

Introducing recommendations from CGMS 39 to the 11th International Winds Workshop

Johannes Schmetz
Rapporteur to CGMS





Recalling the CGMS Charter/Terms of Reference (extract)

OBJECTIVES

- a) **CGMS provides a forum for the exchange of technical information on geostationary and polar-orbiting meteorological satellite systems and research & development missions**, such as reporting on current meteorological satellite status and future plans, telecommunications matters, operations, intercalibration of sensors, **processing algorithms, products and their validation**, data transmission formats and future data transmission standards.
- b) CGMS **harmonises to the extent possible** meteorological satellite mission parameters such as orbits, sensors, and data formats and downlink frequencies.
- c) CGMS **encourages** complementarity, compatibility and possible mutual back-up in the event of system failure through **cooperative mission planning**, compatible meteorological data products and services and the coordination of space and data related activities, thus complementing the work of other international satellite coordinating mechanisms.

MEMBERSHIP

- d) **CGMS Membership is open to all operators of meteorological satellites, to prospective operators having a clear commitment to develop and operate such satellites, and to the WMO, because of its unique role as representative of the world meteorological data user community. Further CGMS Membership is open to space agencies operating R & D satellite systems that have the potential to contribute to WMO and supported programmes.**
- e) The status of observer will be open to representatives of international organisations or groups who have declared an intent, supported by detailed system definition studies, to establish a meteorological satellite observing system. Once formal approval of the system is declared, membership of CGMS can be requested by the observer. Within two years of becoming an observer, observers will report on progress being made towards the feasibility of securing national approval of a system. At that time CGMS Members may review the continued participation by each Observer.
- g) The addition of new Members and Observers will be by consensus of existing CGMS Members.

There are four International Winds Working Group under the auspices of CGMS (1)

IWWG:

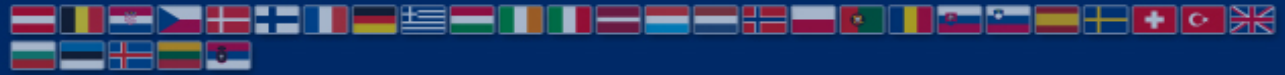
The International Winds Working Group (IWWG) held its first meeting in 1991 and became a formal working group of the Coordination Group for Meteorological Satellites (CGMS) in 1994. The group addresses the science and applications of winds derived from feature tracking in consecutive satellite measurements (images), ocean surface winds and also winds derived from future space-borne lidars. Objectives include the coordination of operational processing, the development of common verification and validation procedures, and the encouragement of a robust programme of scientific research resulting in advanced operational applications.

There are four International Winds Working Group under the auspices of CGMS (2)

- **ITWG:** The International TOVS Working Group (ITWG) is convened as a sub-group of the Radiation Commission of the International Association of Meteorology and Atmospheric Sciences (IAMAS). ITWG continues to organize International TOVS Study Conferences (ITSCs) which have met every 18-24 months since 1983. => **Regular reporting to CGMS**
- **IPWG:** The International Precipitation Working Group (IPWG) was established as a permanent Working Group of the Coordination Group for Meteorological Satellites (CGMS) on 20-22 June 2001
- **IROWG:** The International Radio Occultation Working Group (IROWG) was established as a permanent Working Group of CGMS at the 37th meeting on 26-30 October 2009

There are four International Winds Working Group under the auspices of CGMS (3)

- **All four scientific working groups are led by co-chairs**
- **Link between the scientific working groups and CGMS is through a rapporteur**
- **Rapporteurs are usually delegates of a CGMS member (=> multi-functional role of rapporteurs)**



