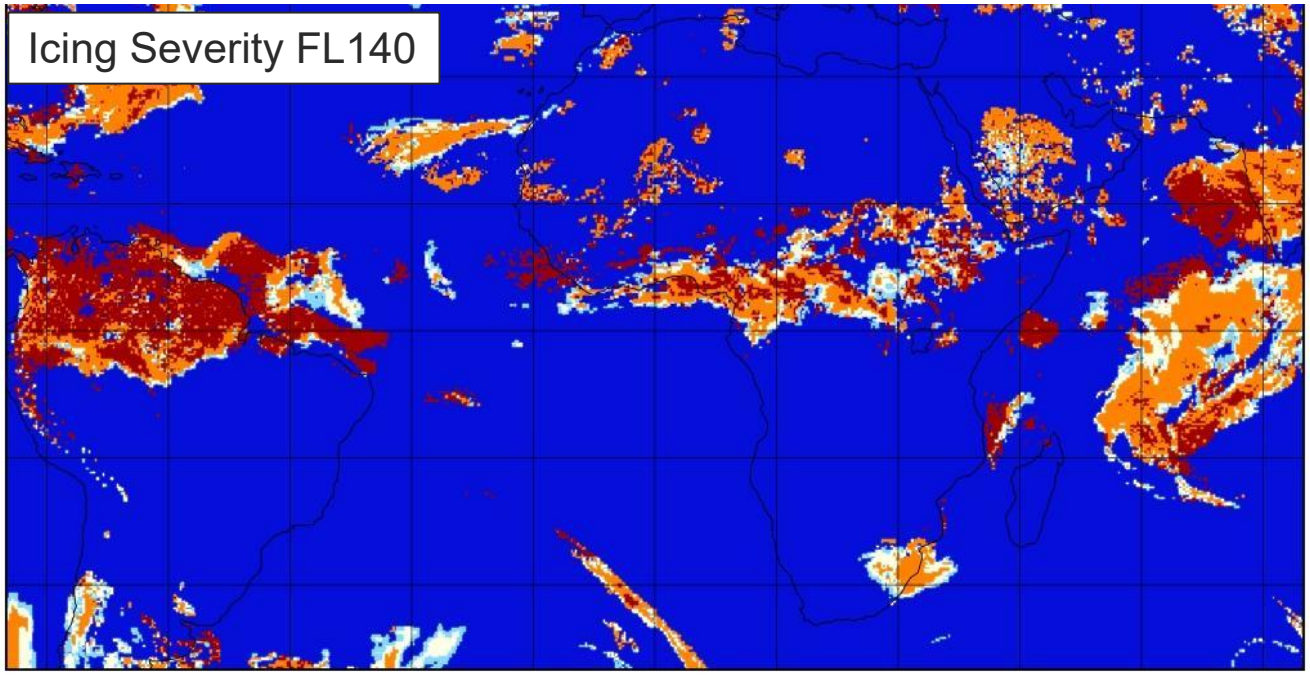


CB horizontal extent

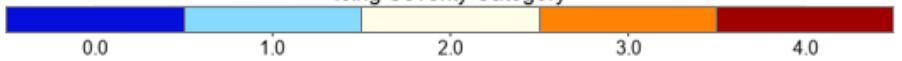


Cloud fraction

Icing Severity FL140



Icing Severity Category



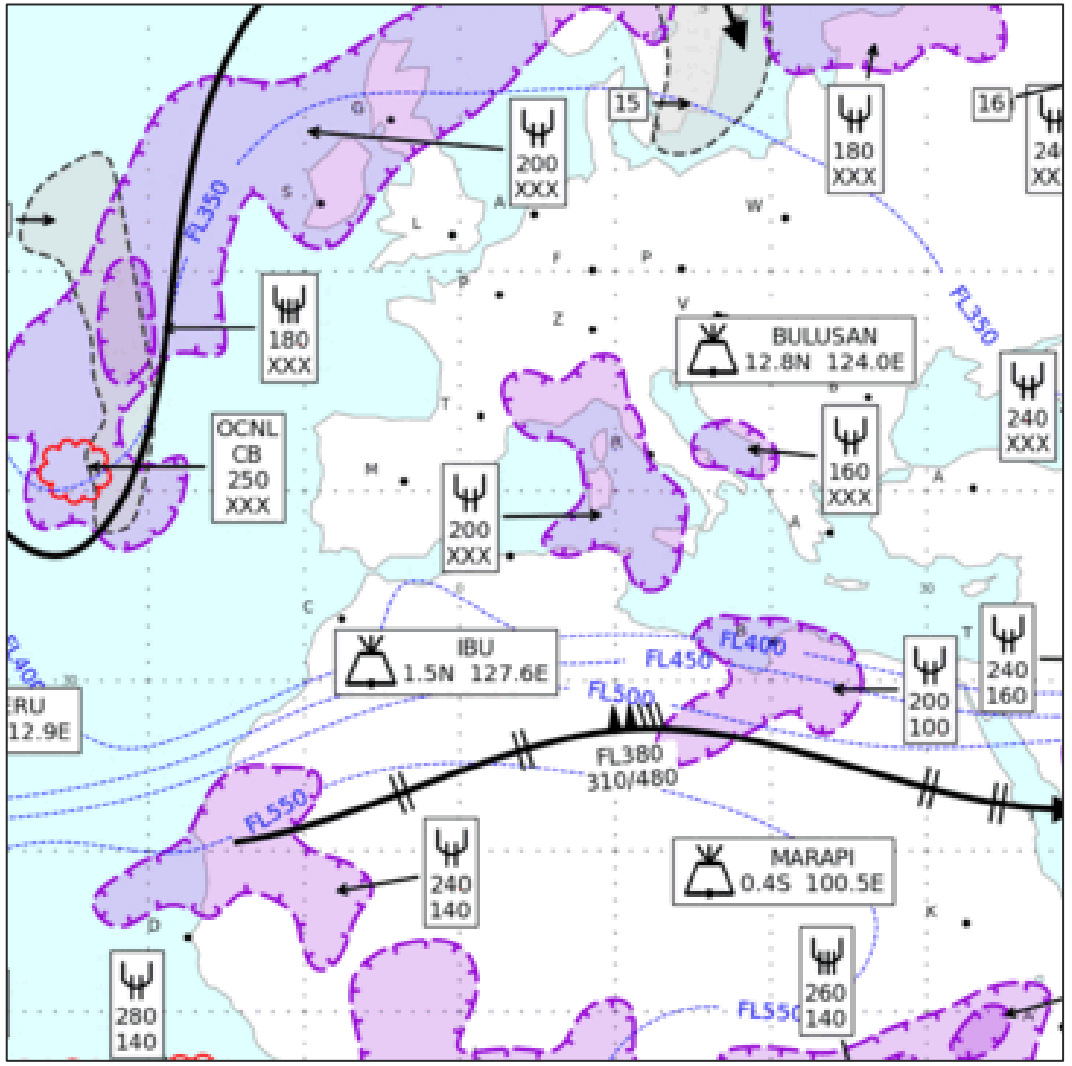
Met Office

NEW SIGWX ON SADIS API

- Multi-timestep SIGWX forecasts:
  T+6 to T+48 at 3-hourly intervals
- Covers FL100 to FL600
- New IWXXM format, same parameters

Cross checking charts (not briefing quality):

