

TT-SAT Task Team Report

Axel Von Engeln & Lori Borg

30 November 2022

ICM -14



Members

(as at 2022-10-20)

Name	Organisation
Lori Borg (co-chair)	SSEC, University of Wisconsin-Madison, US
Axel von Engel (co-chair)	EUMETSAT, DE
Stephen Leroy	AER
Tony Reale	NOAA / NESDIS / STAR
Benjamin Ruston	UCAR
Chi Ao	Jet Propulsion Laboratory, California Institute of Technology
Johannes Nielsen	Danish Meteorological Institute
Florian Ladstädter	Wegener Center, University of Graz, Austria
Fabien Carminati	Met Office
Jordis Tradowsky	Bodeker Scientific
Bomin Sun	NOAA
Thomas August	EUMETSAT

Progress with provision of satellite based ancillary measurements to RS92/RS41 colocation database (A2, initially raised at ICM-9)

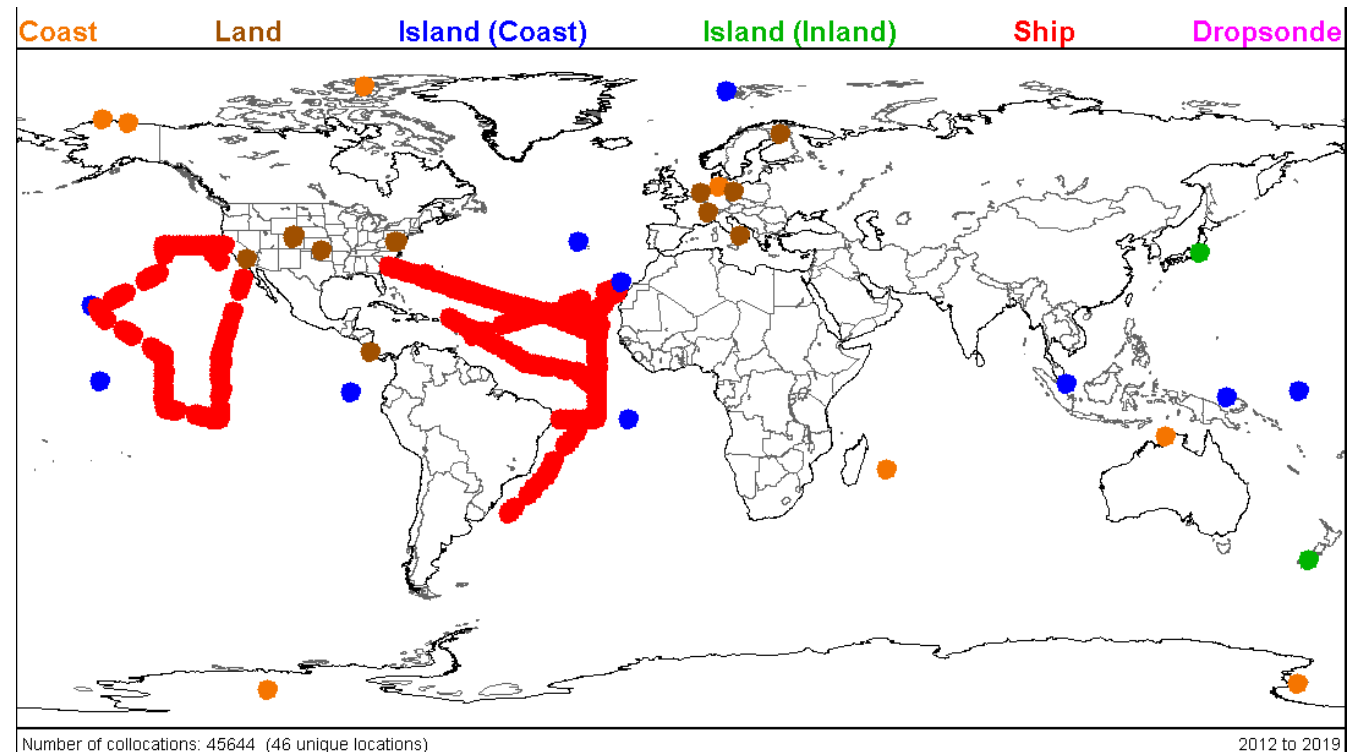
- TT-SAT tasked to provide Lead Centre (LC) collocated satellite measurements with historical RS92/41 database
- **Fulfilling this action is complex**
 - Which satellite data (infrared, microwave, radio occultation)
 - Which satellite data products (level 1,2,3)
 - Which colocation criteria (e.g. 1 hour and 100 km ...)
 - Need for built in flexibility to accommodate reprocessing of satellite data sets
- **Paths Forward**
 1. Leveraging NPROVS (Tony Reale & Bomin Sun)
 2. Enhancing capabilities query GRUAN database