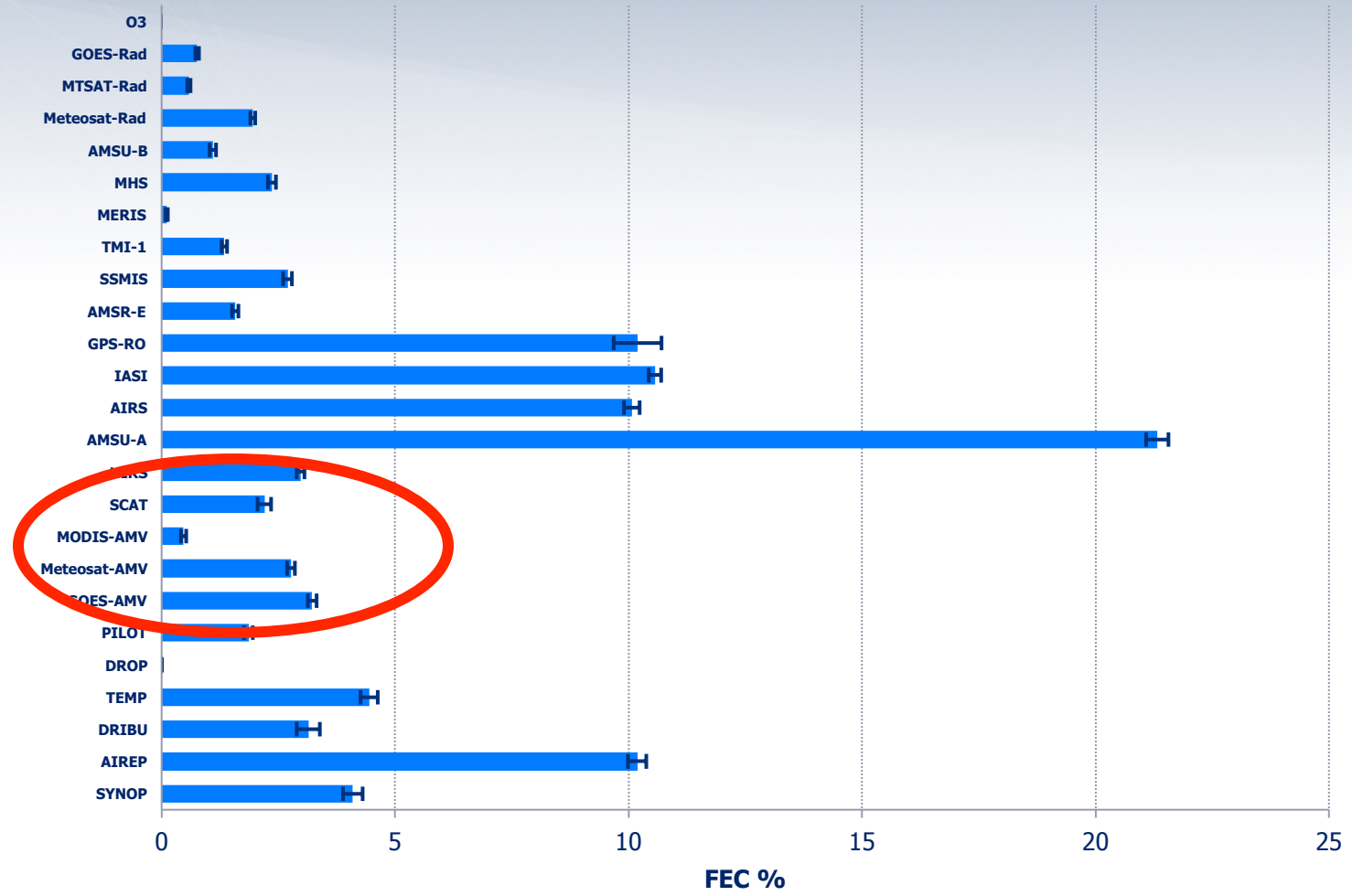
From a specific discussion item at CGMS 39: International Winds Workshop 11 – Studies of AMV Impact on NWP