- Mercator chart spanning globe
- N. Polar chart
- S. Polar Chart

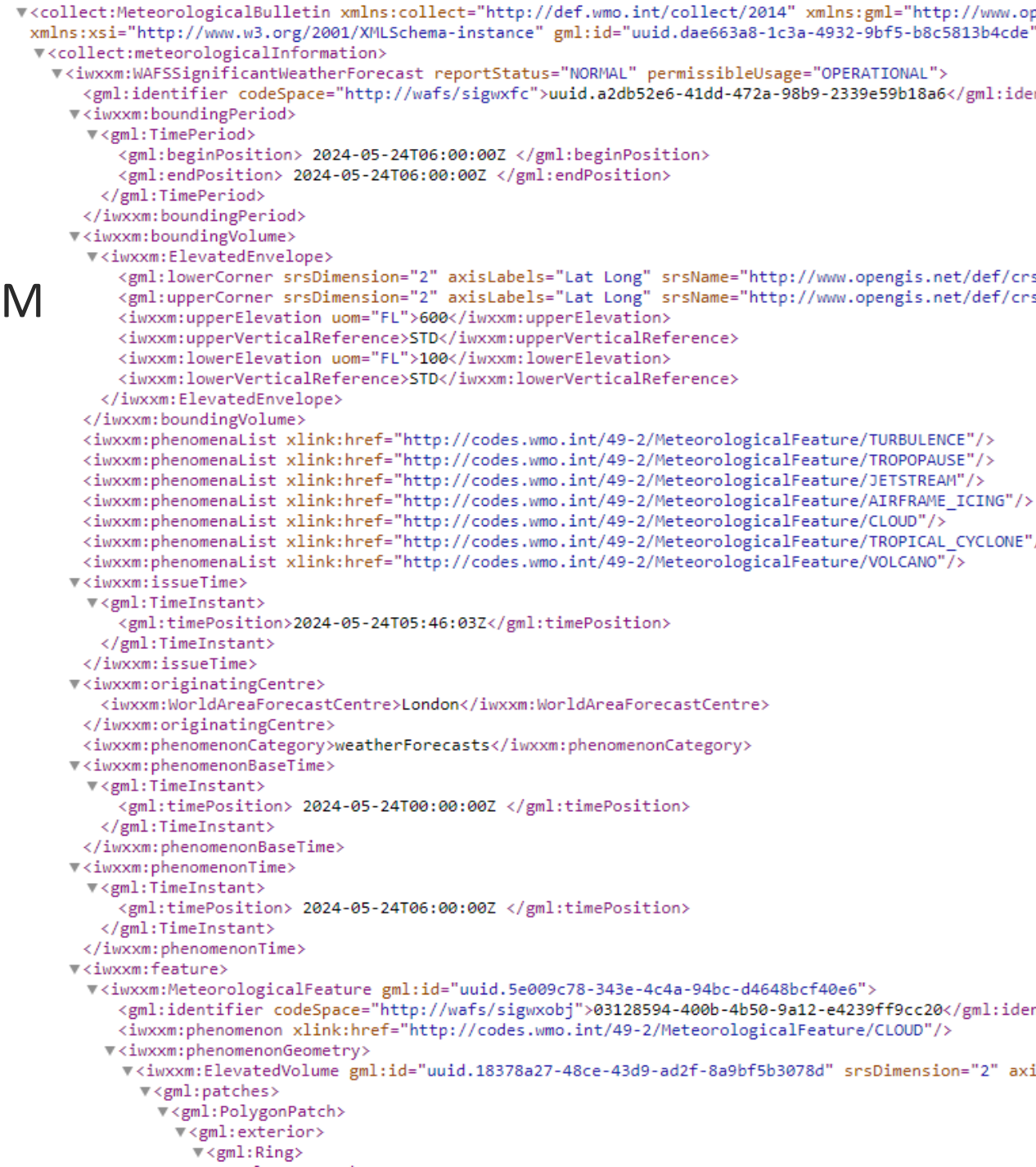


Met Office

SIGWX IWXXM FORMAT

The new SIGWX data will be provided in IWXXM format. The schema has been developed and approved by WMO

https://schemas.wmo.int/iwxxm/2023-1/WAFSSigWxFC.xsd



Met Office

SADIS API

- Became operational in March 2024 for the WAFS Gridded and OPMET data
- Became operational on 8 April 2025 for WAFS SIGWX

