

# DAARWG Recommendations Related to GOES-R Level 0 data

W. Christopher Lenhardt

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# Topic Under Consideration

- Whether NOAA should re-examine its decision not to preserve a long-term archival copy of GOES-R Level 0 data.
- This topic was addressed at multiple DAARWG meetings and DAARWGs recommendations were finalized at the October 2014 meeting.

# Some Terminology from GOES-R

- *Level 0*
  - *Reconstructed unprocessed instrument data at full resolution; any and all communications artifacts (e.g. synchronization frames, communications headers) removed.*
- *Level 1a data*
  - *Level 0 data with all supplemental information appended for use in subsequent processing.*
- *Level 1b data*
  - *Level 0 data, with radiometric and geometric correction applied to produce parameters in physical units.*

# DAARWG's understanding of the current situation

- NOAA's decision not to archive Level 0 data was largely a factor of the way the satellite system specification process was conducted. There was ultimately a disconnect between stakeholders who might raise relevant archival questions and the other parts of the technical and procurement process as it went forward.
- The current plan is for NOAA to maintain a copy of Level 0 data for at least two years to support the potential for reprocessing due to calibration/validation issues determined at a future date.
- Level 1a data will not be saved, Level 1a only exists as an interim processing artifact.
- Level 1b data is the current product targeted for long-term archival maintenance.

# DAARWG Recommendations for SAB to forward to NOAA

- DAARWG endorses - the digital data curation standard practice to archive the lowest level satellite data possible as recognized by the data curation and science communities for potential future reprocessing. This would be in addition to archiving derived products.
- DAARWG encourages - NOAA to ensure that all future satellite development efforts consider data archiving requirements at the beginning and throughout the development process.
- DAARWG recommends - NOAA utilize the interim period of two to three years before the first round of L0 data is slated to be discarded to host a workshop to invite the relevant communities, e.g. scientists and others, to examine in more detail the utility of maintaining a L0 copy of data for the long term. The output of this workshop should influence NOAA's policy regarding the archival of GOES-R L0 data.

# Rationale

- DAARWG understands - re-engineering the GOES-R data system at this stage may be costly, and that potential users of antecedent data products, i.e. L0 or L1a, may not have much experience working with these types of data
- Nevertheless, DAARWG members feel –  
Given the overall investment in the GOES-R system and the potential value of the data, DAARWG argues that the rapidly decreasing cost of storage and bandwidth may lead to alternative cost effective ways to archive L0 data for the long term. At the very least, given technological advances, a NOAA effort, such as a workshop or a short series of workshops, to examine the potential for a cost-effective, a long-term archival solution is warranted and would be a worthwhile investment in support of NOAA mission and relevant national priorities. In addition, inviting relevant communities of scientists and other potential end-users to assess the potential demand for access to lower level products is also warranted and could have benefits for other NOAA satellite data. DAARWG believes that the currently perceived lack of demand is due in part to the relevant communities not having experience with these data. Asking communities to think about uses for these data may create such demand and provide a valuable service in the process.

# Relevant Resources

- Workshop Report on Global Change Science Requirements for Long-Term Archiving
  - <http://www.globalchange.gov/browse/reports/global-change-science-requirements-long-term-archiving>
- NASA Earth Science Data Preservation Content Specification
  - [https://earthdata.nasa.gov/sites/default/files/field/document/423-SPEC-001\\_NASA%20ESD\\_Preservation\\_Spec\\_OriginalCh01\\_0.pdf](https://earthdata.nasa.gov/sites/default/files/field/document/423-SPEC-001_NASA%20ESD_Preservation_Spec_OriginalCh01_0.pdf)