Training:
Connecting Developers with Users

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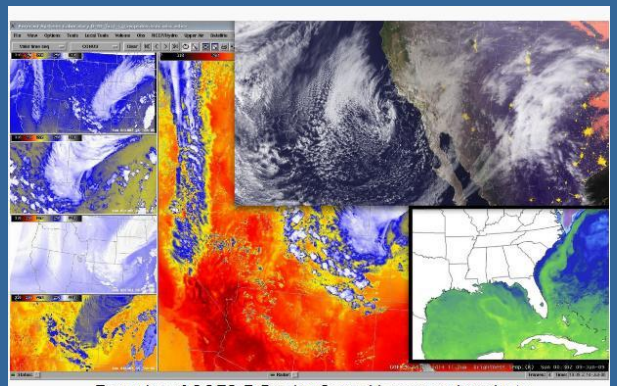


Examples of GOES-R Proving Ground images and products

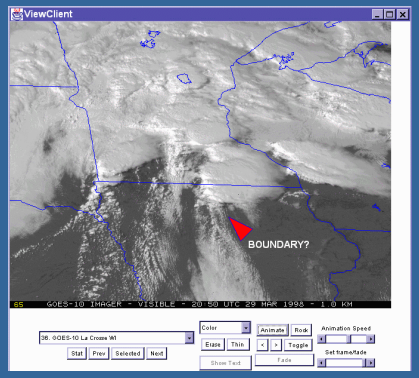
GOES-R Satellite Proving Ground Mission Statement

The Geostationary Operational Environmental Satellite (GOES-R) Satellite Proving Ground project engages the National Weather Service (NWS) forecast and warning community in pre-operational demonstrations of selected capabilities anticipated from the next generation of National Oceanic and Atmospheric Administration (NOAA) geostationary earth observing systems...

SSW
30 April 2012
KC/NWSTC

Key Point for Training User Readiness

- Focus on Users – Getting Ready for Ops
- How do Improved Products Help with NWS Decision Support Services, Forecasts, Warnings?
- Satellite Training Community
- NOAA GOES-R/Satellite and NWS Ops Proving Grounds
- Summary – Back to Questions



Training Community

- Dedicated NWS Training Division
  - Two Branches and Center
  - Weather.gov/training
  - SOOs/DOHs – Training Officers
- Many Partners in NOAA - -
  - Cooperative Institutes & Programs
- Multiple US Agencies
  - (NASA/SPoRT, DOD, DHS, FAA, …)

Training Community

International Collaboration

WMO Space Programme Virtual Laboratory:

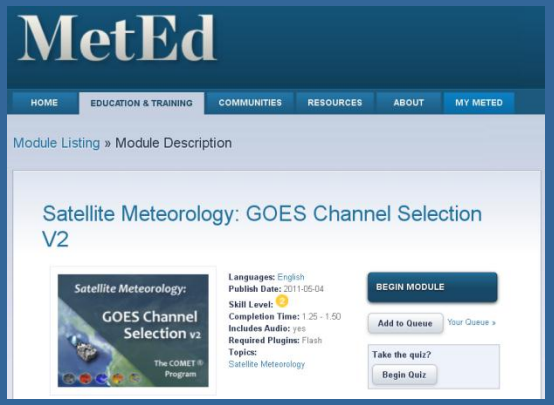
Centres of Excellence (Argentina, Costa Rica, Barbados, Brazil, …), plus EUMETSAT, NOAA, Japan, Canada, …

■ To provide training on meteorological and environmental satellite systems, data, products and applications;

Working Together for Satellite Training

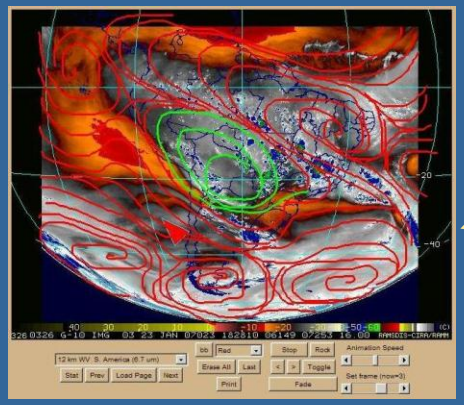
VISIT (CIRA/CIMSS)

EUMETSAT, NASA/SPoRT, Canada,DOD…



UCAR/COMET

Satellite & NWS Proving Grounds



WMO (Virtual Lab)