- Confirms to the Open Geospatial Consortium Environmental Retrieval API standards https://ogcapi.ogc.org/edr/
- SADIS API conforms to EUROCONTROL SWIM yellow profile
- Is published in the EUROCONTROL SWIM registry https://eur-registry.swim.aero/services

- The WIFS API functions in exactly the same way and is the backup system

Filter by

Service Provider Name

Met Office

Service Type

- Any -

Lifecycle Stage

- Any -

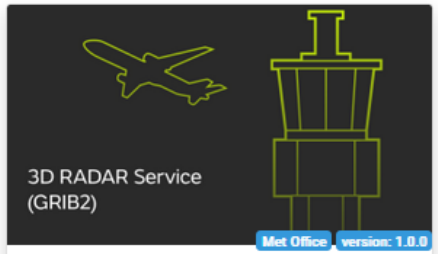
Version

Sort by

Title Asc

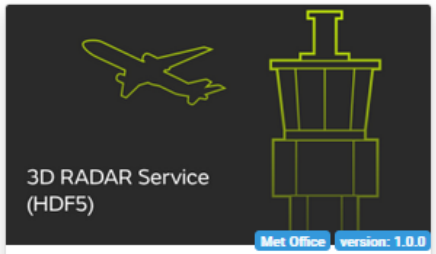
Apply

Service Descriptions



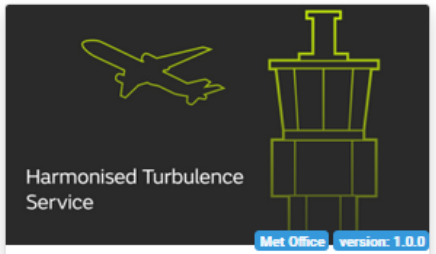
3D RADAR Service ...

The Pan-European 3D RADAR Service aims to provide a SWIM Compliant access point to high resolution R...



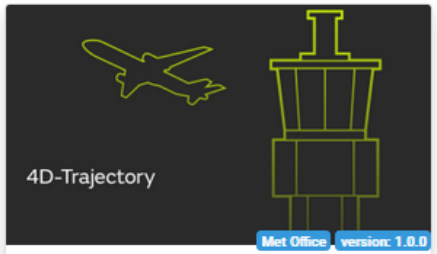
3D RADAR Service ...

The Pan-European 3D RADAR Service aims to provide a SWIM Compliant access point to high resolution R...



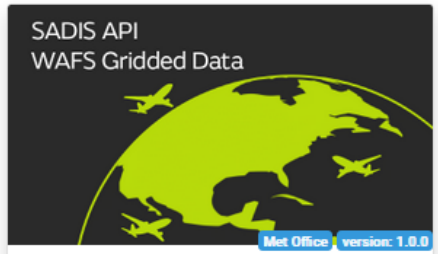
Harmonised Turbul...

The Harmonised Turbulence Service aims to provide a SWIM Compliant access point to harmonised turbul...



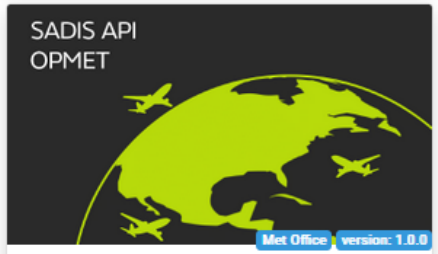
Met Office 4D-Tra...

The Met Office 4D Trajectory API service supplies global meteorological data for tailored flight tra...



SADIS WAFS Gridde...

The SADIS World Area Forecast Service (WAFS) Gridded Data service (the Service) supplies tiles of me...



SADIS WAFS OpMet ...

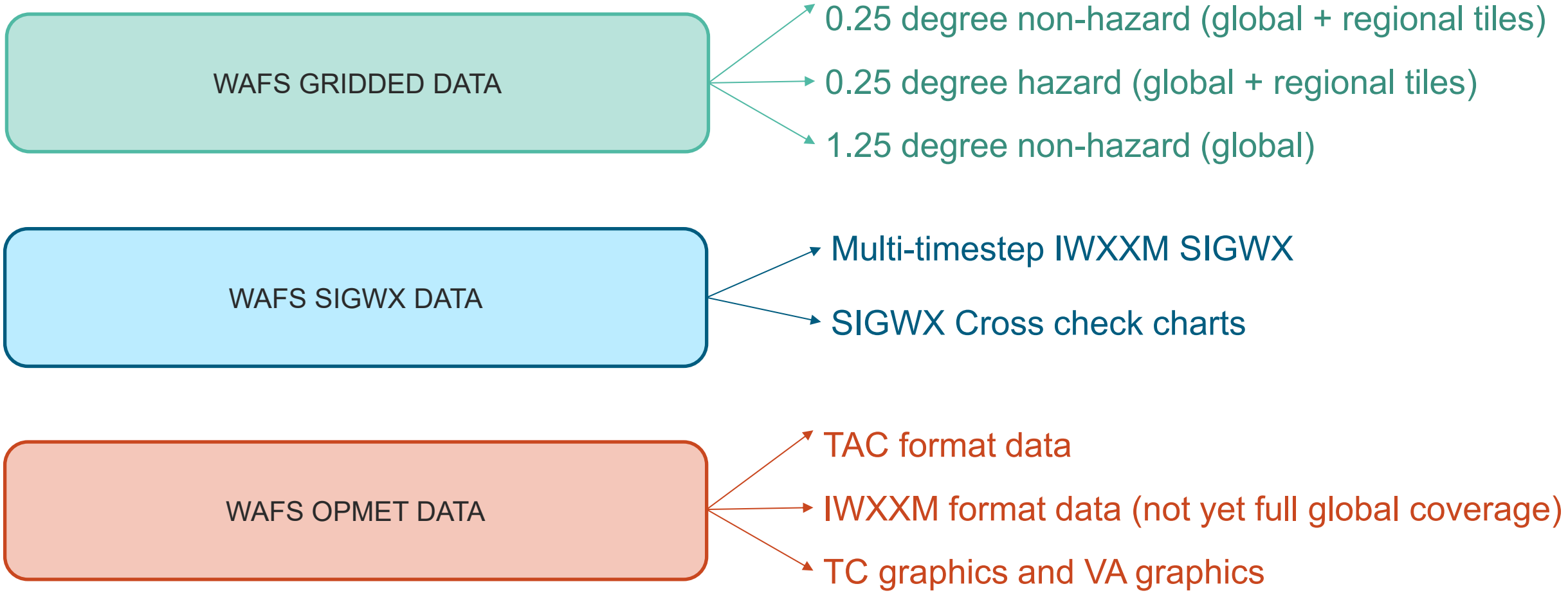
The SADIS World Area Forecast Service (WAFS) OpMet API Data service supplies packaged bulletins of m...

