



GPS Processing at UKMO

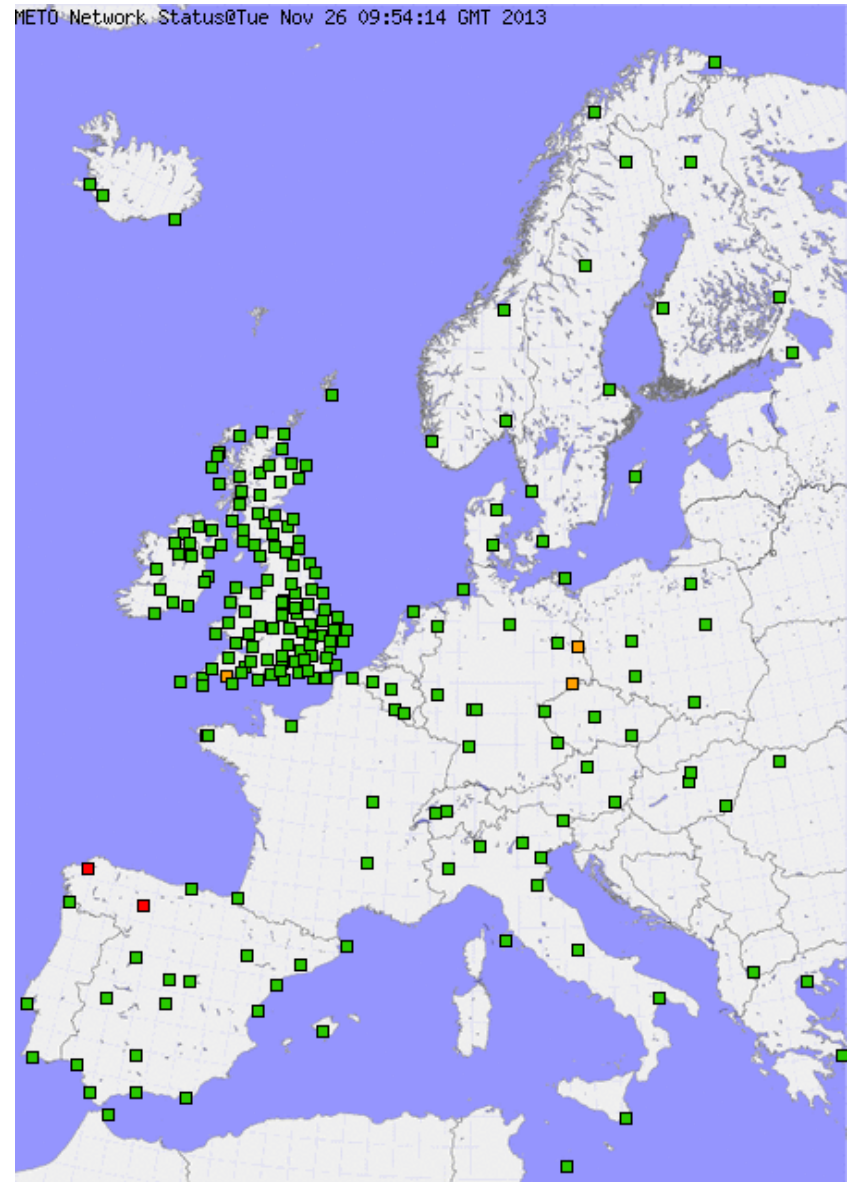
Jonathan Jones, E-GVAP Expert Team Meeting, DMI, 28th and 29th November 2013