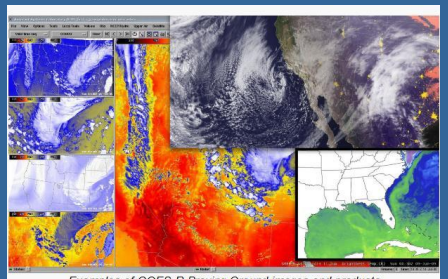
Users & Developers

NWS Training Division & SOOs

Training in GOES-R and NWS Operations Proving Grounds

Prepare NOAA Users, Managers and Developers

- Rapidly Evolving Technology
- Enhanced NWS Operations – Support Services
- Change in Focus Needed to Optimize Human Performance



Examples of GOES-R Proving Ground images and products

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Proving Ground Mission Statement

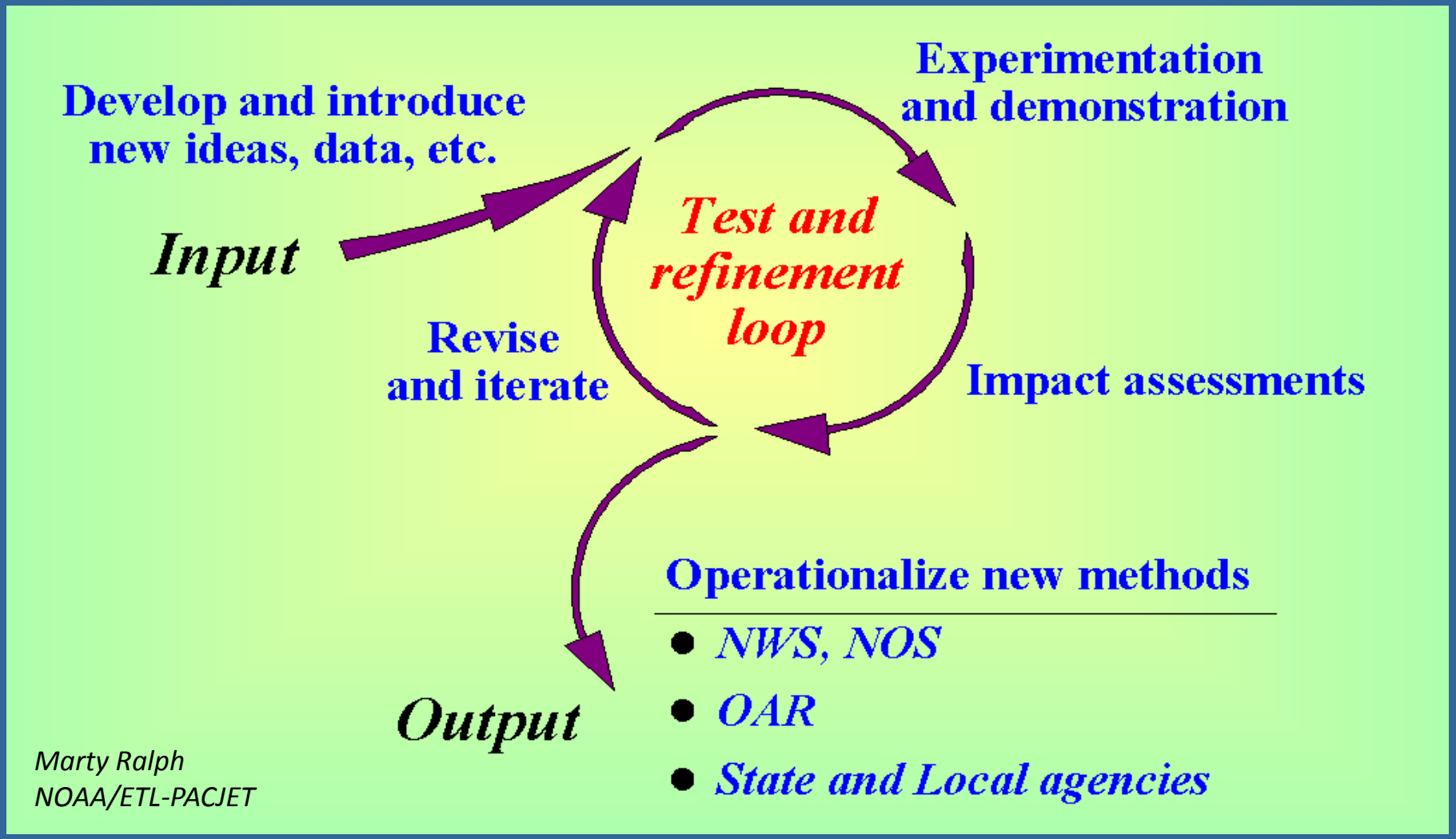
GOES-R Proving Ground engages NWS in pre-operational demonstrations of selected capabilities of next generation GOES.