SADIS WAFS SigWx ...

The SADIS World Area Forecast Service (WAFS) SigWx API data service supplies packaged bulletins of S...

Met Office

SADIS API ELEMENTS

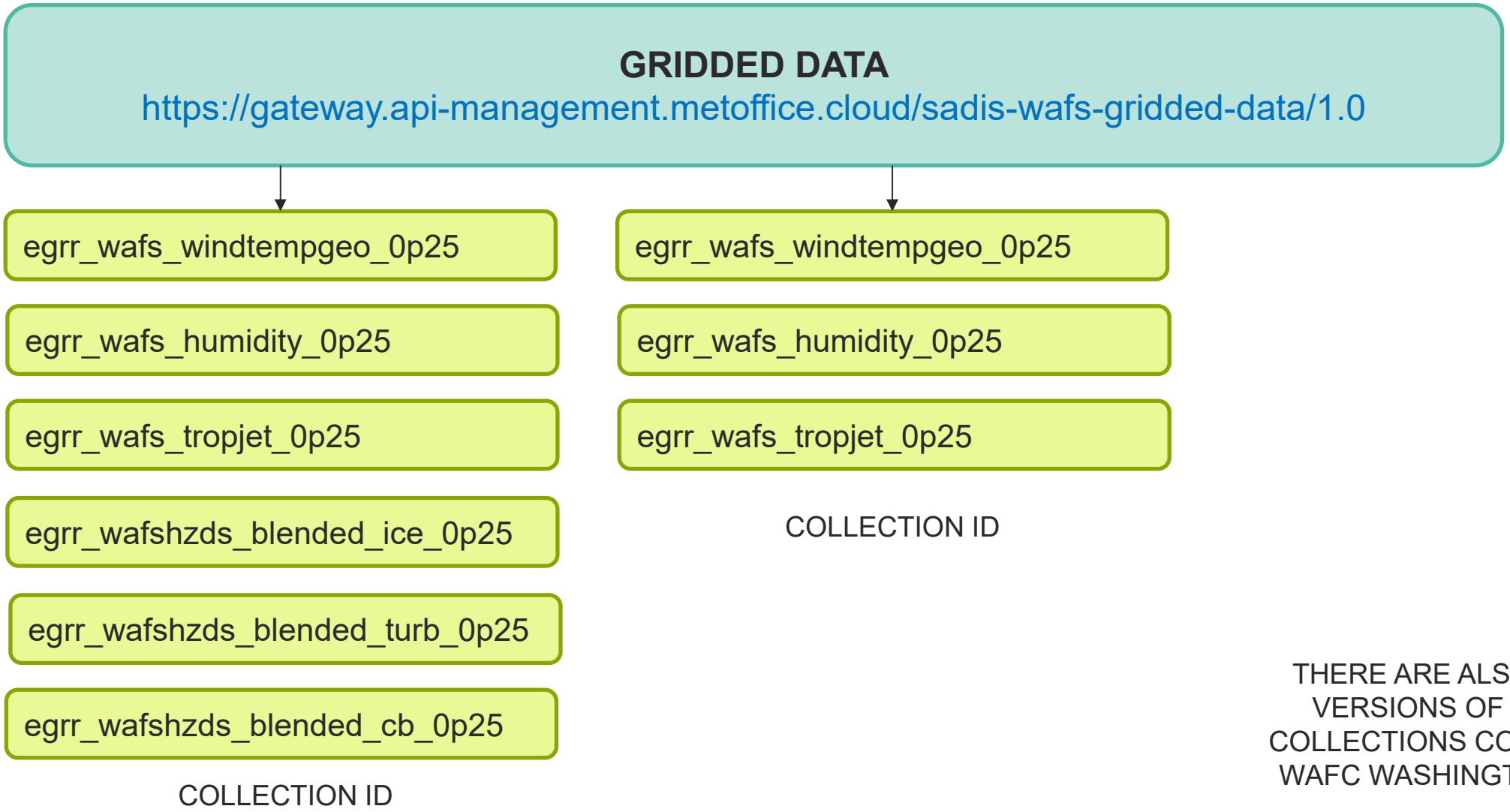


Met Office

SADIS API – WAFS GRIDDED DATA

Met Office

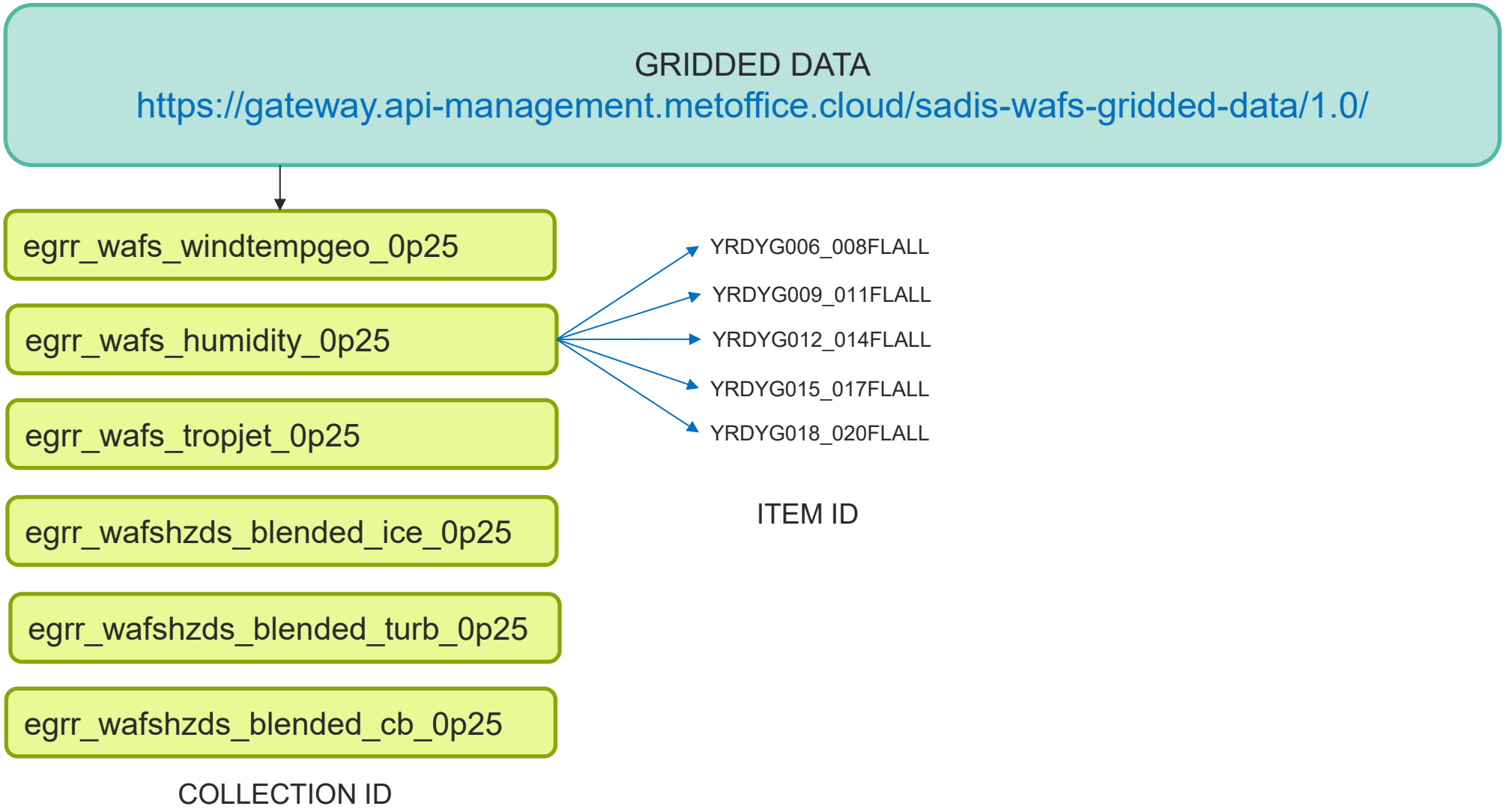
