The GOES-R Proving Ground (PG) Program was organized to demonstrate the next generation geostationary satellite products and capabilities that will be incorporated into NOAA operations. The 2013 GOES-R product demonstrations have been concentrated on convective applications that address rainfall and marine severe thunderstorm hazards at the Weather Prediction Center (WPC), the Ocean Prediction Center (OPC), the National Hurricane Center (NHC) Tropical Analysis and Forecast Branch (TAFB), and the Satellite Analysis Branch (SAB) of the National Environmental Satellite, Data, and Information Service (NESDIS). These pre-operational demonstrations allow forecasters to use and evaluate proxy and simulated GOES-R data from research and operational satellite instruments (GOES, MODIS, VIIRS, and SEVIRI), WRF model forecasts, and lightning networks in a quasi-operational environment to support their forecast and warning decision making. In evaluating these products, the forecasters are exposed to the strengths, limitations, and constraints of the new GOES-R capabilities prior to its launch and provide valuable feedback to the product developers. The product developers then have an opportunity to use these evaluations to improve the products before they are incorporated into operations.

This presentation will focus on proxy products that highlight two new instruments on the GOES-R series: the Advanced Baseline Imager (ABI) and the Geostationary Lightning Mapper (GLM). The NSSL-WRF and NAM simulated imagery provides forecasters a unique look at future GOES-R ABI channels along with a satellite representation of model mass fields. The Overshooting Top Detection (OTD) algorithm is being demonstrated in the OPC and TAFB offshore waters forecast areas to assist forecasters with determining the location of the most intense convection when radar is not available. The OTD is also being used to help SAB and WPC forecasters identify potential excessive rainfall areas. The GLD360 lightning density product was developed through coordination between OPC, the Cooperative Institute for Climate and Satellites (CICS), and NESDIS/STAR, in coordination with the Pseudo-Geostationary Lightning Mapper (PGLM) product developed by NASA SPoRT. The product is available in 2-min, 5-min, 15-min, and 30-min intervals and provides density contouring of the Vaisala GLD360 lightning strokes to better quantify the intensity of cloud-to-ground lightning activity at the GLM 8 km resolution. This has complimented the OTD demonstrations at OPC and TAFB. Finally, the GOES-R CI product has been introduced to identify likely areas of convective growth that could become significant rainfall producers or severe weather hazards for all centers. In our presentation, we will provide animations and feedback on particular events to illustrate uses, shortcomings, and lessons learned.