- The Proving Ground accomplishes its mission by:
  - Sustained interaction between developers and end users for training, product evaluation, and solicitation of user feedback.

Intended outcomes are Day-1 readiness and maximum utilization for both the developers and users of GOES-R products, and an effective transition to operations

The HydroMet Testbed (HMT) (Training) Concept

Testbed Training Development as a Process

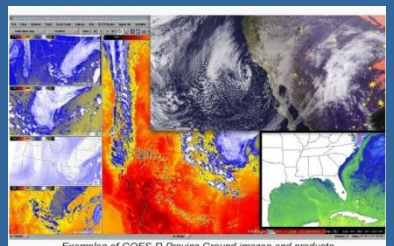


Marty Ralph
NOAA/ETL-PACJET

See: Dabberdt et. al. 2005 Bull. Amer. Meteor. Soc.

GOES-R (Satellite) Proving Grounds

- Ultimate tool(s) to Ensure User Readiness
  - Validate & optimize Decision Aids
  - Optimize integrated product display techniques
  - Weather event simulator for user & developer training and human performance assessment
- Open up venues for direct user-developer (and manager) interaction
- Provide Resources (Links) to Satellite Training and NWS Ops Proving Ground



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GOES-R Proving Ground - Mozilla Firefox

File Edit View History Bookmarks Tools Help

cimss.ssec.wisc.edu/goes_r/proving-ground.html

goesr proving

GOES-R Proving Ground

» Home » GOES-R Proving Ground

Resources

- CIMSS NOAA Testbed
- Support Products
- CIRA Products
- SPoRT
- Air Quality (UMBC)

Meetings and Presentations

Teleconferences

Proving Ground Partners

GOES-R Advanced Baseline Imager (ABI) Bands

GOES-R ABI Sample Product Table

GOES-R ABI Weighting Function Examples

GOES-R Satellite Proving Ground Mission Statement

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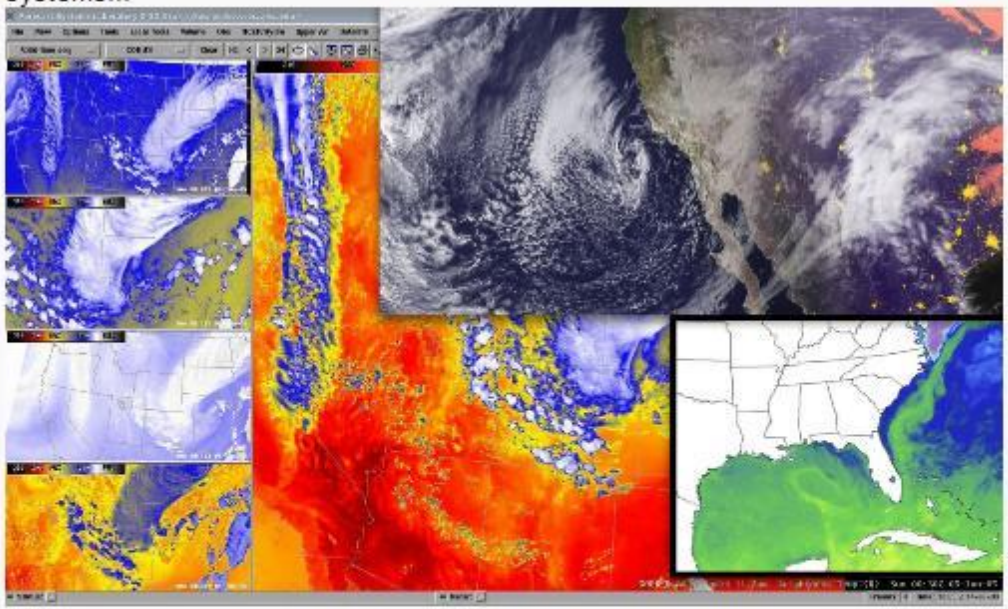


Examples of GOES-R Proving Ground images and products

GOES-R Proving Ground Mission Statement

NOAA GOES-R Website

Follow the GOES-R Proving Ground on Facebook

Related Links

- Proving Ground Overview
- GOES-R "101" VISITview lesson
- COMET GOES-R: Benefits of Next Generation Environmental Monitoring Module
- ABI VISITview lesson (2003)
- CIMSS Satellite Blog
- Nearcasting Convection using GOES Sounder data
- Space News Article: GOES-R Milestones
- Space News Article: U.S. Weather Satellites Saw Tornado Swarm Coming 5 Days Out
- CIMSS Blog: Detecting Turbulence from Satellites