WAFS GRIDDED COLLECTIONS



THERE ARE ALSO KWBC VERSIONS OF THESE COLLECTIONS CONTAINING WAFC WASHINGTON DATA

Met Office

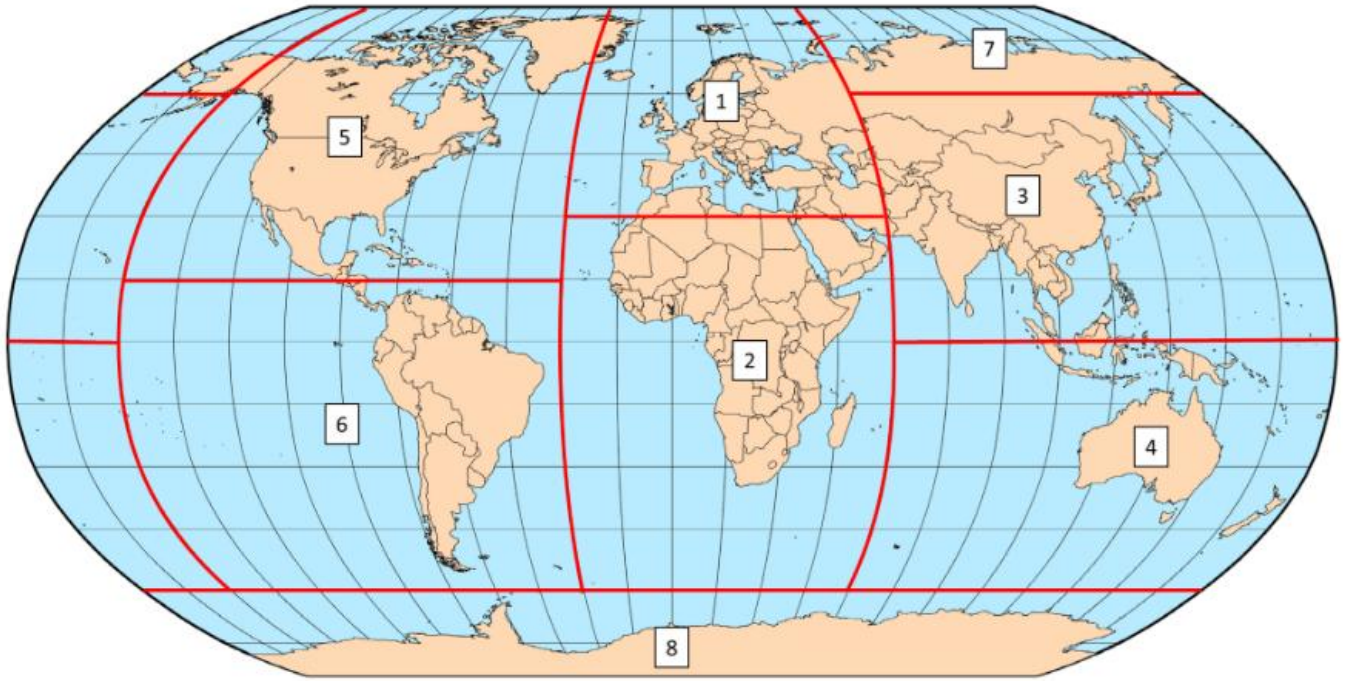
WAFS GRIDDED COLLECTIONS



Met Office

AVAILABLE REGIONAL TILES

All data available as a global “tile”. 0.25 degree data also available for 8 regional tiles.



