

Update on SCOPE-Nowcasting Pilot Project 3: Precipitation / Severe Rainfall Risk Reduction

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Agenda Item 5 – Pilot Projects

Overview

- Satellite quasi-global precipitation products (60° N-60° S) for Severe Rainfall Risk Reduction
- Blended (GEO+LEO) near real time precipitation product
 - TMPA real time product (v7) → more accurate, high latency (~8 hours)
 - Last 24, 48 and 72 hours accumulation
- Global Hydroestimator (IR+NWP) → less accurate, low latency
 - 1 hour accumulation & 2-hours forecast

User requirements

- Provide a reliable source of global rainfall accumulation at the highest possible temporal and spatial resolution
- Rapid and facilitated access to the information → Web based interface
- Interactive tool for emergency managers and civil defence authorities → GIS based tool
- Ability to include more products: flash flood guidance (R. Adler group)

Product generation and distribution

- Product generation: The TMPA (3B42) RT dataset is provided by NASA PSS. The accumulated rainfall and will be uploaded, computed and integrated by INPE.
- The global Hydro-Estimator are under 24/7 support, and provided to users through the ESPC Data Distribution Server (DDS).
- INPE will produce real time rainfall nowcasting (up to two hours) using its own short-term forecast software (ForTrACC).
- INPE will integrate those products on a GIS web-based platform (SIGMA)

Scope for harmonization with other providers

- The global Hydro-Estimator was implemented into the Earth System Prediction Capability (ESPC) operation and it was declared as an operational product
- The ESPC is a developing collaboration between the National Oceanic and Atmospheric Administration (NOAA), U.S. Navy, U.S. Air Force, Dept. of Energy (DOE), National Aeronautics and Space Administration (NASA), and the National Science Foundation (NSF)

Scope for harmonization with other providers

- The TRMM Multisatellite Precipitation Analysis (TMPA) real time product is supported by the Mesoscale Atmospheric Processes Laboratory from the NASA Goddard Space Flight Center (<http://precip.gsfc.nasa.gov/>).
- The TMPA-RT is running quasi-operationally on a best-effort basis at the Precipitation Processing System (PPS; formerly the TRMM Science Data and Information System, TSDIS), with on-going scientific development by the research team led by Dr. George Huffman in the GSFC Mesoscale Atmospheric Processes Laboratory.

Institutional commitments for sustained product generation

- CPTec/INPE is implementing all the processing system into a new Xeon E5405 server with 16 Mb RAM memory and 1 Tb disk (local storage).
- TMPA products are running on real-time and the forecast system is under implementation phase.
- The SIGMA web-based GIS system is based on public domain software and an in-house team is developing all the interfaces.
- An agreement letter from our institution could delivered for sustained product generation.