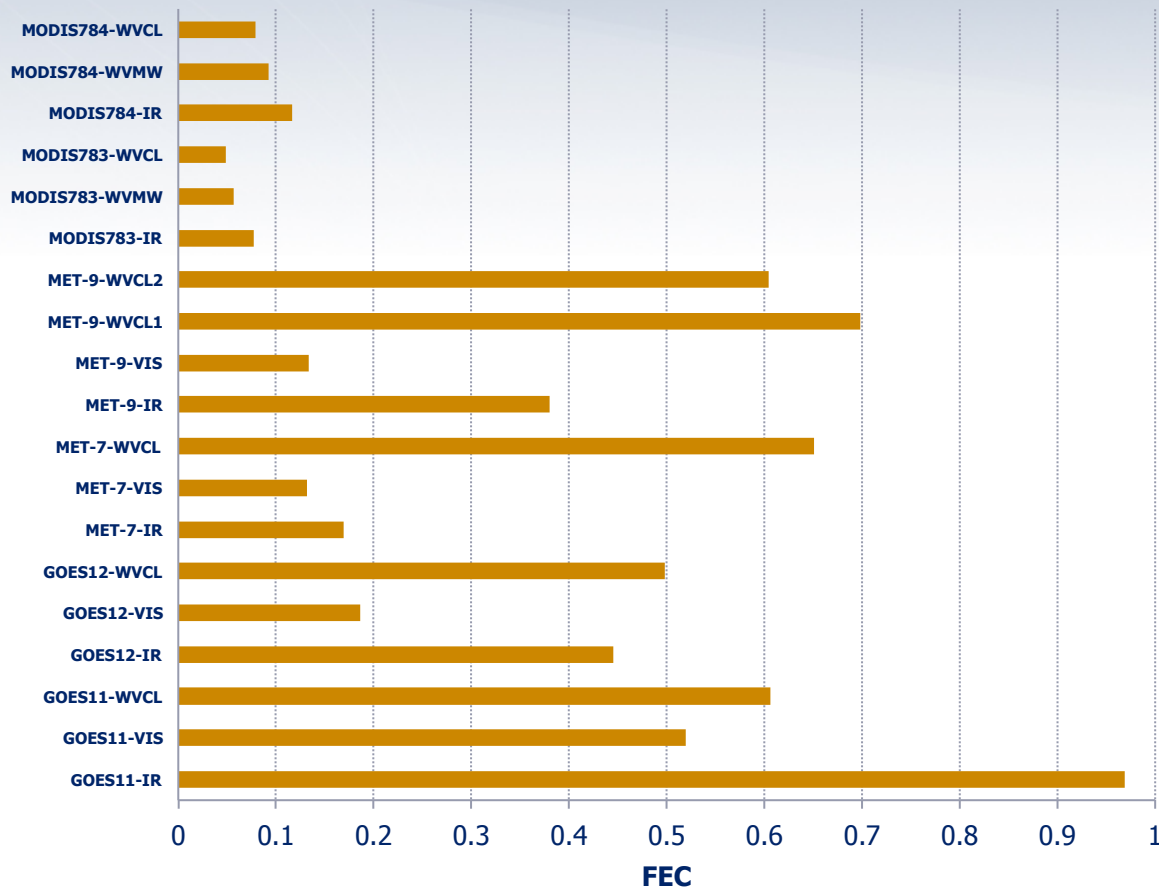
The impact studies have been performed by **Carla Cardinali**, ECMWF, 2011, *her support is acknowledged and should be minuted in the CGMS 39 report*



24 h 'Forecast Error Contribution' of Individual Components of the Global Observing System for June 2011 (C. Cardinali, ECMWF)



24 h 'Forecast Error Contribution' sliced by specific AMVs observations, June 2011 (C. Cardinali, ECMWF)



