



UK Status

E-GVAP II, Plenary Meeting, MeteoFrance, Toulouse, 20th October 2011



Operational Processing



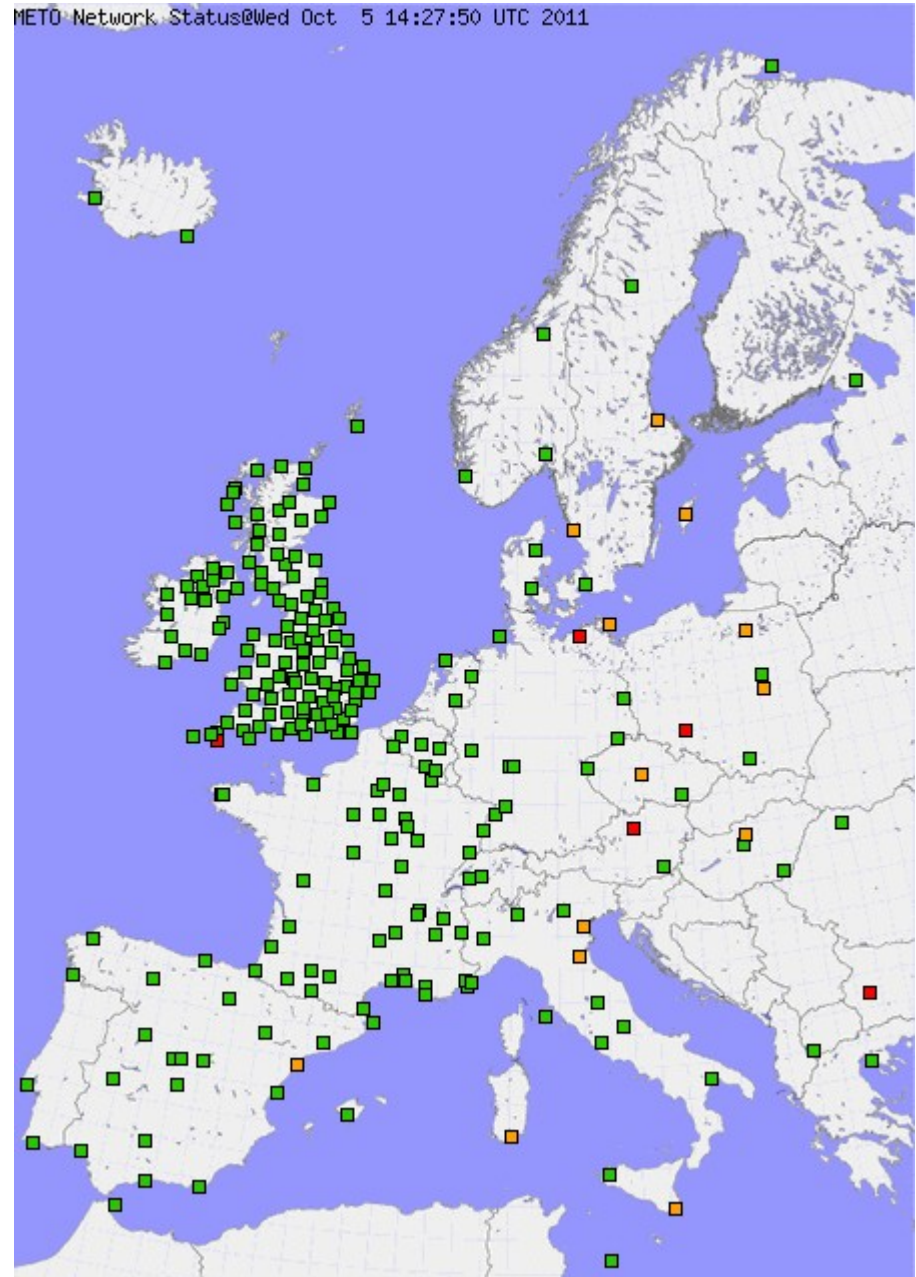
Operational Processing (METO)

