

Overview of GOES-R Proving Ground Activities at the Short-term Prediction Research and Transition (SPoRT) Center

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Webpage: <http://weather.msfc.nasa.gov/sport>

Blog: <http://weather.msfc.nasa.gov/sportblog>



transitioning research data to the operational weather community



Short-term Prediction Research and Transition (SPoRT)

SPoRT is focused on transitioning unique NASA and NOAA observations and research capabilities to the operational weather community to improve short-term weather forecasts on a regional and local scale.

- Mainly work with WFOs in Southern Region
- SPoRT activities began in 2002, first products to AWIPS in February 2003

SPoRT Paradigm

- Match observations to forecast challenges
- Develop and assess solution in “testbed” environment
- Transition solution to decision support system
- Develop/conduct training, product assessment and impact

Benefit

- Demonstrate capability of NASA experimental products to weather applications and societal benefit
- Prepares forecasters for use of data from next generation of operational satellites (NPP/JPSS, GOES-R)



Partnerships and End Users

Partnered with NOAA / University community

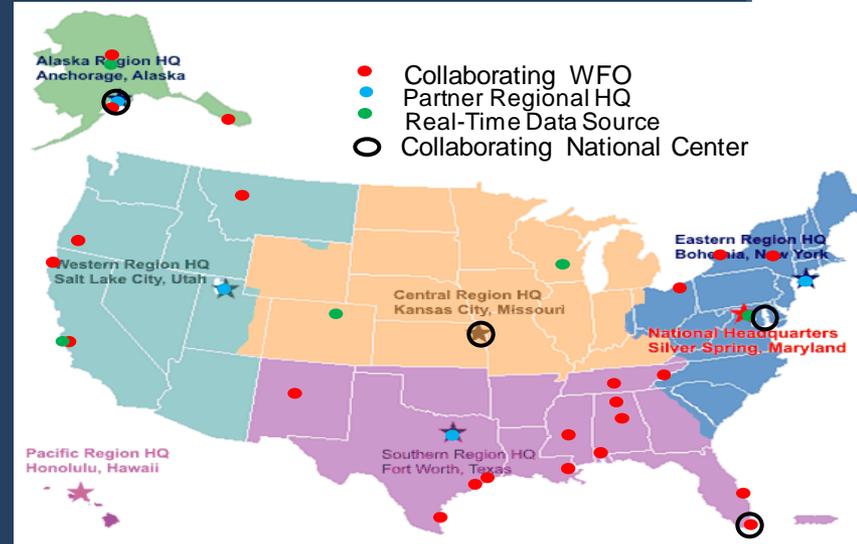
- Access to real-time experimental data / products
- NASA instruments data and model products
- Collaborations with NOAA CIs for GOES-R proxy products

End users

- Regular interactions with 20 WFOs
- National Centers and “testbeds”
- Private sector users

Data / transition / dissemination

- Suite of over 30 satellite derived products, analyses, forecast products
- Public ftp, Local Data Manager (LDM)
- AWIPS, NAWIPS, AWIPS2, and Google Earth



GOES-R Proving Ground



Collaborative effort between the GOES-R Program Office, selected NOAA/ NASA Cooperative Institutes, NWS forecast offices, NCEP National Centers, JCSDA, and NOAA Testbeds.

Where proxy and simulated GOES-R products are tested, evaluated and integrated into operations before the GOES-R launch

A key element of GOES-R User Readiness (Risk Mitigation)