Pre-set map areas	
Region 1	30W-60E, 30N-90N
Region 2	30W-60E, 60S-30N
Region 3	60E-150W, 0-60N
Region 4	150W-30W, 60S-0
Region 5	150W-30W, 15N-90N
Region 6	150W-30W, 60S-15N
Region 7	60E-150W, 60N-90N
Region 8	180W-180E, 90S-60S

You always get all the available model levels.

Met Office

AND IS GROUPED INTO THREE TIMESTEP PACKAGES

Timestep groupings at 0.25° resolution		Timestep groupings at 1.25° resolution	
	$B_1B_2B_3\_B_1B_2B_3$ in the item name		$B_1B_2B_3\_B_1B_2B_3$ in the item name
T+006, T+007, T+008	**006_008**	T+006, T+009, T+012	**006_012**
T+009, T+010, T+011	**009_011**	T+015, T+018, T+021	**015_021**
T+012, T+013, T+014	**012_014**	T+024, T+027, T+030	**024_030**
T+015, T+016, T+017	**015_017**	T+033, T+036	**033_036**
T+018, T+019, T+020	**018_020**		
T+021, T+022, T+023	**021_023**		
T+024, T+027, T+030	**024_030**		
T+033, T+036, T+039	**033_039**		
T+042, T+045, T+048[1]	**042_048**		
T+054, T+060, T+066[2]	**054_066**		
T+072, T+078, T+084	**072_084**		
T+090, T+096, T+102	**090_102**		
T+108, T+114, T+120	**108_120**		

Note:

[1] *Cumulonimbus, icing and turbulence parameters only go up to timestep T+048.*

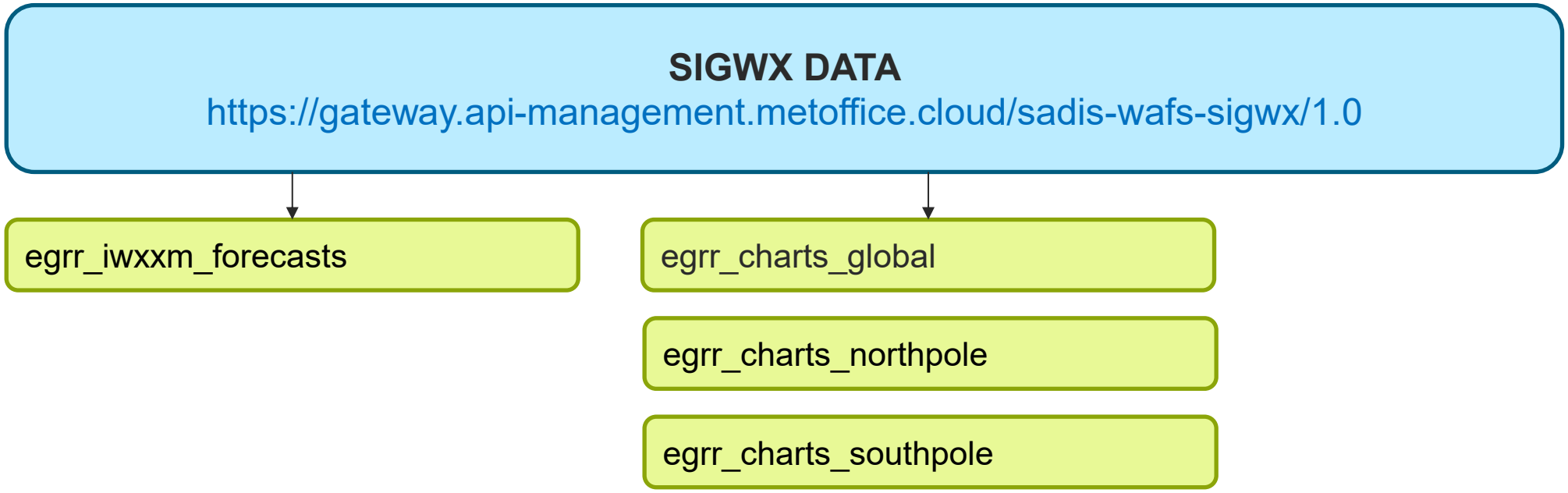
[2] *For the 06Z and 18Z model updates, EGRR datasets only go up to timestep T+066.*

