



NOAA Operational Ocean Products from AMSR-2 Microwave Radiometer

Zorana Jelenak, Paul Chang, Suleiman Alsweiss, Jun Park, and Patrick Meyers
NOAA/NESDIS/STAR, College Park, MD, United States (zorana.jelenak@noaa.gov)

The Japanese Aerospace Exploration Agency (JAXA) Global Change Observation Mission (GCOM) consists of two satellite series, Water (GCOM-W) and Climate (GCOM-C). The first satellite of the GCOM program, GCOM-W1, was launched on May 18, 2012 carrying the follow-on to the Advanced Microwave Scanning Radiometer – Earth Observing System (AMSR-E), AMSR-2. NOAA's GCOM-W1 product development and validation project will provide NOAA's users access to critical geophysical products derived from AMSR-2. These products, which are detailed in NOAA's Joint Polar Satellite System (JPSS) Level 1 Requirements Document Supplement, include:

NOAA AMSR-2 Product Requirements:

Day 1 Product Capability

- Microwave Brightness Temperature (MBT)
- Total Precipitable Water (TPW)
- Cloud Liquid Water (CLW)
- Precipitation Type/Rate (PT/R)
- Sea Surface Temperature (SST)
- Sea Surface Wind Speed (SSW)

Day 2 Product Capability

- Soil Moisture (SM)
- Sea Ice Characterization (SIC)
- Snow Cover/Depth (SC/D)
- Snow Water Equivalent (SWE)
- Surface Type (ST)

GCOM-W1 data is being captured at the KSAT Svalbard Ground Station and assembled into APID packets. Using the JPSS (NPP) infrastructure, the GCOM raw data (APID packets) are routed to the NOAA Interface Data Processing System (IDPS), in near-real time. Once received at the IDPS, the APID packets will be reformatted into Raw Data Records (RDRs) and sent to the NPP Data Exploitation (NDE) system for distribution to the Environmental Satellite Data Processing System where further processing to brightness temperatures (Level 1)/sensor data records (SDRs) and geophysical products (Level 2)/Environmental Data Records (EDRs) will be performed. The RDRs are processed to SDRs utilizing software provided by JAXA.

The goal of the product processing system is to provide validated operational L2 products from the AMSR-2 instrument that address the GCOM-W1 requirements in the JPSS L1RD Supplemental for distribution to operational users. Additionally, the Level 2 processing system must also be easily maintainable over the life of the mission and be adaptable to handle any required modifications due to potential AMSR-2 channel degradation and anomalies.

An overview and results of the NOAA AMSR-2 product development and validation system will be presented with an emphasis on the validation and utilization of the day-1 products.