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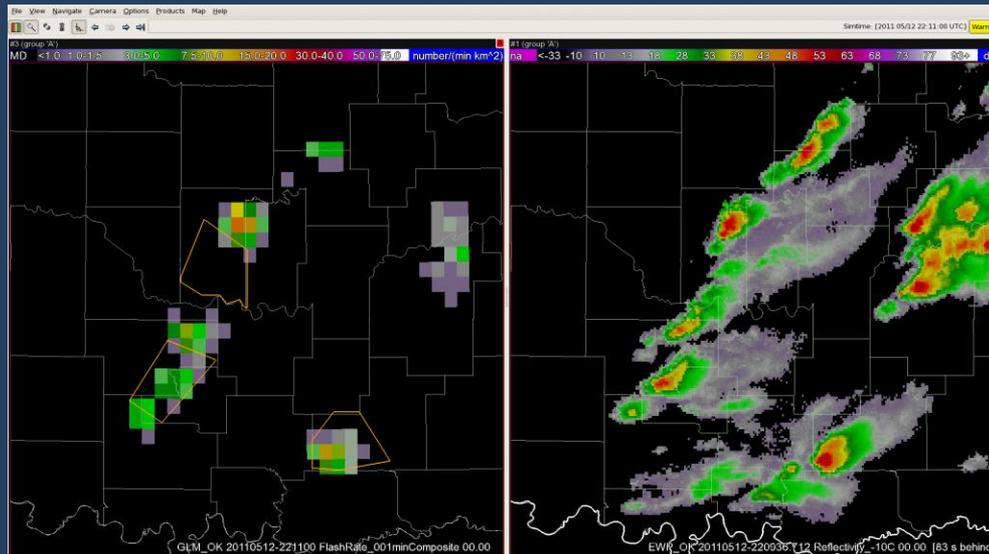
SPoRT is participating in
GOES-R Proving Ground
activities



GOES-R Proving Ground Products Provided by SPoRT for AWIPS/NAWIPS

Pseudo Geostationary Lightning Mapper pGLM Products

- Flash extent density and maximum density products derived from ground-based LMA data (4 networks), AWIPS and AWIPS II
- Similar to AWG optical proxy GLM product (not yet available)
- SPC/HWT/ Spring Experiment



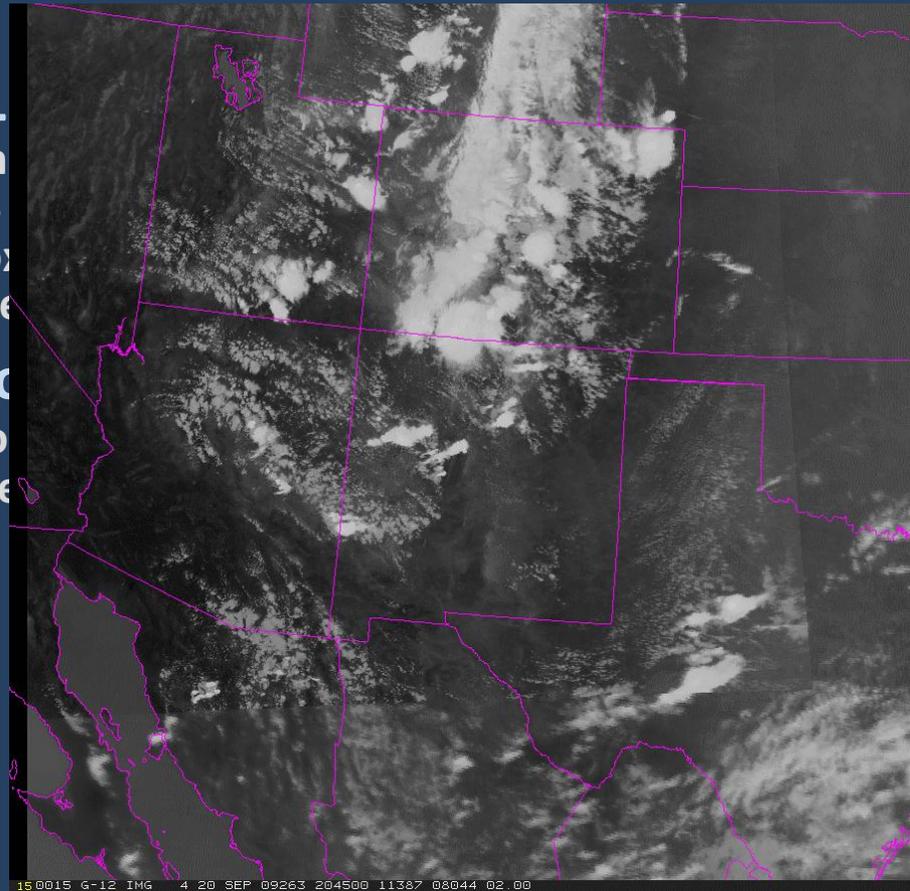
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GOES-MODIS Hybrid Pro