- System developed in conjunction with the University of Nottingham since 2005
- Operational roll-out (assimilation) in April 2007
- System aimed at delivering data for NAE NWP model
- European network of sites processed
- Agreements in place with data providers as well as with system developers for operational support
- New R&D Systems in development

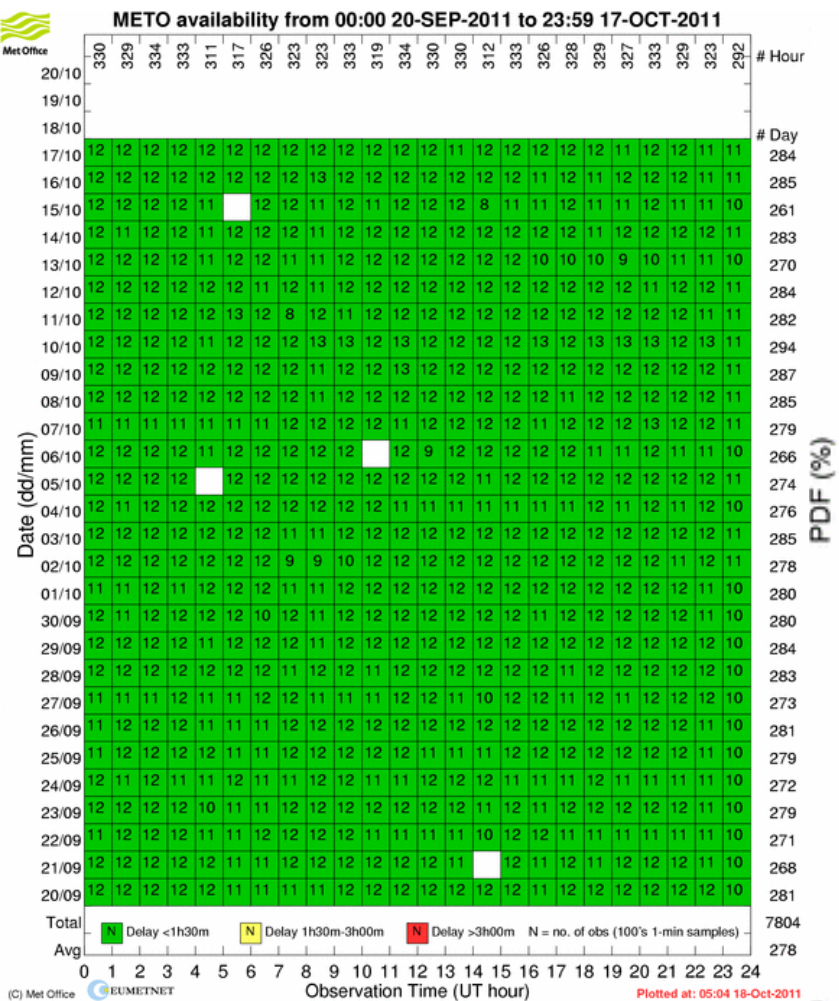


METO

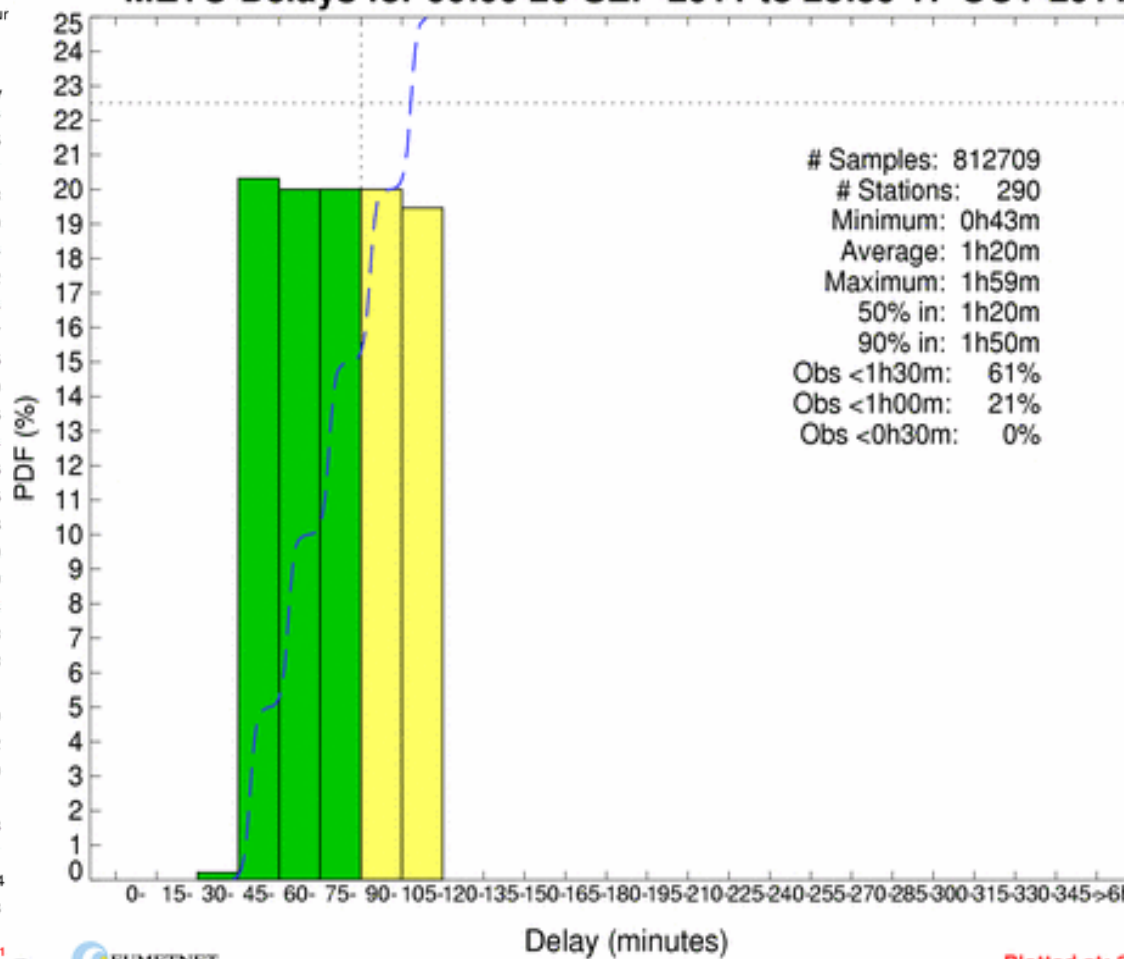
- Hourly/30-sec RINEX
- 200-250 sites processed
- Processing starts at HH+20 and takes takes ~20mins
- Oldest data ~1h40mins old, youngest data ~40mins old
- ZTD estimates every 15mins
- ~750,000 humidity observations per month



