

GOES-R AWG Technical Advisory Committee 2010

10 June 2010

Introduction

Comments

Volcanic ash work is stellar; real time application of the GOES-R algorithm using SEVIRI data having positive impact in Europe

- coordinate transfer of algorithm and s/w to Europeans through CGMS

Good use of CALIPSO in cloud and winds work

GPO is acknowledged for funding AWG teams to work on Option 2 algorithms (even though Option 2 was not approved for day 1) has enabled no additional cost Option 2 availability now that it has been approved (e.g. there are no startup costs, etc.)

Concerns

Transfer of AWG work to Harris

- emphasis on ATBDs should not be to exclusion of s/w and benchmark data
- scientist must still recognize code and be able to interact with it after transfer
- must avoid loss of scientific content
- lock in 6 years before launch must be avoided (update strategy before Day 1)

Applications with intermediate products of use to the community should plan to retain the possibility of providing this information as a day 2 product enhancement (eg Ice thickness, Fog probability and Volcanic...)

Need more utilization of temporal continuity of geo measurements for product QC

- for example Reff could benefit from consistency tests

Temporal continuity should be added as a verification methodology

Leo as supplement / complement to Geo must continue to be worked

- Leo has MW, hyper spectral IR, and provides benefits; intercalibration, soundings, ERBE, rainfall

Synergy of GLM and ABI needs more attention

- not much mention made

Impact of rectification / saturation / truncation / striping error on products

- some investigations remain to be done
- rectification (perfect geo projection) effects on fires and winds
- saturation in clouds (reflected) and fires (4um) needs characterization
- truncation error in clouds (4um)
- what about detector to detector striping (EDF ?)

Preparation for day one NWP impact is wanting

- engagement of JCSDA in AWG and R3 needs to be more robust
- cloud free radiances
- hourly winds
- sfc emissivity

Visualization of data and products has had little mention

- what products will be sent via AWIPS vs produced locally (eg. true color image)

Risk Reduction transfer into AWG

- how will this occur?
- want to avoid successful R3 products failing to get into operations
- SPSRB process has rigor (funding needs to be attached when products go forward)

ITAR restrictions are inhibiting information exchange with international partners

- need some relief
- recommendation to GOES Program Office

General

- Positive response to 2009 TAC comments and suggestions.
- Activities are on track. TAC sees no show stoppers. Good progress has been made on day one and day two algorithms.
- Their remains important items still needing attention

TAC Recommendations (4 old, 7 new)

o The length of the post-launch check-out needs to be at least one year. Current GOES post-launch check-out is six months (with one month dedicated to the science tests), but the new spacecraft, new instruments and new products dictate the necessity for a much longer check-out period. A longer period for checkout and phased operations, similar to the European commissioning, is recommended.

o Due to the greatly improved capabilities of the GOES-R system (total lightning, volcanic ash, aircraft icing, fog, turbulence, etc) and large investment, the GOES-R should be put into operational service as soon as possible. This best would allow the Nation reap the benefits of GOES-R.

o Field campaigns for validation of GOES-R sensor measurements and derived products must be planned as soon as possible. The detailed Basis of Estimate should take into account other planned validation campaigns and assets as much as possible. Coordination with other programs requires early commitment.

o An advanced geostationary sounder should be pursued as soon as possible. This will improve many ABI-only products, meet the NWS sounding requirements of 1983, and restore several products that were previously on the GOES-R products list (trace gases, moisture flux, etc). The advanced sounder is the most important single satellite instrument in terms of eliminating short-term forecast errors (Cardinali, QJRMS, 2009). All options (coordination with other countries, commercial data buys, etc.) should be aggressively pursued.

* GPO should take action so that ITAR restrictions on the characterization of GOES-R data (spectral bands, signal to noise, bit depth, ...) and products (e.g. winds, volcanic ash, fog, ice clouds,...) are alleviated as soon as possible, given that GOES-R will be an important contribution to the Global Observing System.

* The process for updating/adjusting the operational algorithms should be tested well before launch, so that efficient responsive corrections can be made after launch.

* AWG teams should emphasize the study of the impact of rectification / saturation / truncation / striping error on products. There should be special attention to truncation error in clouds in the 4 um band, rectification effects in the fire product, detector to detector striping on spectral band and derived product images.

* Temporal continuity of products should be added by the AWG as a validation consideration.

* The process for introducing new operational products (proven in the GOES-R risk reduction program) must be streamlined and tested. There will be many new and enhanced products introduced by GOES-R. In addition, care should be taken to retain intermediate products. While operational products sometimes are displayed in simplified form for efficiency (e.g. in binary yes/no fashion), information content of the intermediate and final products should be retained for subsequent product enhancements (e.g. ice thickness, probability of fog, SO₂ amounts, etc).

* The GPO should explore success criteria from a customer perspective for each GOES-R product to help assure success of Day-1 products and plan for needed improvements to Day-2 products and data services.

* NWP engagement, particularly through the JCSDA, in early testing of improved ABI/GLM products must be strengthened. Suggested products include cloud free radiances for assimilation, hourly winds, surface emissivity, ...

* More emphasis must be placed on synergy of GLM and ABI (rainfall, atmospheric chemistry) and the supplementing/complementing of Geo by Leo observations (Leo has MW and hyper spectral IR and should benefit intercalibration, soundings, ERBE, rainfall).

* Since the GOES-R Day-1 product requirements do not include new and enhanced GOES-NOP operational products implemented before GOES-R operations in 2017, the GPO should consider supporting the AWG to conduct a GOES-R Data Exploitation program to transition new and enhanced GOES-NOP products to GOES-R operations. The NESDIS Satellite Products and Services Review Board (SPSRB)

manages the GOES-NOP algorithm development /operational implementation activities and can provide information on new and enhanced products. The inclusion of these additional GOES-NOP products in GOES-R operations is essential for ensuring mission continuity requirements are met.

TAC members

David Byers

Mike Johnson

John LeMarshall

Paul Menzel

Russ Schneider

Kevin Schrab

Tom Vonder Haar (attended but missed discussion)

Tom Schott (absent)

James Yoe (absent)

Jim Gleason (absent)