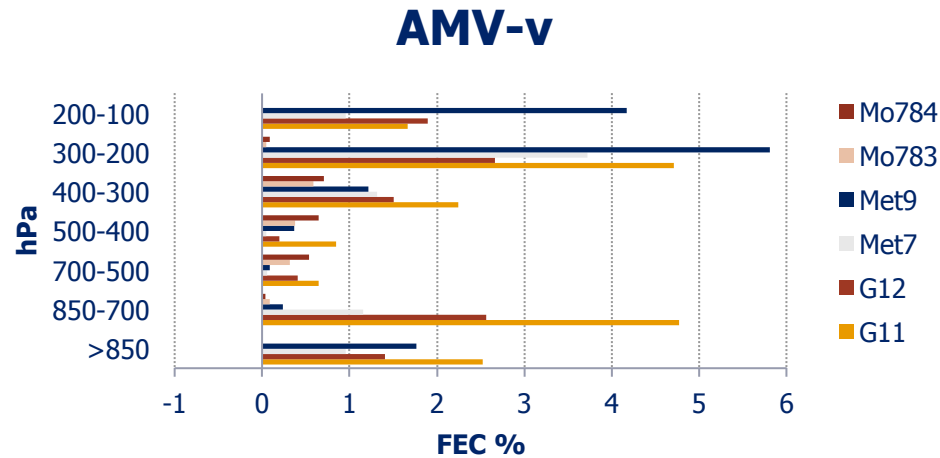
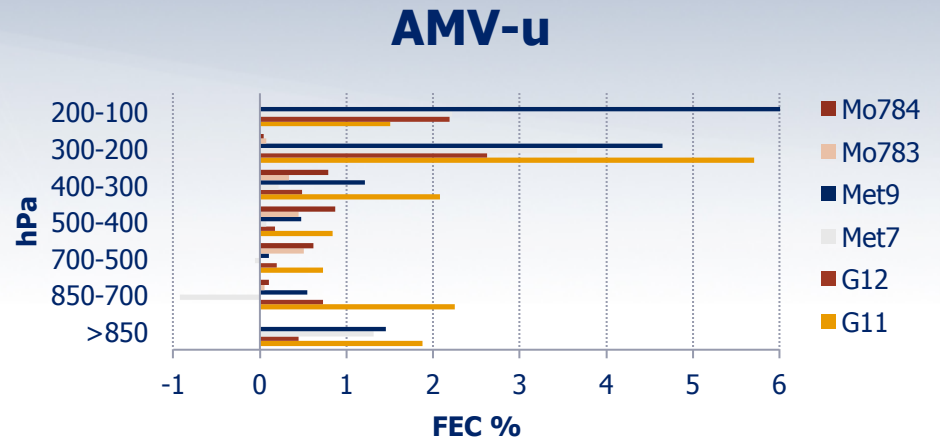
**Impact of different
AMV products from**

MODIS,

Meteosat-7, -8, -9,

GOES-11, -12

24 h 'Forecast Error Contribution' of the AMVs by instrument and for altitude intervals, June 2011 (C. Cardinali, ECMWF)



Impact of AMVs from

MODIS,

Meteosat-7, -9,

GOES-11, -12

sliced by pressure intervals



Pertinent discussions at CGMS39 (1):

- 1. Efforts by AMV producers are underway to:**
 - **improve AMV production in the known areas of weakness (height assignment, speed bias)**
 - **intercompare operational AMV products and algorithms**
 - **make the operational processing more consistent which is of benefit to NWP centers**
- 2. Recent impact studies at various NWP centers (like the one presented here from ECMWF with an adjoint technique) show a positive impact of AMVs (here from GOES, Meteosat and Modis)**
- 3. Also slicing the impact studies into individual components like IR winds, WV and VIS winds and/or level of AMVs shows positive results for nearly all of those components for the 24 h forecast**



Pertinent discussions at CGMS39 (2):

4. It was suggested that CGMS 39:

- Requests similar impact studies from other NWP centers**
- Requests NWP centers to analyse those results and to present them at the 11th International Winds Workshop in February 2012.**
- The 5th WMO Workshop on the 'Impact of Various Observing Systems on NWP' to be held in Sedona, AZ May 22-25, 2012, is an additional opportunity to report on and compare results of impact studies in a broader context . It would be good to have impact studies from as many NWP centers as possible.**



Discussion items related to IWWG for WG II at CGMS39 (3):

5. CGMS 39 should also:

- a) Request IWW11 to discuss the results from impact studies and synthesize general observations on performance**
- b) Request IWW11 to provide guidance to CGMS on which part of the 'global AMV observing system' would need improvement**



Actions and recommendations on winds from CGMS 39 (1):

Action 39.13: IOC is invited to prepare a paper on guidance to CGMS members on ocean wind measurements.

⇒ ***Dr. D. Halpern (IOC) agreed to present***

Action 39.29: All AMV providers to make efforts to have the quality of their products tested by NWP centers. The slicing into specific AMV products (e.g. from WV or IR channels) and segregation into vertical levels is advised. Deadline:
CGMS-40



Actions and recommendations on winds from CGMS 39 (2):

Action 39.30: The co-chairs of IWWG and the rapporteur are requested to discuss the results from NWP impact studies at IWW11, and to synthesize general observations on performance. Due date: IWW11 in February 2012 and report to CGMS-40.