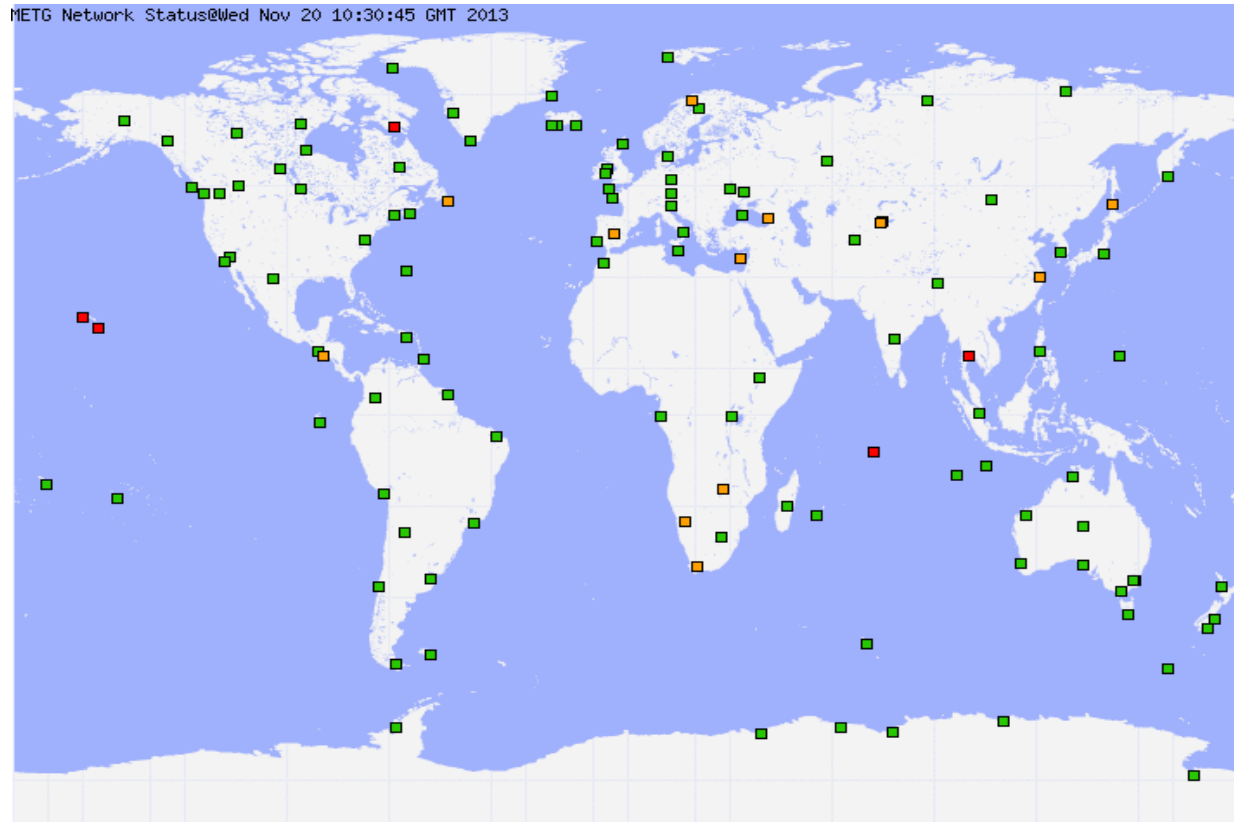
Processing Setup

- METO, METG and METI = hourly processing
- METR = 15min processing
- All based on:
 - BSW50 in DD mode (awaiting v5.2)
 - IGS Ultra Rapid products
 - 4 hours worth of NEQ files added (+ current hour)
 - METO and METG operational
 - METR and METI R&D

- Operationally supported
- Hourly RINEX from ~220 UK and EU sites
- Processing starts at HH+20 and takes ~20mins
- ZTD converted to IWV from hourly surface observations
- Creates COST716 files and converts to BUFR for NWP
- ZTD and IWV estimates at 00, 15, 30, 45 and 59mins