Progress with provision of satellite based ancillary measurements to RS92/RS41 collocation database (A2, initially raised at ICM-9)

1. NPROVS (Tony Reale & Bomin Sun)

- NPROVS routinely (daily) compiles datasets of collocated radiosonde, dropsonde, numerical weather prediction (NWP) and satellite sounding product observations
- NPROVS being updated to include GRUAN processed radiosondes (now includes Vaisala processed)
- NPROVS files will become publicly available

<https://www.star.nesdis.noaa.gov/smcd/opdb/nprovs/>



Progress with provision of satellite based ancillary measurements to RS92/RS41 colocation database (A2, initially raised at ICM-9)

2. Enhancing capabilities to query GRUAN database of radiosondes

- User would be able to determine for a given radiosonde, including dual RS41/RS92 launches and sequential sondes (ie two sondes within 3/4 of an hour collocated with an overpass), which satellite observations are available that are within a configurable time/space window (at the surface for polar and at 100 hpa for GPSRO)
- These queries would include information for the NOAA-20, SNPP, Metop-A,B,C, GRAS, and COSMIC
- User would then use this information to identify cases to assess and then either get the data directly from the satellite data archives

NOAA Data Archive - CLASS

NOAA HOME WEATHER OCEANS FISHERIES CHARTING SATELLITES CLIMATE RESEARCH COASTS CAREERS

NOAA COMPREHENSIVE LARGE ARRAY-DATA STEWARDSHIP SYSTEM (CLASS)
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

» CLASS Home » Login » Register » Help » About CLASS » **RSS** » CLASS Help » All NOAA » SEARCH

JPSS CrIS Sensor Data Record Operational (CrIS_SDR) » GO

Search - CRIS_SDR

Data Description

JPSS CrIS Sensor Data Record Operational (CrIS_SDR) - In conjunction with the Advanced Technology Microwave Sounder (ATMS) the Cross-track Infrared Sounder collects atmospheric data to permit the calculation of temperature and moisture profiles at high (~ daily) temporal resolution. The Cross-track Infrared Sounder (CrIS) provides improved measurements of the temperature and moisture profiles in the atmosphere. Forecasters use temperature and moisture sounding data in advanced numerical weather prediction models to improve both global and regional predictions of weather patterns, storm tracks, and precipitation.

Details - Metadata, Documentation

Notes

03/11/2022 - Please note, CLASS offers a reprocessed version (pre 1/30/2020) of this data using the improved algorithms. See the [RPCRISDR](#) products search page for details.

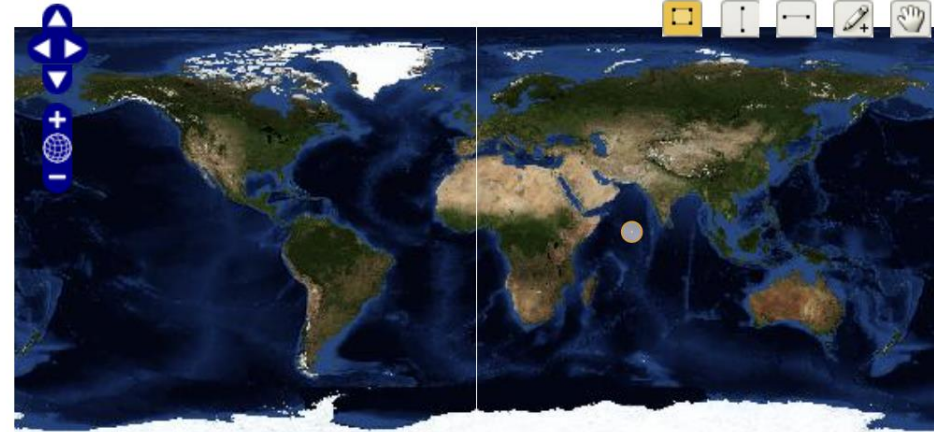
06/01/2018 - Many products from NOAA-20 are now available through CLASS back to Beta Maturity. Please note that the start dates listed below for each datatype apply to SNPP files. The start dates for all products by maturity levels by satellite id are available on NOAA's STAR website at <https://www.star.nesdis.noaa.gov/jpsa/AlgorithmMaturity.php>. Under each date there is a link to the full review of the product along with the latest readme on the last column. We encourage all users to assess product maturity before ordering and applying the data.

Beginning on August 11-14, 2014, CLASS started receiving the majority of JPSS data in gzip compressed format. The file names remained the same. Other than the file size being smaller, users do not need to make any changes to their software to use the data.