Met Office

SADIS API – WAFS SIGWX DATA

Met Office

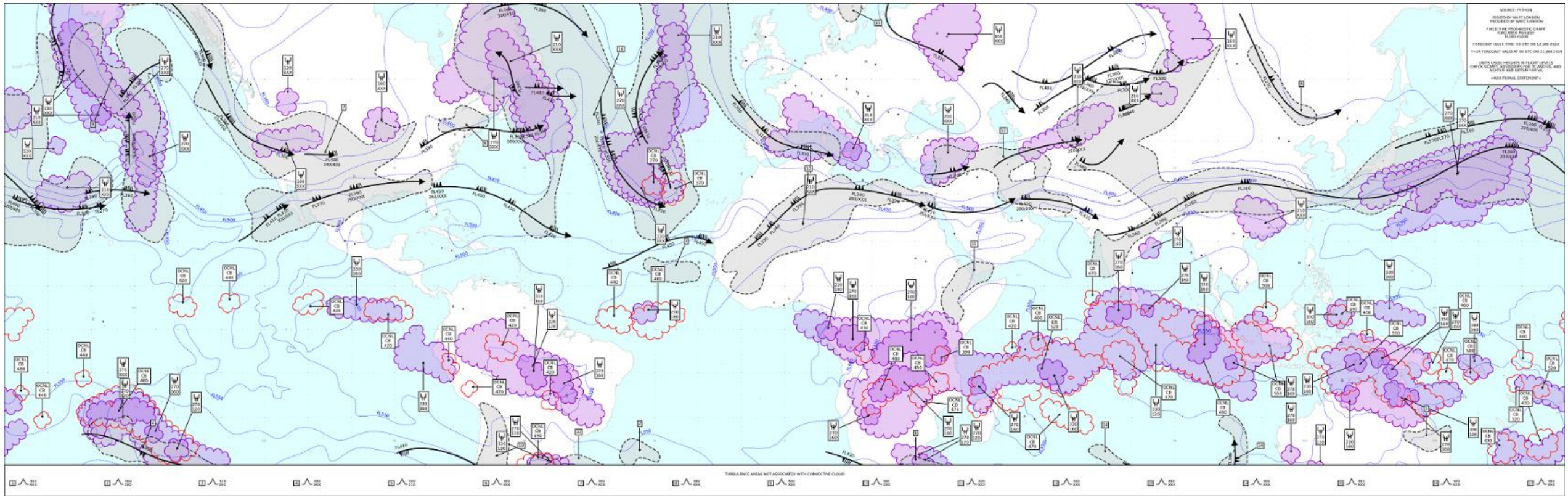
WAFS SIGWX COLLECTIONS



COLLECTION ID

THERE ARE ALSO KKCI VERSIONS OF THESE CONTAINING WAFC WASHINGTON DATA

Met Office

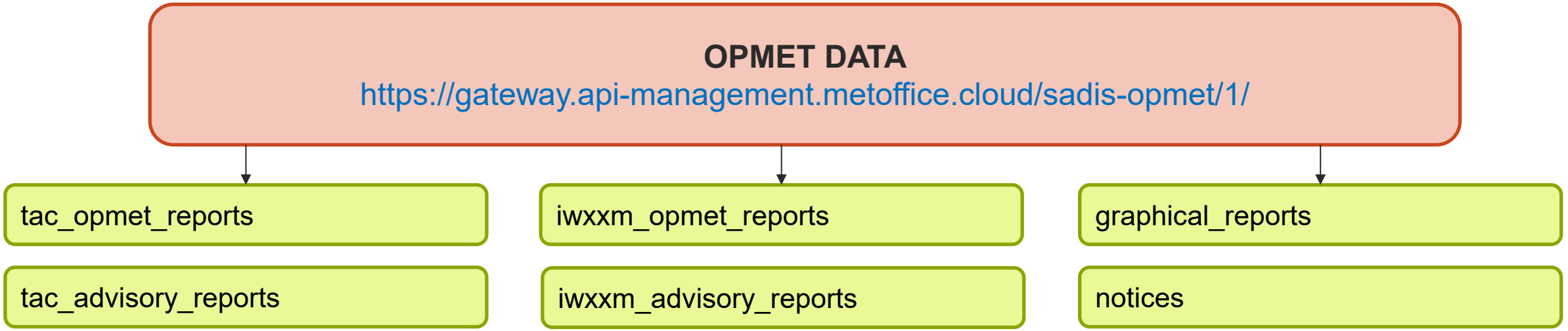


Met Office

SADIS API – OPMET DATA

Met Office

OPMET COLLECTIONS



Met Office

WHAT IS IN EACH COLLECTION:

Collection Name	Collection contains:	Update frequency
tac_opmet_reports	METAR, TAF, SPECI, SIGMET (all types), AIRMET, GAMET and special AIREPs in the traditional alphanumeric code format.	5 minutes
iwxxm_opmet_reports	METAR, TAF, SPECI, SIGMET (all types) and AIRMET, in IWXXM format.	5 minutes
tac_advisory_reports	Tropical cyclone advisories, volcanic ash advisories, space weather advisories, nuclear emergency messages, and NOTAM/ASHTAM relating to volcanic eruptions in the traditional alphanumeric code format.	5 minutes
iwxxm_advisory_reports	Tropical cyclone advisories, volcanic ash advisories and space weather advisories in IWXXM format.	5 minutes
graphical_reports	This collection volcanic ash graphics and tropical cyclone graphics in .png format.	5 minutes
notices	Various notification messages issued by the European Regional OPMET Centres (ROC London, ROC Toulouse, ROC Vienna and ROC Moscow) and the Regional OPMET Data Bank in Brussels.	20 minutes

Met Office

REGIONAL SUBSETS:

OPMET reports (METAR, TAF, SIGMET etc) are available in regional subsets.