UW/CIMSS NOAA Proving Ground Decision Support Products

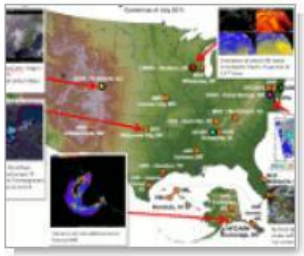
Product	Contact	Training		AWIPS Setup	Web Quicklooks	Satellite Platform	WFO Testbed Feedback	Product Type
		VISIT	PPT					
Convective Initiation/Cloud Top Cooling (UWCI/CTC)	Wayne Feltz	Updated VISIT coming soon!	X	X	X	GOES Imager	HWT, AWC, PR	Product Variant
Overshooting Top (OTTC) and Enhanced-V	Wayne Feltz Kris Bedka	X	X			GOES Imager, MODIS/AVHRR	HWT, HLT	AWG Proxy
WRF Simulated Radiances (ABI Simulated Radiances)	Justin Sieglaff		pdf		X		HWT	Risk Reduction
WildFire ABBA (WFABBA)	Chris Schmidt				X	GOES Imager	HWT	AWG Proxy
NearCast	Ralph Petersen	X	X	X	X	GOES Imager, GOES Sounder	HWT	Risk Reduction
Cloud Mask	Andrew Heidinger		X		X	GOES Imager, MODIS (Adaptable to any imager)	AAWU, AWC, HLT, PR, OPC	AWG Proxy
Cloud Height	Andrew Heidinger		X	Contact Researcher	X	GOES Imager, AVHRR (Adaptable to any imager)	AAWU, AWC, HLT, PR, OPC	AWG Proxy
Volcanic Ash	Mike Pavolonis	X	X	Contact Researcher		MODIS, SEVIRI	AAWU, AWC, HLT, PR	AWG Proxy
Low Clouds, Cloud Type, Fog	Mike Pavolonis		X Quick Facts			MODIS-Alaska, GOES-CONUS	AAWU, AWC, HLT, HWT	AWG Proxy
SO_2	Mike Pavolonis					MODIS	AAWU, AWC	AWG Proxy

Proving Ground CIRA

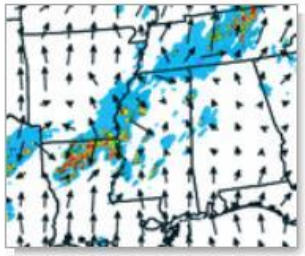
Product	Contact	Related Training	Data Display	WFO / Testbed Feedback	Product Type	Usage
GeoColor Imagery	Steve Miller	Product Description	AWIPS web	WFO	New Imagery / Visualization Technique	Visualization
MODIS Simulated True Color Imagery	Steve Miller	Product Description	web	WFO	New Product	Visualization
GOES Low Cloud / Fog Imagery	Don Hillger	Product Description COMET	AWIPS web	WFO	Product Variant	Cloud determination
MODIS Cirrus Detection	Steve Miller	Product Description	AWIPS web	WFO	New Product	Cloud determination
Orographic Rain Index (ORI)	Steve Miller	Product Description	AWIPS web	HWT	New Product	Rainfall
Marine Stratus Cloud Climatology	Cindy Combs	Product Description VISIT student guide		WFO	New Product	Cloud determination
GOES Blowing Dust	Don Hillger	Product Description COMET COMET EUMETSAT training	AWIPS web	HWT	Product Variant	Volcanic Emissions / Dust
MODIS Based Blowing Dust	Steve Miller	Product Description COMET COMET EUMETSAT training	AWIPS web	HWT	Product Variant	Volcanic Emissions / Dust
MODIS Cloud / Snow Discriminator	Steve Miller	Product Description COMET	AWIPS web	WFO	Product Variant	Snow / Cloud determination
MODIS Cloud Layers & Snow Cover Discriminator	Steve Miller	Product Description COMET	AWIPS web	WFO	Product Variant	Snow / Cloud determination
GOES Snow / Cloud Discriminator (3-color technique)	Don Hillger	Product Description COMET	web	WFO	Product Variant	Snow / Cloud determination
GOES Volcanic Ash (PCI)	Don Hillger	Product Description VISIT student guide EUMETSAT training	web	HWT	Product Variant	Volcanic Emissions / Dust
MODIS Volcanic Ash	Steve Miller	Product Description VISIT student guide EUMETSAT training	web	HWT, AWC	Product Variant	Volcanic Emissions / Dust
MODIS Vegetation (NDVI)	Steve Miller	Product Description EUMETSAT training	web	WFO	New Product	Vegetation
SPC Hail Probability	Dan Lindsey	Product Description	N-AWIPS web	SPC Spring Experiment	New Product	Severe Thunderstorm
Synthetic NSSL WRF-ARW Imagery	Dan Lindsey	Product Description VISIT student guide VISIT student guide	AWIPS N-AWIPS web	SPC Spring Experiment WFO	New Product	Severe Thunderstorm
NHC Lightning-based TC Intensity Prediction	John Knaff	Product Description NHC Training ppt FACT SHEET pdf	N-AWIPS	NHC	New Product	Tropical Cyclone