On December 4, 2014, at approximately 1509 UTC, the CrIS Instrument transitioned to full spectrum mode. Full length Interferograms for the Mid-Wave and Short-Wave IR channels are now being collected. All Stored Mission Data products, SDRs, and higher level products are expected to remain unchanged.

Spatial

<https://www.avl.class.noaa.gov/saa/products/welcome>



4.22

64.69 64.69

4.22

Max Area

68.91, 4.22

Temporal

(maximum range is 366 days)

Start Date (format: YYYY-MM-DD)

Start Time (UTC) (format: HH:MM:SS)

End Date (format: YYYY-MM-DD)

End Time (UTC) (format: HH:MM:SS)

Specify the range of the times for: Each Day Or The Entire Range Of Days

Advanced Search

Datatype

Sensor Data Record

- CrIS Full Spectral Science SDR (SCRIF) (public 03/08/17)
- CrIS Science SDR (SCRIS) (public 04/19/12 - 06/24/2020)

Geolocation

- CrIS SDR Ellipsoid Geolocation (GCRSO) (public 04/19/12)

Node

- Ascending
- Descending
- Either

Satellite

NOAA-20
S-NPP

to place large order without reviewing inventory or granule (file) metadata.

to place small order after reviewing inventory and granule metadata, including browse images when available.

Progress with provision of satellite based ancillary measurements to RS92/RS41 colocation database (A2, initially raised at ICM-9)

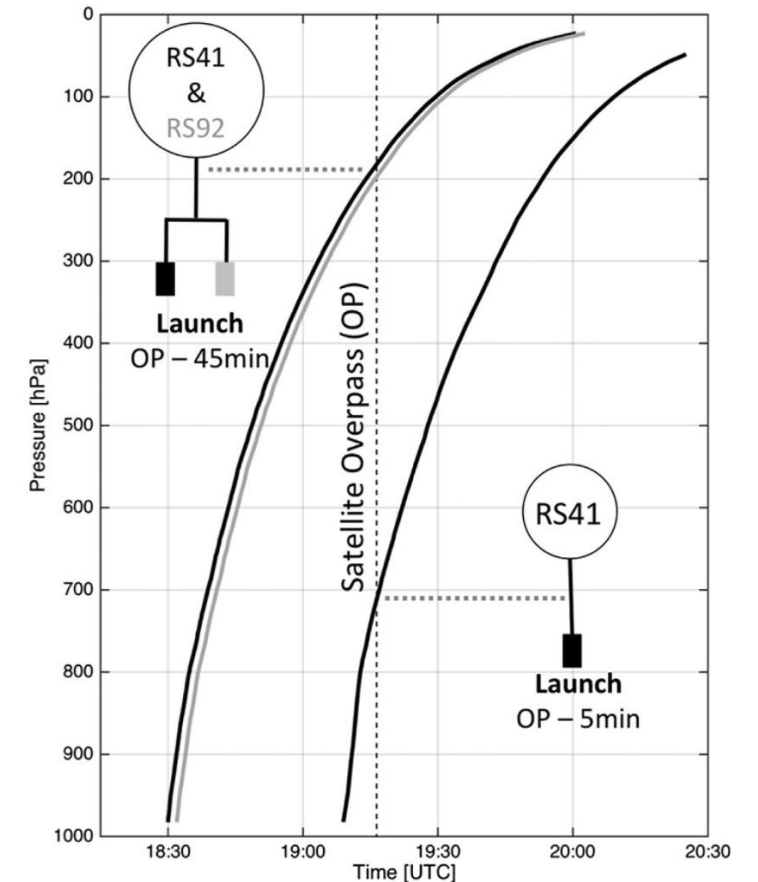
TT-SAT recommendation - Enhance capabilities of querying GRUAN radiosonde database

- Format/extent of the querying/database capabilities should be discussed
- This functionality would reside at the LC
- This would make the GRUAN radiosonde archive more relevant/usable to the satellite community

Radiosonde Intercomparison & VALidation

- RIVAL was GRUAN/JPSS/ARM IOP w/focus on RS92/RS41 transition at ARM sites at ENA, NSA, & SGP
- Campaign began in February 2018 and ended January 2022
- RIVAL launches targeted NOAA20 satellite overpasses at each of the field
- RIVAL team will be analyzing this data

RIVAL Sonde Launches			
Site	ENA	NSA	SGP
Start Date	26 Apr 2018	20 Jun 2018	13 Feb 2018
End Date	18 Oct 2019	20 Oct 2019	12 Jan 2022
Launches Completed Total (Single/Twin)	54 (54/0)	19 (12/7)	110 (38/72)



RIVAL Twin Launch Configuration