Data Availability



METO Delays for 00:00 20-SEP-2011 to 23:59 17-OCT-2011





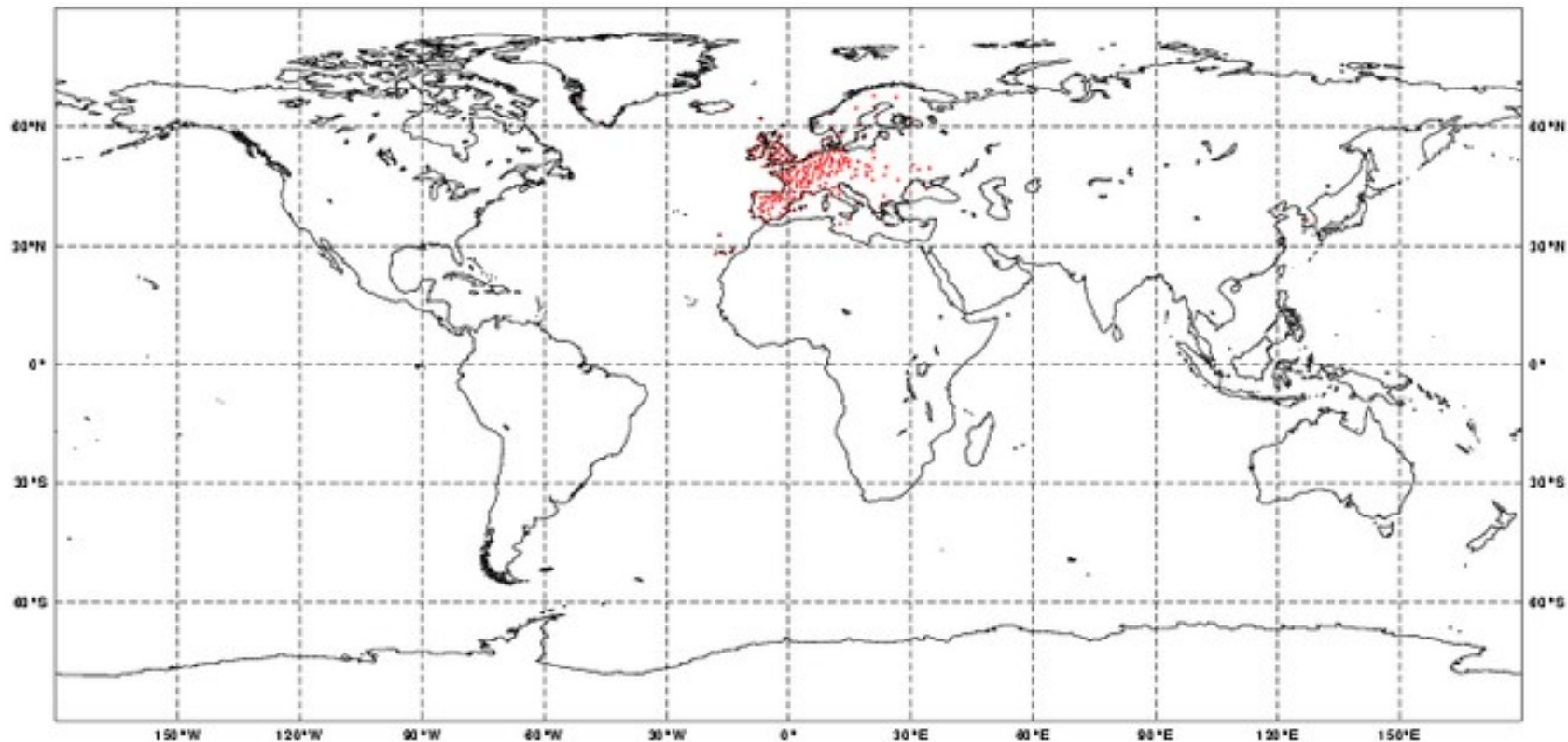
Met Office

Assimilated Data

Data Coverage: GroundGPS (12/10/2011, 0 UTC, qy00)

