



World Meteorological Organization

Weather • Climate • Water

IWW input to the CGMS Baseline

IWW-12, Copenhagen, June 16-20 2014

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WIGOS and the CGMS Baseline

- WMO Integrated Global Observing System (WIGOS): a framework for integrating all WMO observing systems under one umbrella (GOS + WMO Hydrological Observing Systems, observing components of GAW and GCW)
- Regulatory Material is under development, with the aim of submitting it to WMO Congress in May 2015
 - Manual on WIGOS includes a description of the space-based component; this is provided by the CGMS Baseline (included as an attachment to the manual)



The CGMS Baseline

- The *CGMS Baseline for the Operational Contribution to the GOS* is a document adopted by CGMS-39 in 2011
- The opening paragraphs reads:

‘In support of the programmes coordinated or co-sponsored by WMO for weather and climate, CGMS Members plan to maintain the operational capabilities and services described below, that constitute the “CGMS baseline for the operational contribution to the GOS”.’



The CGMS Baseline (II)

- The Baseline describes the GEO sub-system (the “*Constellation in Geostationary Orbit*”) as follows:

“At least six geostationary satellites shall be operated at evenly distributed locations with in orbit redundancy, and perform the following missions:

- a) Advanced visible and infrared imagery (at least 16 spectral channels, 2km resolution) over the full disc at least every 15 minutes*
- b) Infrared sounding (hyperspectral on some positions)*
- c) Lightning detection*
- d) Data collection*
- e) Space environment monitoring”*



The CGMS Baseline (III)

- ... and it continues to say:

“On selected positions, the following missions shall be performed:

- f) Earth Radiation Budget monitoring*
- g) High spectral resolution UV sounding*
- h) Solar activity monitoring*

What about satellite winds?



Impact of AMVs

- The *Final Report of the Fifth WMO Workshop on the Impact of Various Observing Systems on Numerical Weather Prediction* (Sedona, Arizona, USA, 22-25 May 2012) contains the following summary sentence:

“There is broad consensus amongst the global NWP centres that the same observation types tend to be the highest-ranked contributors to forecast skill: AMSU-A (microwave temperature sounder), AIRS/IASI (hyper-spectral infrared temperature and humidity sounders), radiosondes, aircraft observations and atmospheric motion vectors (AMVs) from geostationary and polar orbiting satellites, although not necessarily uniformly in this order.”



Potential issue

- The CGMS Baseline talks about “*operational capabilities and services*”, and although AMVs are now recognized by WMO as a very important data-type, winds is not listed as a mission for the geostationary constellation
- Could (should?) be considered a driver for the design and operation of the constellation, in terms of e.g.
 - Orbital spacing
 - Scan mode (full-disc versus rapid)
 - Data processing (temporal and spatial density,...)
 - Data dissemination
 - ...

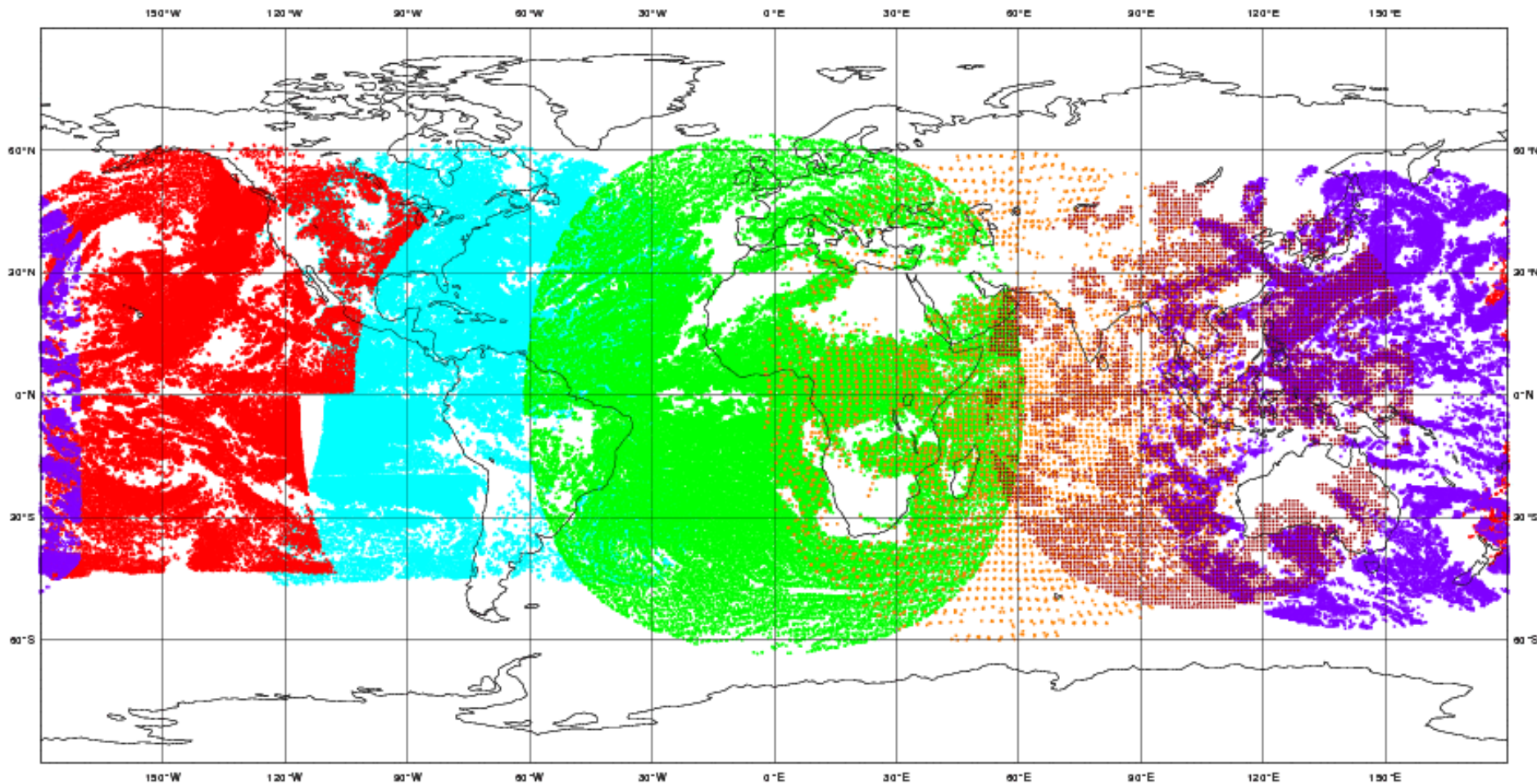


ECMWF Data Coverage (All obs DA) - AMV IR

13/Jun/2014; 00 UTC

Total number of obs = 303522

61375 Goes15 133793 Goes13 0 Met8 62326 Met10 34094 Mbat 0 FY-2D 4953 FY-2E 6961 Met7 0 Goes14



Suggestion for IWW-12

- *Keep the wording of the CGMS Baseline in mind as you discuss product generation and data usage for AMVs during the Workshop*
- *Consider whether making explicit a wind mission for the geostationary constellation could help strengthen this element of the GOS in terms of data quality, data availability and homogeneity across the operators*
- *If necessary, provide any recommendations the IWG Co-Chairs and the CGMS Rapporteur, so that the CGMS Baseline can be amended and updated where needed.*

