

## **Proving Ground Operations Plan Proposal**

Please fill out and return to the GOES-R Program Office ([bonnie.reed@noaa.gov](mailto:bonnie.reed@noaa.gov)).

**(1) Project Title:** Tropical Pacific Testbed (TPT) for GOES-R Application Development

**(2) Organization:**

- a. University of Hawaii, Meteorology Department
- b. NWS Pacific Region
- c. NWS Weather Forecast Office (WFO), Honolulu, HI
- d. Central Pacific Hurricane Center
- e. Aviation Meteorological Watch Office (MWO)
- f. Joint Typhoon Warning Center (JTWC)

**(3) Products to be demonstrated:**

- a. UW Convective Initiation (GIMPAP)
- b. Lightning Detection (Baseline)
- c. Lighting-based tropical cyclone rapid intensification index (RII) (Risk Reduction)
- d. Volcanic ash detection and height (Baseline)
- e. SO<sub>2</sub> detection (Future Capabilities)
- f. Orographic rain index (ORI) (Risk Reduction)
- g. Rainfall Rate/QPE (Baseline)
- h. Total Precipitable Water (GOES Sounder/Microwave Morph) (Baseline-ish)
- i. GOES-R Natural Color (Decision Aid)

**(4) Demonstration Project Summary:**

- a. To improve forecaster skills resulting in more accurate and timely forecasts and warnings.
- b. To educate developers in tropical cyclone-, heavy rainfall-, and aviation related operations and constraints.
- c. To educate forecasters in latest tropical cyclone, heavy rainfall, and aviation research.
- d. To support the production of tropical cyclone-, heavy rainfall-, and aviation- weather products, using IC4D, AWIPS, AWIPS II, and ATCF, as appropriate.

**(5) Participants (Centers) involved:**

**Providers:**

- a. UW Convective Initiation (W. Feltz, UW/CIMSS)
- b. Lightning Detection (S. Businger, UH, S. Rudolsky UM/CICS)
- c. Lighting-based tropical cyclone rapid intensification index (RII) (M. DeMaria, J. Knaff NESDIS)
- d. Volcanic ash detection and height (M. Pavolonis, NESDIS)
- e. SO<sub>2</sub> detection (M. Pavolonis, NESDIS)

- f. Orographic rain index (ORI) (S. Kidder, S. Miller, CIRA)
- g. Total Precipitable Water (GOES Sounder/Microwave Morph) (T. Wimmers, UW/CIMSS)
- h. Rainfall Rate/QPE (B. Kuligowski, NESDIS)
- i. GOES-R Natural Color (S. Miller, CIRA, D. Hillger, NESDIS)

**Consumers:**

- a. Pacific Region Headquarters: Bill Ward
- b. Honolulu WFO and CPHC: Derek Wroe, Robert Ballard
- c. Guam WFO: Roger Edson, Guam WFO
- d. Joint Typhoon Warning Center: Ed Fukada, James Darlow, Matthew Kucas
- e. Aviation Meteorological Watch Office (MWO)

**(6) Project schedule/duration (timeline):**

- a. Dec 2011 – Identify all project participants, first draft of operations plan
- b. Jan 2012 - Finalize operations plan
- c. Feb-Mar 2011 – Installation and training of projects for precipitation products (ORI, TPW)
- d. Mar-May 2012 – Winter/Spring evaluation of precip products
- e. May-Jun 2012 – Installation and training on additional PG products (UW CI, Lightning Detection, Lightning-based tropical cyclone RII, volcanic ash, SO<sub>2</sub>)
- f. Jul– Nov 2012 – Summer/Fall product evaluation

**(7) Project decision points and deliverables**

- a. Proving Ground - Tropical Pacific Testbed - Operations Plan
- b. Proving Ground - Tropical Pacific Testbed - Final Report
- c. Step 1 Science oversight for the TPT project will be provided by the NWS Operational Advisory Team (NOAT), which will ensure that the TPT remains focused on NWS operational needs.
- d. Step 2 (7/2012): Final site preparation for satellite downlink.
- e. Step 3 (9/2012): Delivery and installation of the L/X-band satellite receiving station
- f. Step 4 (10/2012): First light for receiving products from the L/X-band satellite receiving station at UHM, at the NWS Pacific Region, and NWS HFO.

**(8) Responsibilities and Coordination**

- a. Steven Businger, UHM, Principal Investigator – oversees the project
- b. Roy Huff – adapts satellite algorithms for PR and collaborate with NESDIS AWG scientists and PR forecasters
- c. Bob Ballard, SOO, WFO Honolulu – coordinates forecaster training
- d. Ray Tanabe, acting MIC, WFO Honolulu – Oversees WFO/CPHC participation and product workload for the office

- e. Bill Ward, Pacific Region ESSD Chief – Oversees NWS and Agency participation and product distribution across the Pacific Region
- f. John Porter, UHM, Principal Investigator – focus on satellite aerosol products
- g. Satellite specialists at CIMSS, CIRA, SPoRT, and JIMAR2 – collaborate in bringing AWG and R3 algorithms to Hawaii and coordinates training in their use with Dr. Businger, the post doc, and NWSFO staff

**(9) Budget and resource estimate**

Funds have been received at UH to support UH TPT activities including: a Post Doctoral Fellow (Roy Huff) and a month salary for the P.I. to oversee the project. Two months support for technician Harold Garbiel is requested for operation and maintenance of the satellite acquisition station. The Post Doc will spend 40% of his/her time facilitating transfer of algorithms to operations/testing in the Pacific Region, which includes acting as the contact for visiting AWG scientists to the PR, and 60% of his/her effort in developing algorithms/products and methods for assimilation of high-resolution satellite data. Travel is included for the PI or the Post Doc to attend the GOES-R Science Week meeting and any other relevant travel. Installation costs for the satellite dish and optical fiber connection to the Internet are included. Funds for data storage, supplies, computer network services, and publication costs comprise the remainder of the budget.