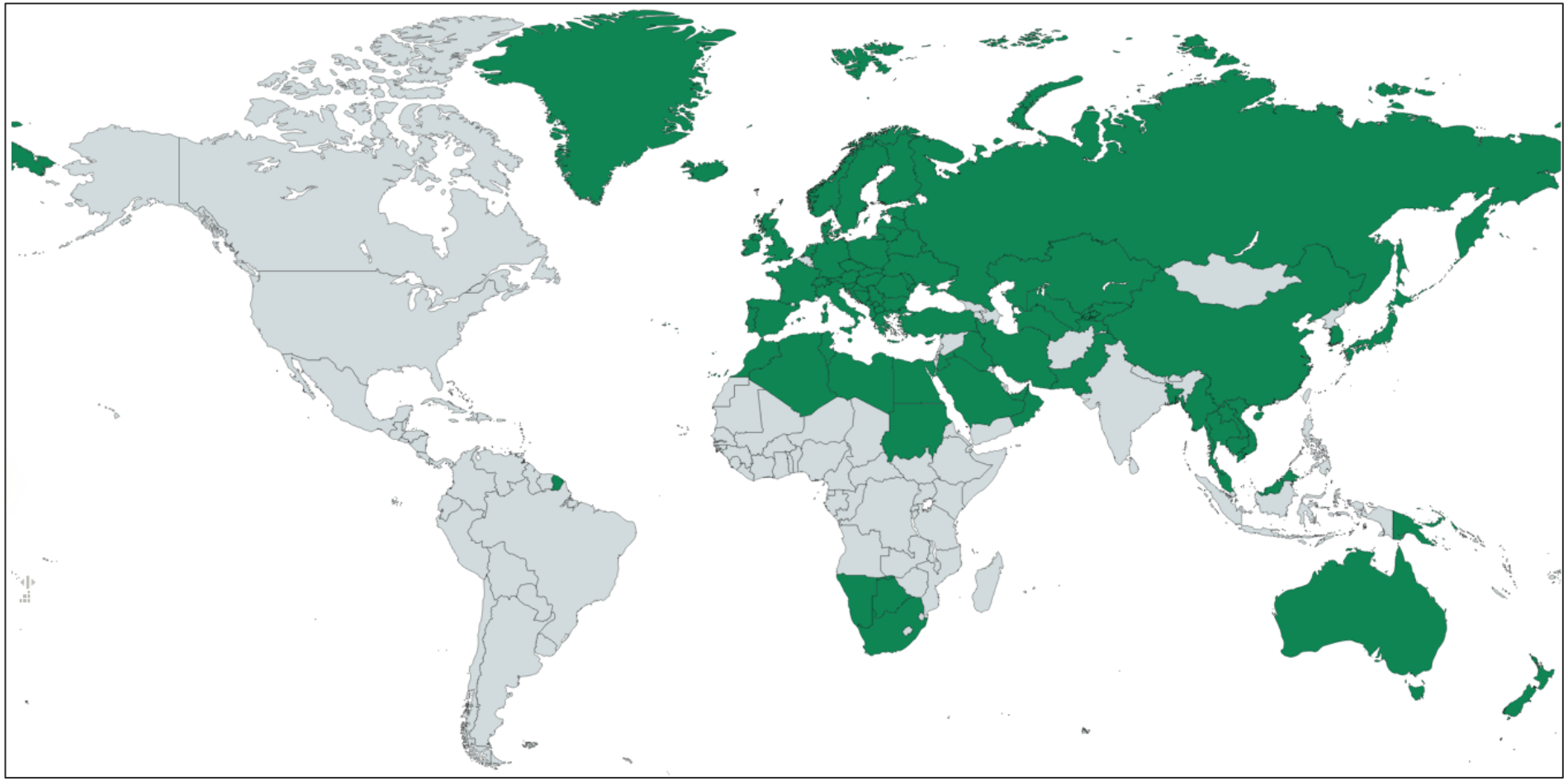
Advisory reports and notices are not.

locationId	ICAO "CCCC"
EUR-NAT	**E***
	L*
	B*
	U*
NAM-CAR	**C***
	K*
	M*
	T*
	P*
SAM	**S***
AFI	**G***
	D*
	F*
	H*

locationId	ICAO "CCCC"
AFI	**G***
	D*
	F*
	H*
MID	**O***
ASIA-PAC	**A***
	N*
	R*
	V*
	W*
	Y*
	Z*
GLOBAL	all ICAO codes

Met Office

WHAT IWXXM DATA DO WE HAVE?



Missing African data is because the connection between the African Inter-regional OPMET Gateway (IROG) and IROG Toulouse is not operational yet.

How do you get the data

Met Office

SADIS API ACCESS

1) Automatically granted for any users of the existing SADIS FTP
2) All users need to fill in a registration form and accept the service terms and conditions. Information available here: https://www.metoffice.gov.uk/services/transport/aviation/regulated/international-aviation/sadis/sadis-api
3) You will be given access to our API developer portal where you can generate secure access keys
   - Only you will know your secure keys
   - You use the secure keys to create an access token.

Met Office

SADIS API ACCESS

4) Special equipment is not required to download the data – the same infrastructure that is used to access SADIS FTP should be able to run scripts to access data from SADIS API
5) Visualisation software will need to be updated to be able to display the new format SIGWX data

Met Office

HOW DO YOU KNOW IF ITS NEW DATA?

The API contains metadata…

- https://gateway.api-management.metoffice.cloud/sadis-wafs-gridded-data/1.0/

  is the API landing page
- https://gateway.api-management.metoffice.cloud/sadis-wafs-gridded-data/1.0/api

  gives general information on the API specification
- https://gateway.api-management.metoffice.cloud/sadis-wafs-gridded-data/1.0/conformance

  gives information on the specification that the API confirms to.

Met Office

HOW DO YOU KNOW IF ITS NEW DATA?

- For WAFS gridded data and SIGWX data only the latest model run of data is published, and it is published on a schedule 4 times daily
    - WAFS gridded data is published at between 4:30 and 5:00 after the model run time
    - WAFS SIGWX data is published at 5:30 after the model run time

- API metadata can be checked to see if the data has been updated and then download of all the data in the collections can be initiated

- For OPMET data new data is published every 5-minutes

Met Office

DOWNLOADING STRATEGIES IF BANDWIDTH IS LIMITED

- Take global 1.25-degree data (where available) and then your chosen 0.25-degree regional tile
- Spread out your data requests over a longer period of time
- Take earliest timesteps first, or most important parameters to you first, and get other data later
- Download once within your organisation the distribute data to multiple internal systems.

Met Office

WISH TO SIGN UP TO GET SADIS API ACCESS

- https://www.metoffice.gov.uk/services/transport/aviation/regulated/international-aviation/sadis/sadis-api

- E-mail SADISmanager@metoffice.gov.uk

Met Office

Thank you for listening