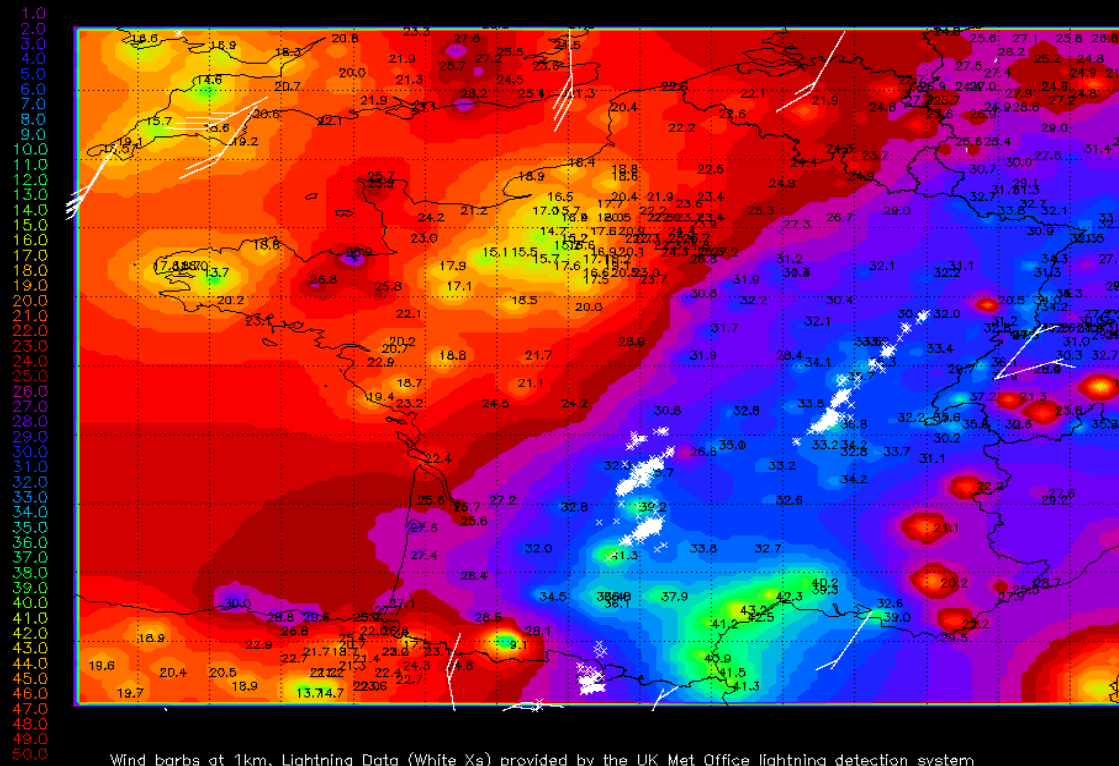
Total number of observations assimilated: 295

GroundGPS (295)