- Replicates spatial resolutio
- Derived from MODIS image
- imagery for animation
- 8 WFOs for evaluation



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GOES-MODIS Hybrid Product

- Replicates spatial resolution of selected ABI channels
- Derived from MODIS imagery combined with GOES-East 15 minute imagery for animation
- 8 WFOs for evaluation

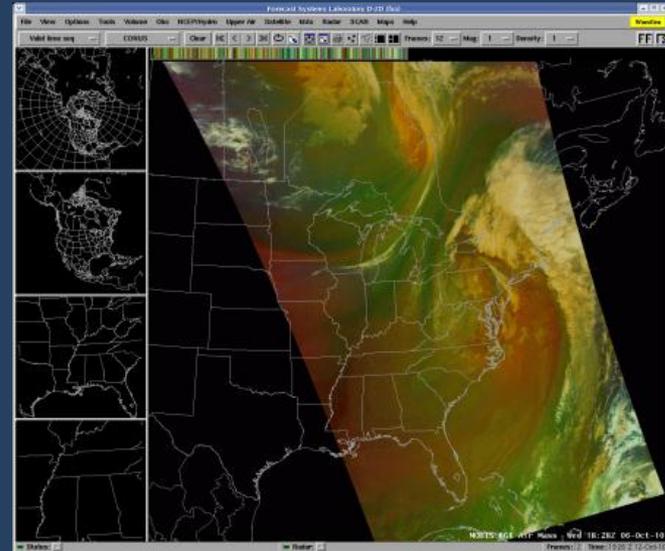
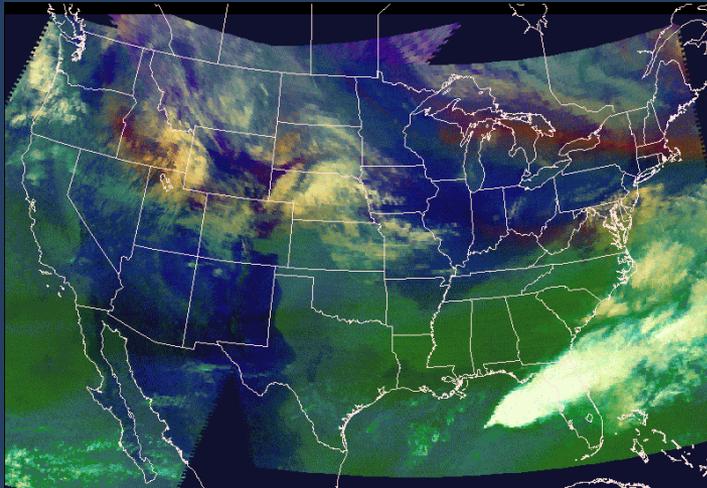
Convective Initiation Product – obtained from AWG

- Reformat and disseminate to SPC/HWT/ Spring Experiment
- Ongoing evaluated at 3 WFOs

SPoRT Proving Ground Products for AWIPS/NAWIPS

Red-Green-Blue (RGB) channel composites simulating ABI capabilities – more information than a single channel

- Collaboration with CIRA for product development
- Generated from MODIS, SEVIRI, GOES Sounder, simulated ABI radiance data
- SPoRT disseminates RGB products to NHC, SPC, HPC, OPC, and WFOs
- Focus on specific products and forecast problems



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High-resolution SST Composite

- No planned proxy AWG product for ABI
- 2-4x daily MODIS derived SSTs combined contiguous field
- AWIPS, GRiB for model ingest, WFOs, SPoRT WRF for SPC/HWT Spring Experiment

Lightning Forecast Algorithm (LFA)

