Direct Broadcast Software Packages ITWG Technical Subgroup Report on Issues Arising from ITSC-18

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INTERNATIONAL
ATOVS
WORKING GROUP

Group Charter

1. Discuss issues related to real-time processing of direct broadcast data from polar orbiting meteorological satellites including MetOp, POES, EOS, SNPP/JPSS, FY-3, Meteor, GCOM

2. Cover all platforms and sensors including sounders (infrared and microwave) <u>and</u> imagers

3. Not a forum to discuss science and algorithms; instead the group will work on the issues which allow the ITWG community of DB users to do science

Topics of Interest

1. Forum for discussion of DB processing packages (AAPP, IAPP, IMAPP, IPOPP, CSPP, and associated packages/utilities)
   - Advertise new features and versions
   - Discuss bugs, problems, feature requests
   - Provide feedback to package developers

2. Provide information to the ITWG DB community on the transition from current polar orbiters (e.g., POES, Terra, Aqua) to new/future missions (e.g., MetOp, SNPP, JPSS, FY-3, GCOM)

DB Software Packages

Review available software packages and versions (e.g., AAPP, IAPP, IMAPP, CSPP...)

Ensure L1B calibration algorithms and LUTs are up to date and _used_ by the DB community

Discuss products planned for release or desired by the DB community

Provide mechanism for algorithms developed in the DB community to be packaged and released

Transmit recommendations to package developers on output formats (e.g., BUFR) for ingest into assimilation systems

Understanding and preparing for future systems (e.g., FY-3C, JPSS)

Topics

1. Pre-built binaries vs. compiling source code

Recommendation was for software developers to provide pre-built binaries where possible.

Result: CSPP, IMAPP, FY-3 packages all provide pre-built binaries. May need to revisit this topic for AAPP and IAPP.

2. Continued support of IAPP

The group noted that IAPP does not yet support Metop-B or Suomi NPP.

Result: SSEC has added support for Metop-B in IAPP April 2014 version. There are no plans to add support for SNPP since retrieval packages are now available for CrIS and ATMS in CSPP.

Topics

3. New features in AAPP and IMAPP

The group noted that AAPP v7 is now available and it adds support for post processing of Suomi NPP SDR (level 1) data. IMAPP has added a new suite of cryosphere products and an air quality monitoring/forecasting system.

Result: N/A.

4. FY-3 DB processing software

The group noted that a new version of FY-3 direct broadcast processing software supporting FY-3A and FY-3B was released by NSMC/CMA on January 1, 2012. The application form for obtaining permission to download the software is available at

http://satellite.cma.gov.cn/ArssEn/StaticContent/DocumentDownload.aspx

Result: N/A

Topics

5. CSPP

The group noted that CSPP execution time was a concern. The CSPP team said it would provide a set of recommended hardware specifications and timing benchmarks.

Result: CSPP now provides benchmark data in it's documentation for VIIRS SDR and EDR packages. Multi-core support has been added which drastically reduces processing times.

6. Contributions from users

The group noted that DB users may develop algorithms that could be used by others in the DB community. An action was assigned by the PSWG to find ways to encourage and assist users in making this happen.

Result: Several community-developed algorithms have been added to IMAPP and CSPP.

Topics

7. Status of current DB software packages

The group developed a comprehensive list of available software packages as an action from ITSC-17. An action was assigned by the PSWG to update this list.

Result: An list of software packages was created and will be posted on the ITWG/PSWG website.

8. EARS format for VIIRS rebroadcast

The group noted that EUMETSAT has drafted a format specification for VIIRS rebroadcast on EARS. EUMETSAT is soliciting input on how the format can retain necessary information for further downstream product generation while reducing bandwidth.

Result: The EARS-VIIRS format has been defined by EUMETSAT with input from CSPP team.

Topics

9. Using DB software for processing global data from archives

The group noted that some users wish to process data from global archives (e.g., use AAPP to process AVHRR data from NOAA CLASS). Software developers should maintain the ability to process either DB real-time or archived global data.

Result: CSPP, IMAPP, and AAPP have all retained the capability to process either DB or global archive data.

10. Feedback from users

The group noted that it is important to listen to and solicit feedback from users. The AAPP, IMAPP, and CSPP projects all have online forums, and users should be made aware of these resources and encouraged to use them.

Result: The AAPP, IMAPP, and CSPP forums remain active.