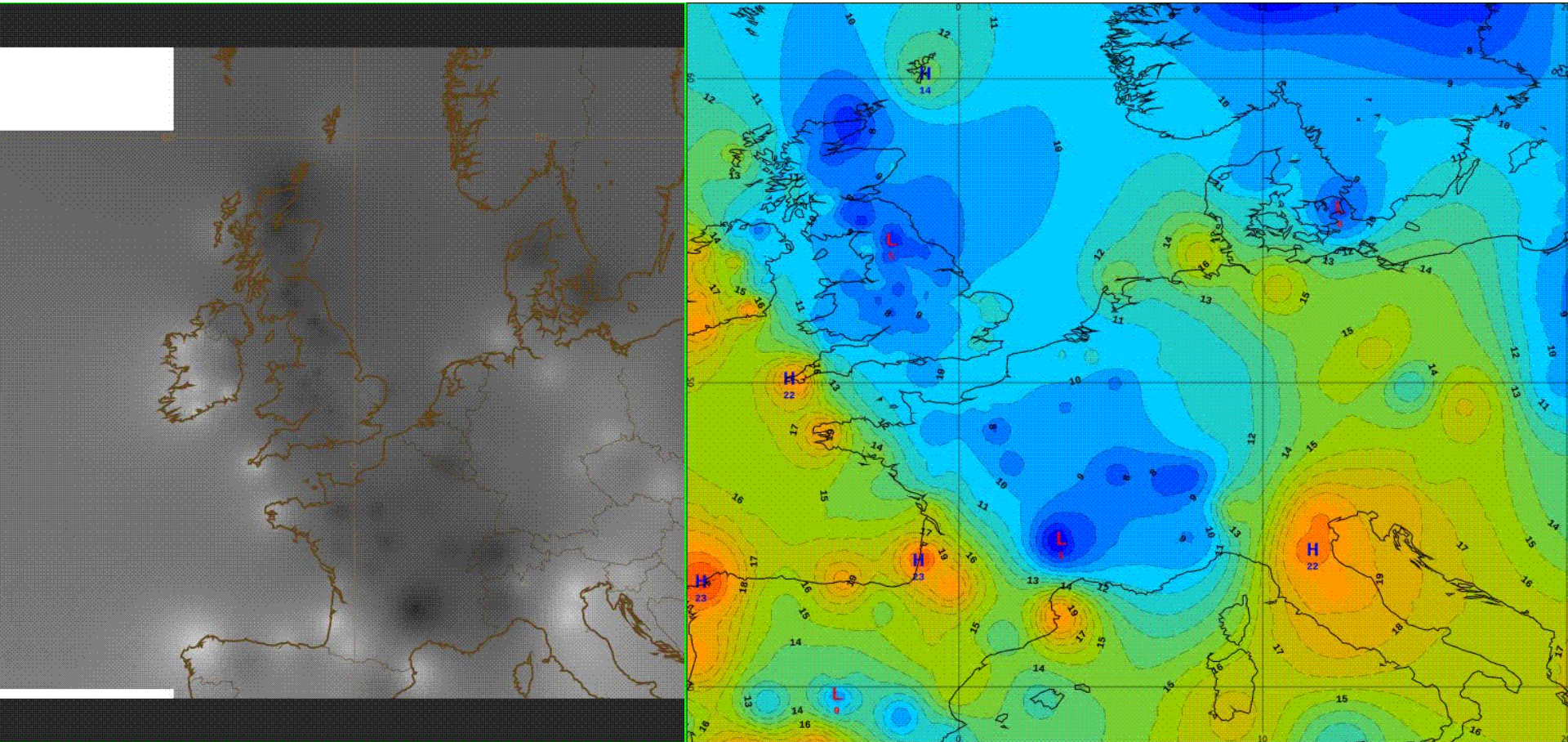
IWV Maps

Ground Based GNSS IWV — france 2011 08 25 05 59 UTC (Units=kgm-2)



- Timeliness was major 'lack of interest' factor previously
- More interest from forecasters now RT processing is close

New IWV Plots (SWIFT)