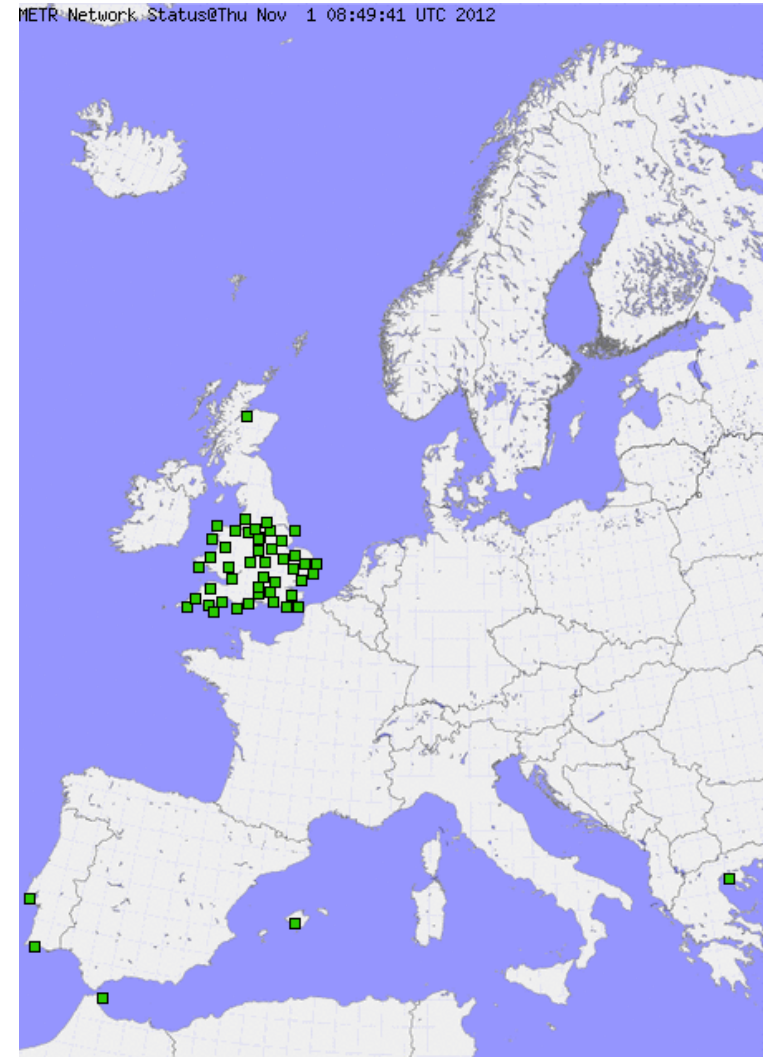
- Operationally supported
- Hourly RINEX from ~120 (mainly IGS) sites
- Processing starts at HH+50 and takes 7mins
- ZTD converted to IWV from hourly surface obs.
- ZTD estimates at 00, 15, 30, 45 and 59
- Loads of spare capacity





