



METEOROLOGY PANEL



GANIS2 Meteorology Session

Advancing flight planning safety and efficiency through enhancements in the World Area Forecast System (WAFS)

Presented by Ian Cameron Head Aviation UK Met Office

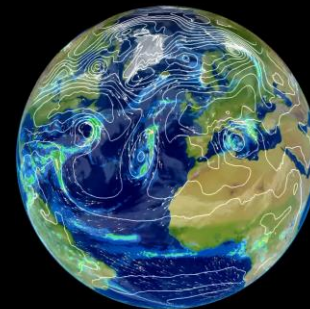




World Area Forecast System (WAFS)

- What is the WAFS ?
- How the WAFS has been improving in recent years
- What improvements are being made to WAFS
- Benefits of improvements to the aviation community

What is the purpose of the presentation?

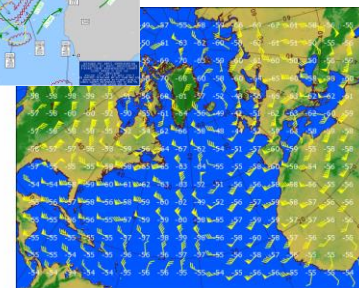
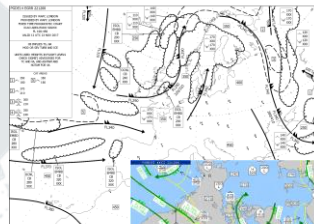




World Area Forecast System (WAFS)

- Two provider States - USA and UK
- WAFC Washington and WAFC London
- Gridded forecasts
- Upper winds, temps and humidity
- Tropopause temperature
- Maximum wind speed and flight level
- Cumulonimbus (CB), Icing and Turbulence
- Significant weather charts for upper and medium flight levels
- Distributed through WIFS and SADIS – Internet based systems