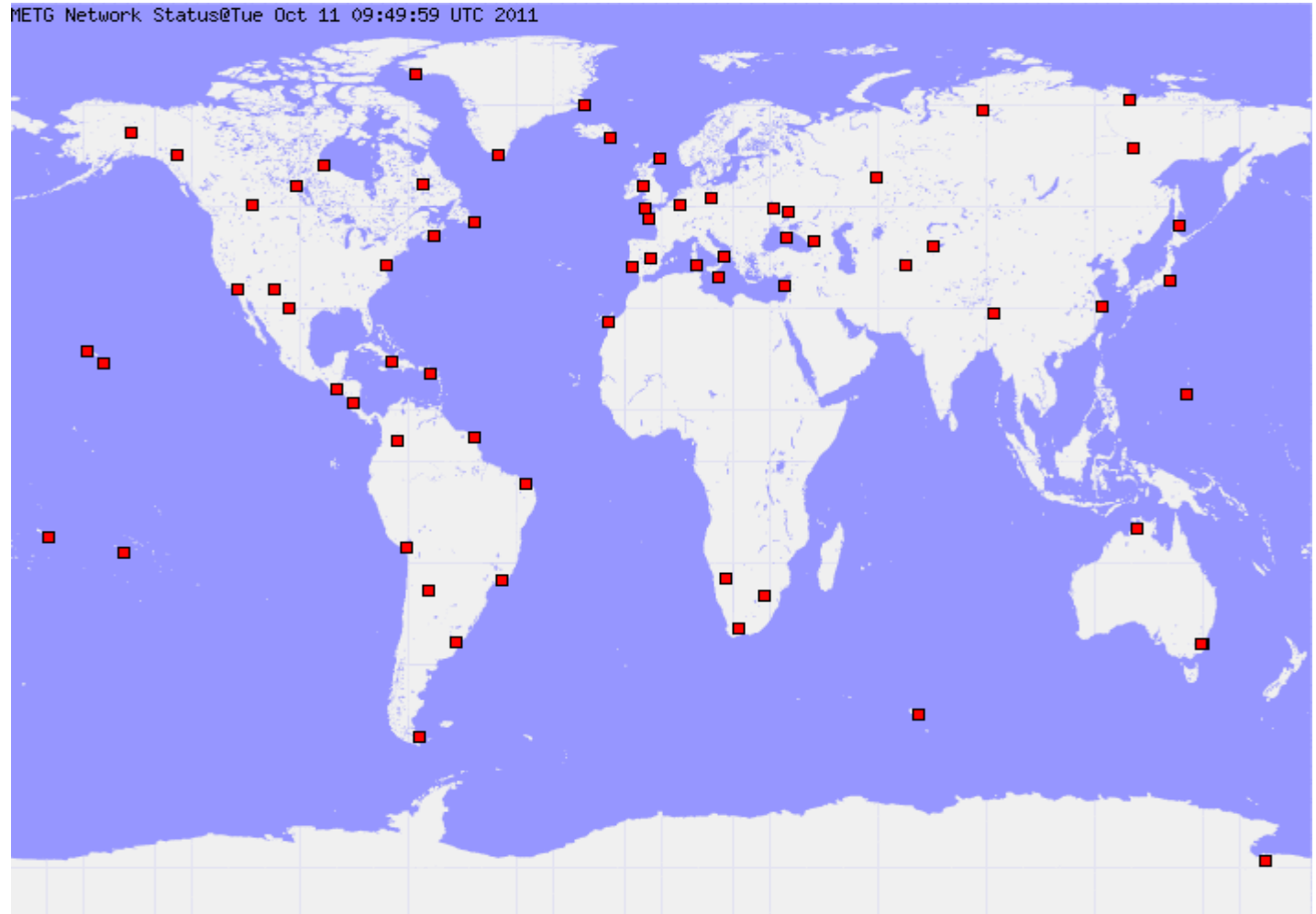
Non-operational Processing



New (non-operational) Processing Systems

- METG – Global processing system (for global NWP model)
- METR – Real-time (15min) processing system (for 1.5km high res model)
- METI - Ionospheric processing system for Space Weather community (NWP and warnings)

Current METG/METI Network



- Based on IGS network but looking to expand...



METR – very near real time...

- Need to access RT data streams – need server external to firewall
- Focus on UK domain but with some Euro stations to improve solution (~200 sites in total)
- Interim solution developed of hourly processing any sites with data available by HH+10
- Aim to have sub-hourly processing system operational before Christmas 2011
- Data only of any quality where you have GNSS receivers