METR

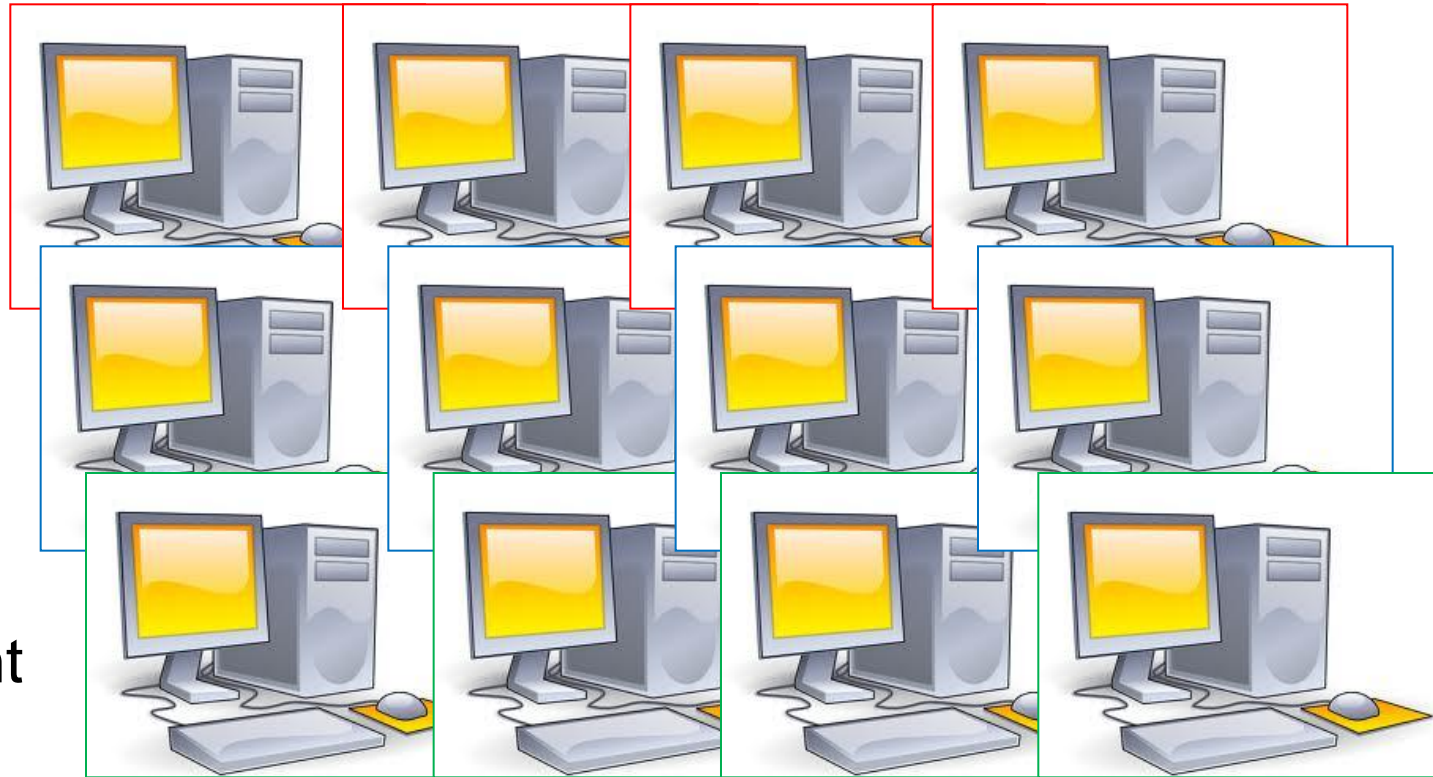
- ~60 UK + some Euro sites
- 1s data collected on ntrip client server outside Met Office firewall
- Processing starts at HH:10, 25, 40 + 55 and takes ~3mins
- Youngest data ~14mins old (can be improved – any customer?)
- 4-5 hours worth (16-20 x 15min) of NEQ files stacked
- 8 estimates of ZTD+IWW estimated every hour at start and end of epoch (e.g. 00:00:00 and 00:14:59)
- Complete UK coverage and more EUREF ntrip sites in 2014