- Total lightning forecast product
- Based on WRF forecast model microphysics
- Aids in GOES-R GLM lightning analysis and data assimilation

Hybrid Imagery Feedback Results

Forecaster Feedback

Surveys, evaluations, blog posts from 7 WFOs and SMG

IR, SW, WV, and visible imagery included in at least 10 assessments each – variety of applications

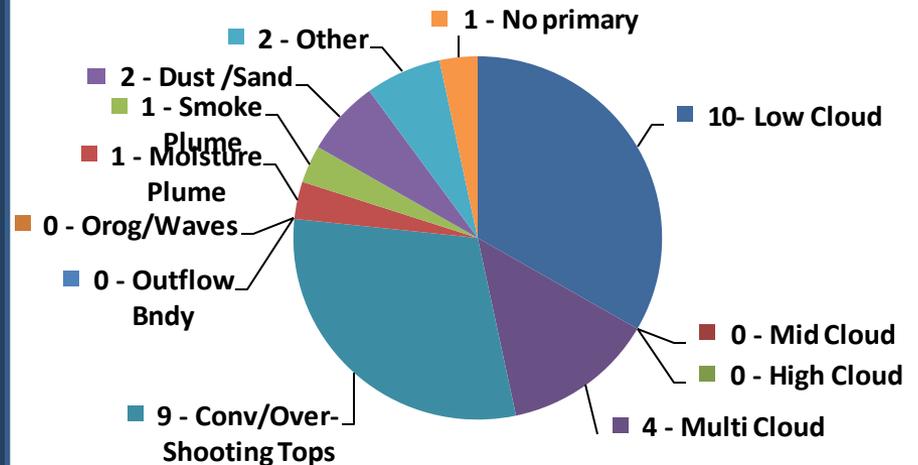
21 said the imagery had some to large impact, while 9 indicated little impact

- generally a normal distribution with most in the “some” category
- “expert” users mostly indicated some to little impact in cases examined with occasional high impact
- less experienced users had ~equal amount of high and low impact cases

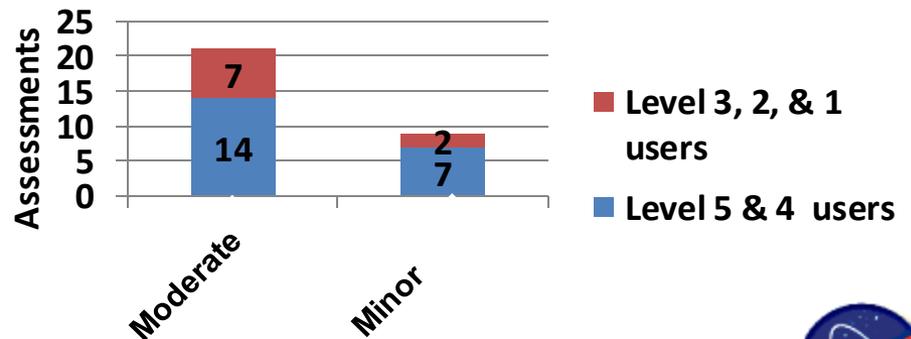
26 indicated that they recommended the product to other forecasters

21 indicated that they zoomed into features vs. using a large-scale view look at mesoscale features vs synoptic

Features Examined During Hybrid Assessment



User Impact



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Summary

SPoRT helps transition unique NASA and NOAA data to the operational weather community

- Demonstrate capability of experimental /research products to weather applications and societal benefit
- Prepares forecasters for use of data from next generation of operational satellites (NPP/JPSS, GOES-R)

SPoRT is actively participating in the GOES-R Proving Ground

- Collaboration with NOAA Cooperative Institutes
- Generate and disseminate proxy products to National Centers and WFOs for evaluation
- Develop product training
- Conduct assessments on utility of future products

Future

- Help transition Proving Ground products to AWIPS2 environment
- Expand collaborations in OCONUS (Alaska and Pacific regions)
- Enhance use of RGB proxy products at WFOs and National Centers



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