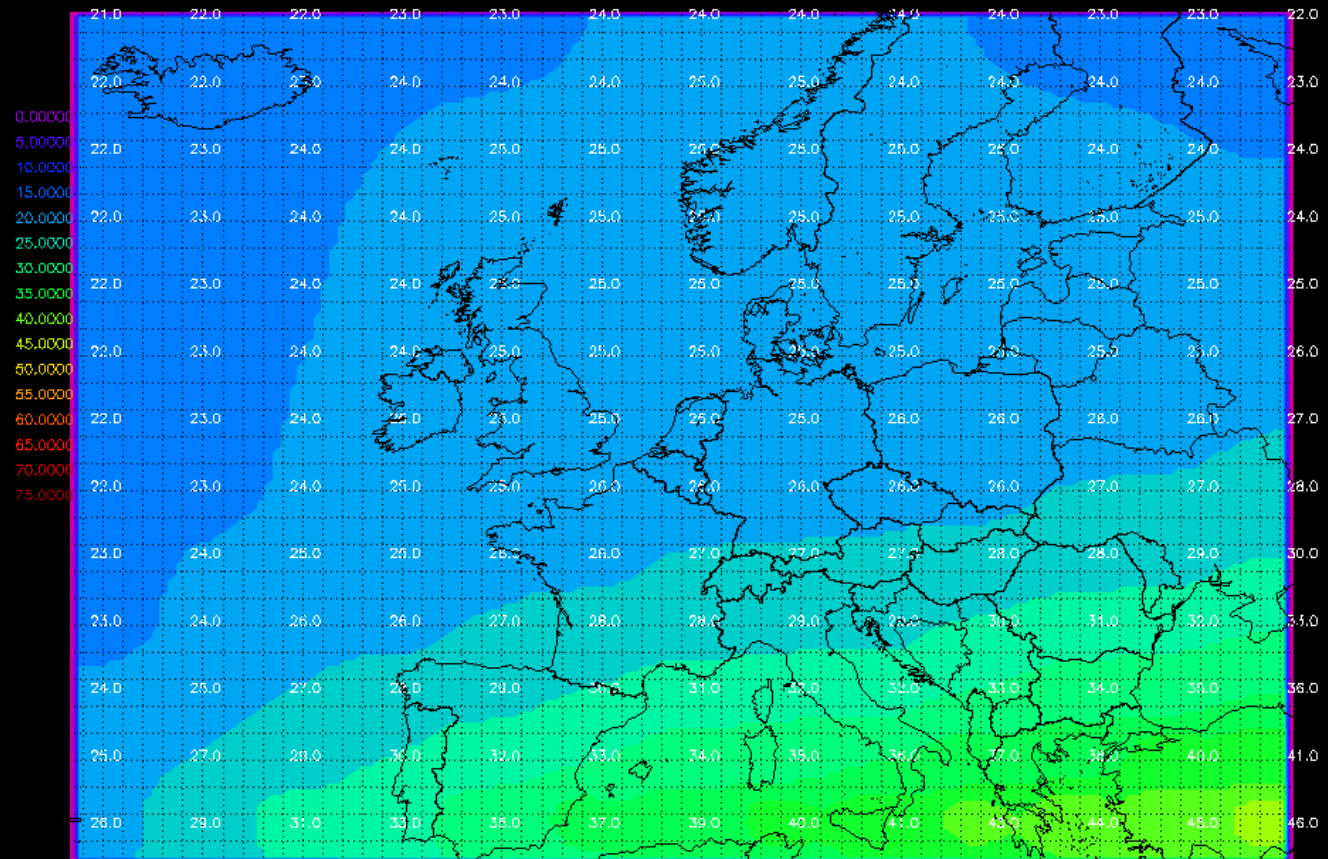


METI

- Met Office has committed to establishing a Space Weather centre to mirror one at NOAA
- METI delivering TEC estimates to:
 - NWP Space Weather model
 - Met Office Hazard Centre (telecomms disruption etc)
 - External scientific community
- Operational system to process global network but with focus on Europe/UK
- Also looking at Rate of TEC change/TEC anomalies and possible link between TEC anomalies and tectonic activity

European TEC Maps

GNSS TEC Plot – europe 2011 10 10 12 00 UTC (Units=TECU)



Spherical harmonic expansion of degree 12, order 8, in geographic reference frame and assuming a single 450km layer



GNSS R&D at UK Met Office

- D
 - Operational METG processing
 - Operational METR processing
 - Operational METI TEC processing (if req'd)
 - Reprocessed GNSS ZTD for climate applications (with Nottingham Uni.)
 - Network renewal/expansion
- R
 - GNSS-R
 - Single Frequency ZTD
 - Slants/tomography



Questions