New Server Architecture

- Production
- Test
- Development



METO

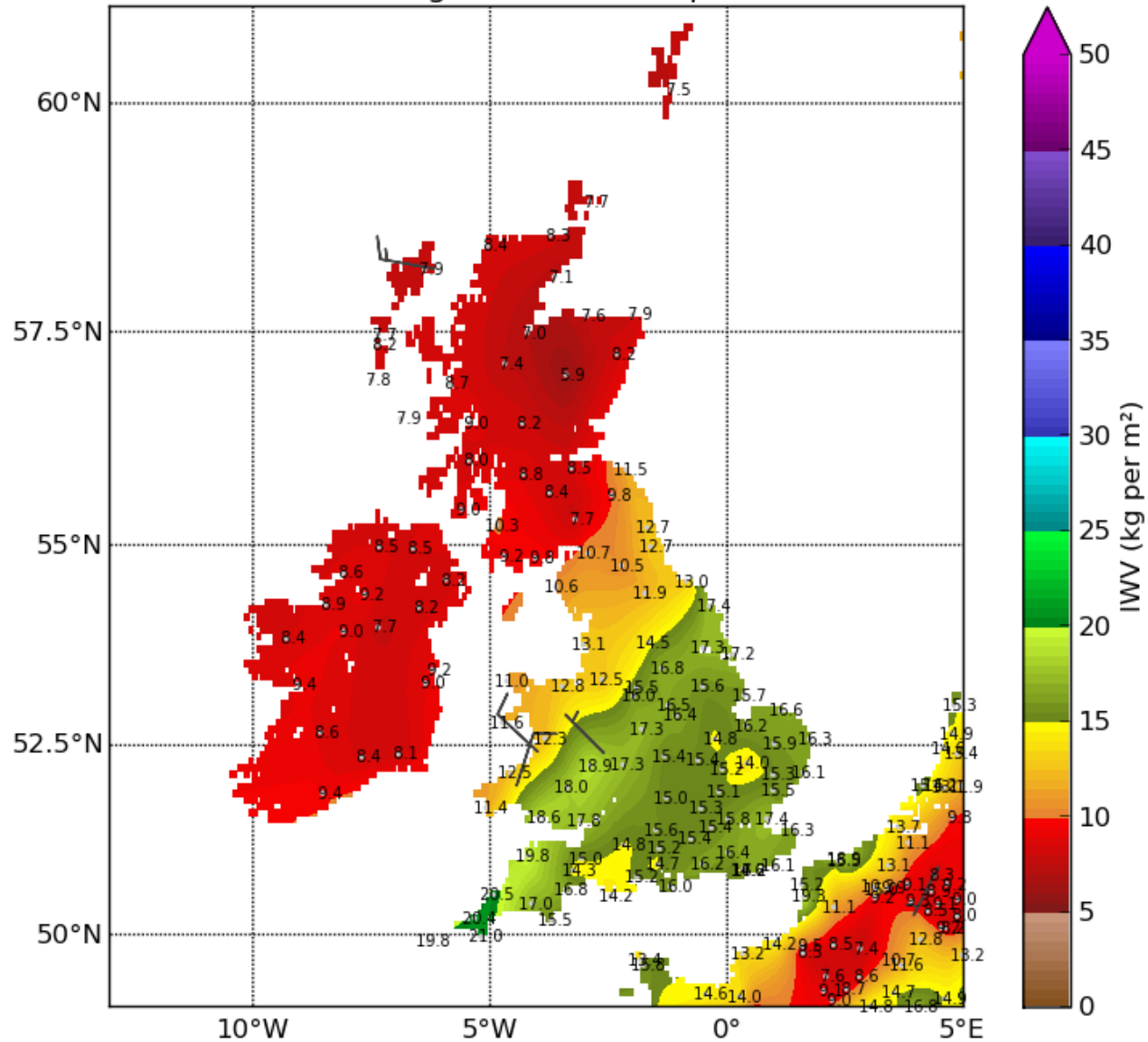
METG

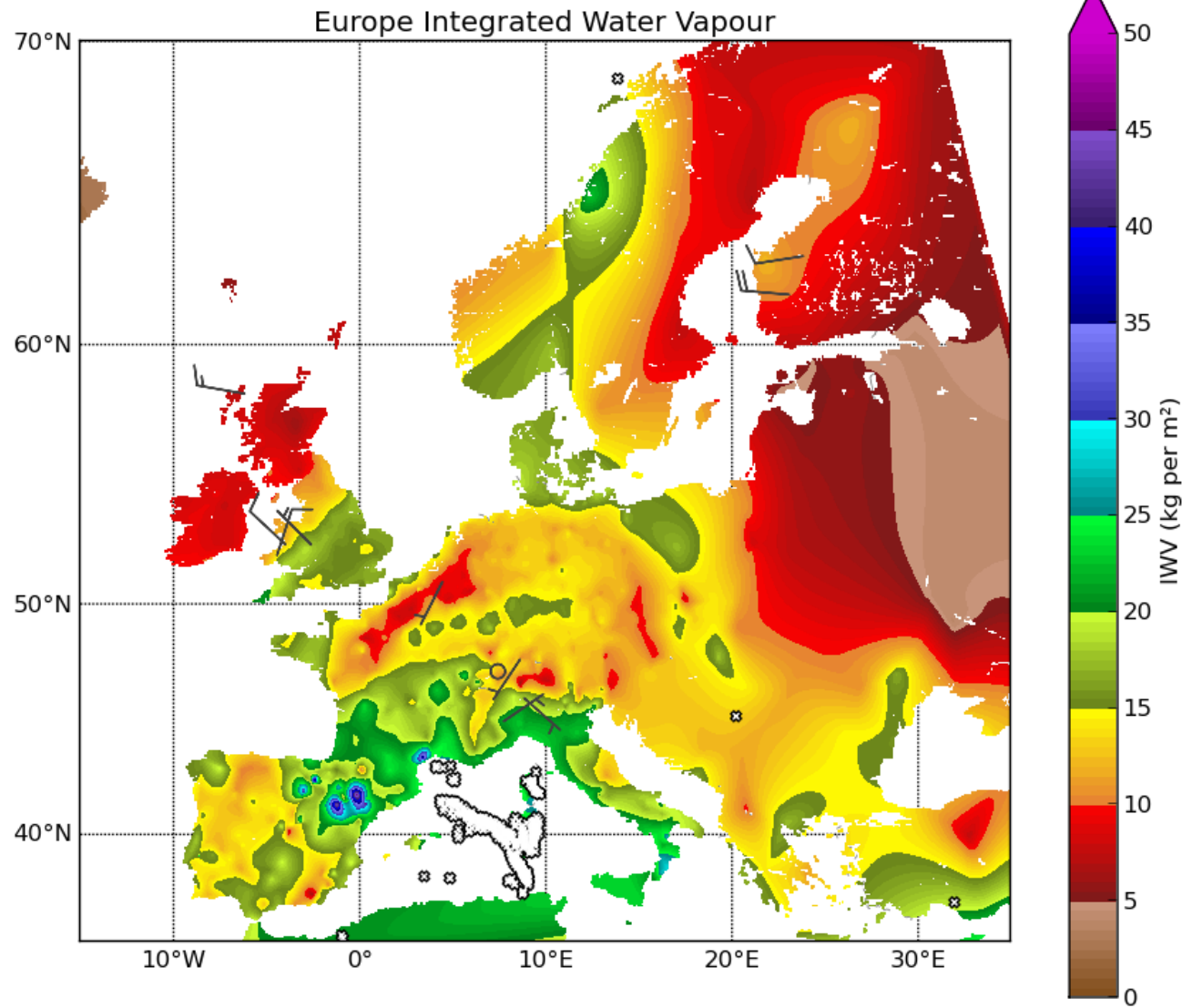
METR

METI

All 64bit, RHEL6, VMs

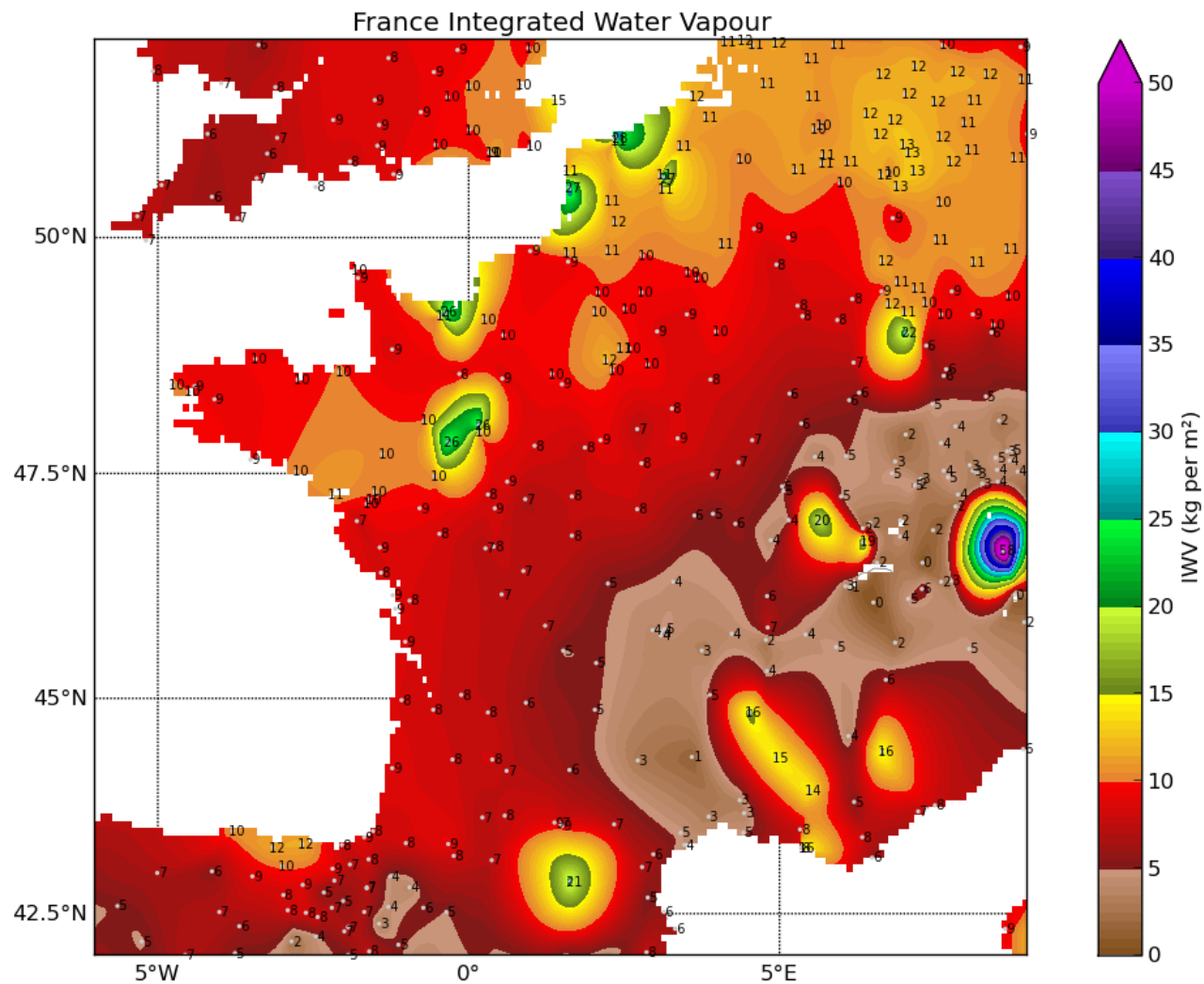
UK Integrated Water Vapour





IWV at 1300Z, 18/11/2013

V3.2 Crown Copyright 2013.. Source: Met Office



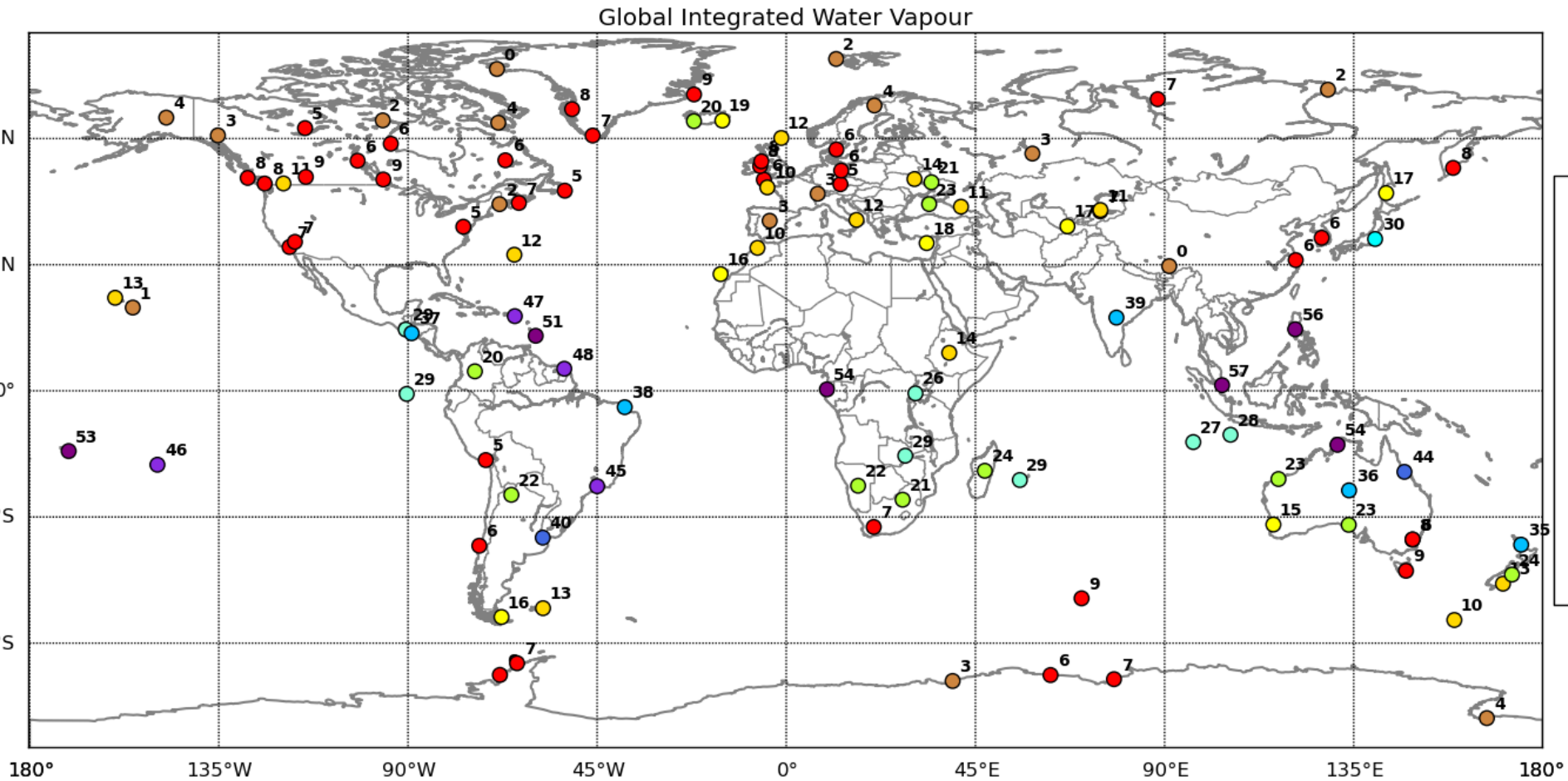
Dots = GPS sites Crosses = ATDnet fixes Barbs = Wind profiler (large barbs) and AMDAR (small barbs) data (between 1-2km)

IWV at 1400Z, 25/11/2013

V3.2 Crown Copyright 2013.. Source: Met Office



METG Plots



at 1500Z, 25/11/2013

V1.2 Crown Copyright 2013..



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V1.0 Crown Copyright 2012. Source



GNSS Network Renewal

- 9 new Leica GR10s + AR25s
- Upgrading ABYW, DUNK, UIST, WATN and WATT
- New sites at EXET, YEOV, OKEH and BATH
- Decommission RAL2, CARD, PERS and HURN
- All new sites ntrip 1sec data streaming
- Ntrip Caster server being built, Ntrip Client server in place
- Access will be available to trusted partners 😊
- Maybe ~20 more receivers but where to install??



Main plans for 2014

- Move to BSW52 (incl. VMF or GMF) – assess differences in ZTDs because of MFs
- Lots more sites in METG
- 20 more GNSS sensors
- Formal Met Office project to coordinate installation of new GNSS sensors
- Start work on GNSS-reflectometry for soil moisture and snow depth
- Sub-hourly TEC estimates for SWx



Questions