Action 39.31: IWWG co-chairs and the rapporteur are requested to report to CGMS 40 on the 2nd AMV intercomparison campaign. Deadline: CGMS-40



Actions and recommendations on winds from CGMS 39 (3):

Recommendation 39.10: All AMV and CSR product providers are invited to continue or start the regular reprocessing of those products with state-of-the-art algorithms.

Recommendation 39.22: All AMV providers should make an effort to have the quality of their products tested by NWP centers. It is recommended to present such results already at the 11th International Winds Workshop in February 2012.



Actions and recommendations on winds from CGMS 39 (4):

Recommendation 39.23: CGMS-39 advised IWWG 11 to further address the salient issues and topics listed in EUM-WP-27.

⇒ *This (and more) is actually well captured by current discussions between IWWG co-chairs*

Recommendation 39.24: CGMS agencies are encouraged to support scientists to attend the next IWWG meeting.



Actions and recommendations on winds from CGMS 39 (5):

Recommendation 39.25: CGMS Agencies are invited to :

- i) further test the performance of the NWCSAF AMV software package by testing the products in a NWP data monitoring/assimilation system, and
- ii) extend the current software to clear-sky WV AMVs. (*=> done already*)

Recommendation 39.26: Satellite AMV providers are invited to examine the stand-alone AMV software package from the NWCSAF and to report back to CGMS 40.



Actions and recommendations on winds from CGMS 39 (6):

Recommendation 39.27: EUMETSAT NWC SAF to consider a version of the NWC SAF AMV software that allows running of alternative AMV algorithms. This would support algorithm intercomparisons studies (see also NOAA-WP-34 at CGMS-39).



Short statement on behalf of WMO to 11th IWW (1)

- **High attention is given by WMO** and CGMS to the work of IWWG (like ITWG, IPWG and IROWG)
- The latest session of the WMO Expert Team on satellite utilization (ET-SUP) stressed the need for enhanced/renewed interaction with the IWWG. **It recommended that the International WGs under CGMS better prioritize their recommendations to allow for more effective uptake by WMO and satellite operators** (Background: IWW was OK)
- **User training:** there is a well established and active WMO-CGMS Virtual Laboratory for Education and Training in Satellite Meteorology (VLab), where expertise of IWWG would be very helpful; Jaime Daniels confirmed in an email to S Bojinski of WMO/SP (23 Dec 2011): *"Thank you for the suggestion and IPWG example for adding a training section to the IWWG web site. I agree that the inclusion of this information on the IWWG site would be very useful. I will bring this topic up at our next IWWG meeting (scheduled for 20-24 February, 2012)."*

11th International Winds Workshop Auckland, 20 – 24 February 2012



Short statement on behalf of WMO to 11th IWW (2)

- WMO Space Programme's is committed to facilitate data access, inter alia by interaction with and gentle pressure on all satellite operators
- Available assets that IWWG may use:
 - * new requirements database <http://www.wmo-sat.info/db>
 - * online database on satellite and instruments (available soon, will replace the "Dossier"http://www.wmo.int/pages/prog/sat/gos-dossier_en.php)
 - * Product Access Guide (under development at http://www.wmo.int/pages/prog/sat/product-access-guide_en.php - includes links to some wind products)



Finally : Restructuring of CGMS is ongoing

KEY CONSIDERATIONS

- Any restructuring will be performed keeping in mind that CGMS will retain its role as an international mechanism for technical coordination, and a unique source of information on the activities of the different CGMS members and observers.
 - Proposed changes should enhance CGMS deliverables and member responsiveness with regard to development of standards, guidelines, baseline architecture, and contingency plans and agreements.
 - An objective is to reorganize the agenda to justify and facilitate the presence of heads of member agencies, at least to the Plenary part of the meeting.
- ⇒ **as part of the preparation for restructuring: all co-chairs and rapporteurs are invited to meet in Sopot (Sept 2012) before the next CGMS meeting to discuss and agree on coherent processes**