Meteorological flight planning for safe, economic and efficient air navigation



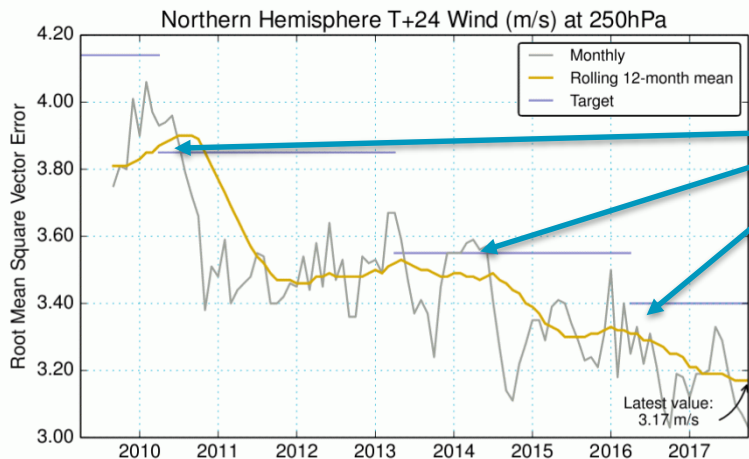


Meteorology science is advancing rapidly

- Temperature accuracy – FL340 within 0.6 C
- Wind accuracy

Performance improvements of the WAFS

Winds at FL340 error



Weather modelling upgrades directly related to large improvements

High resolution global models in last six months has marked improvement



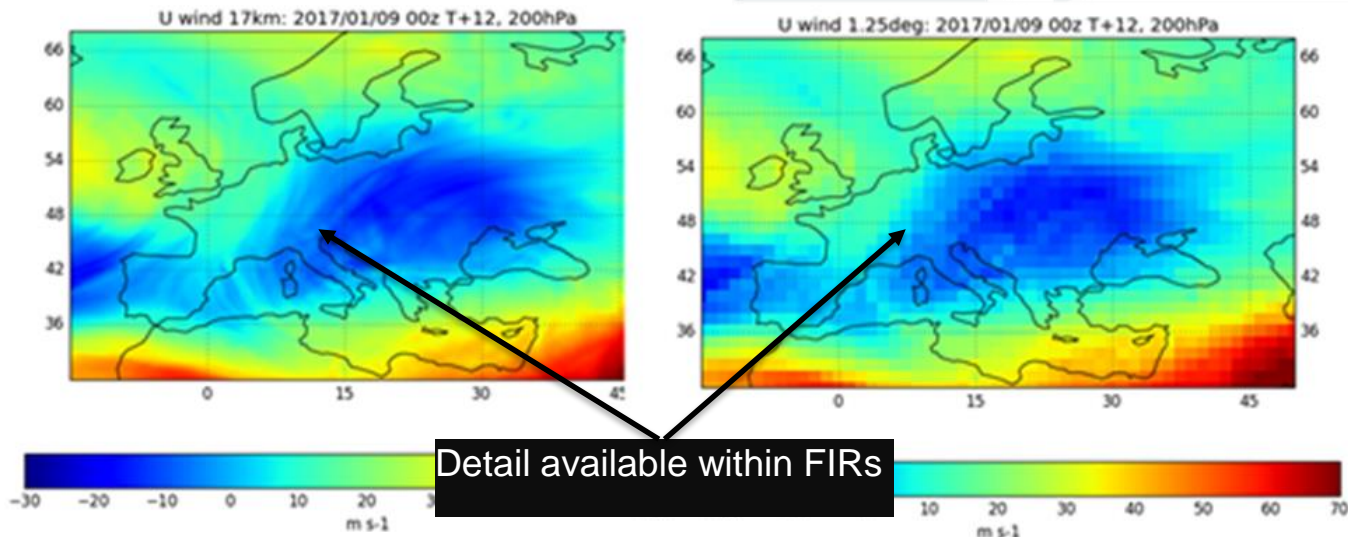
Meteorology science is advancing rapidly

→ Higher resolution weather modelling

WAFS higher resolution weather modelling

Turbulence Higher resolution

Turbulence – WAFS resolution

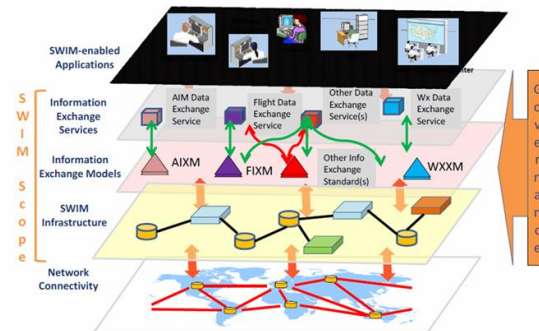




Ensuring WAFS is fit for future requirements

- GANP describes the methods, delivered through ASBU methodology
- Flight patterns are changing
 - Very long haul flights such as Australia to the UK
 - Business jets flying at FL500
- Data volumes are rapidly increasing
 - Large data sets can not be distributed easily
 - Increasing data centric flight planning needs data
- System Wide Information Management (SWIM) demands change
 - “Create once use many times”

The changes in MET are gathering pace, reflecting changing needs of aviation to increase capacity and improve efficiency.





What enhancements are being made to the WAFS?

- Finer resolution data
 - 1.25 degrees to 0.25 degrees data points
- New data formats
 - Creation of object based data to complement existing paper based charts
 - Integration into decision support
- Increasing the forecast time steps from every 3 hours to every hour
- Utilising improved science for turbulence, icing and high altitude ice crystals forecasts
- Integration of aircraft derived observations

The only sure thing is that change will continue



What benefits will result from improving WAFS?

- Enabling safe route planning in significant weather
- Improved fuel efficiency
- Improved arrival time predictions
- Improved passenger comfort
- Specific, easily accessible and easy to use information for gate to gate flight planning.
- Easily share meteorological information across all aviation domains via SWIM.

Flight planning and operational benefits will result from enhancing the WAFS.



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Today we need your feedback, questions, and views of the future to better focus our work.

Thank you!