SPoRT PG Products

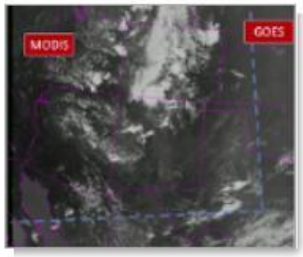
t a topic below for additional information.



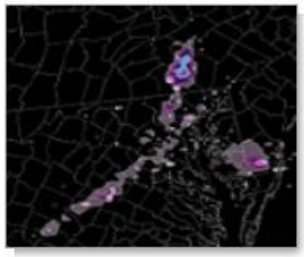
Map of Partners
View a map detailing SPoRT's GOES-R PG partners.



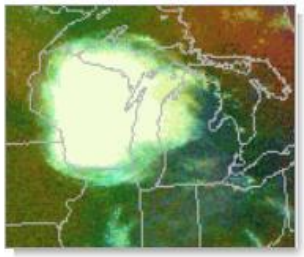
Lightning Forecast Algorithm
The LFA predicts total lightning flash rate densities based on the model-simulated microphysics and convective storm kinematics.



MODIS/GOES Hybrid
Demonstration products to prepare end users for the Advanced Baseline Imager (ABI) using a combination of MODIS and GOES imagery.



Pseudo Geostationary Lightning Mapper
Lightning products that mimic the 8km resolution of the Geostationary Lightning Mapper (GLM).



RGB Products
RGB composite images offer the possibility of compressing multi-spectral information content for optimum visualisation.

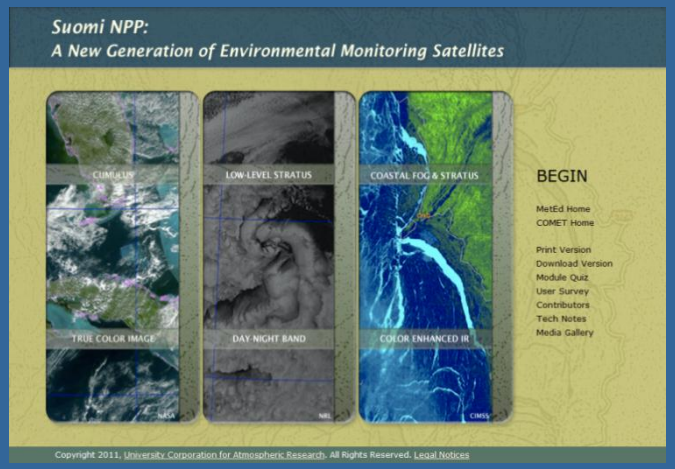
Training Available Now

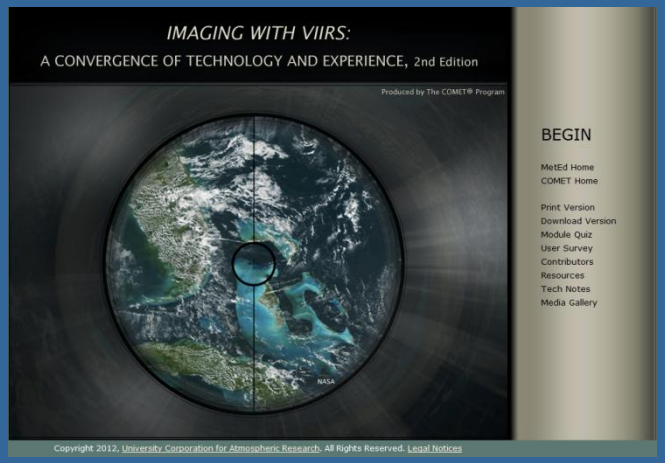
Listed/linked on GOES-R Home page

- Proving Ground Overview
- Presentations from GUCs/ AMS/ etc:
- GOES-R 101 (SHyMet)
- Satellite Meteorology for Grades 7 – 12
- GOES-R: Benefits of Next-Generation Environmental Monitoring (COMET)
- GOES-R Trifold flyer
- http://www.goes-r.gov/users/training.html

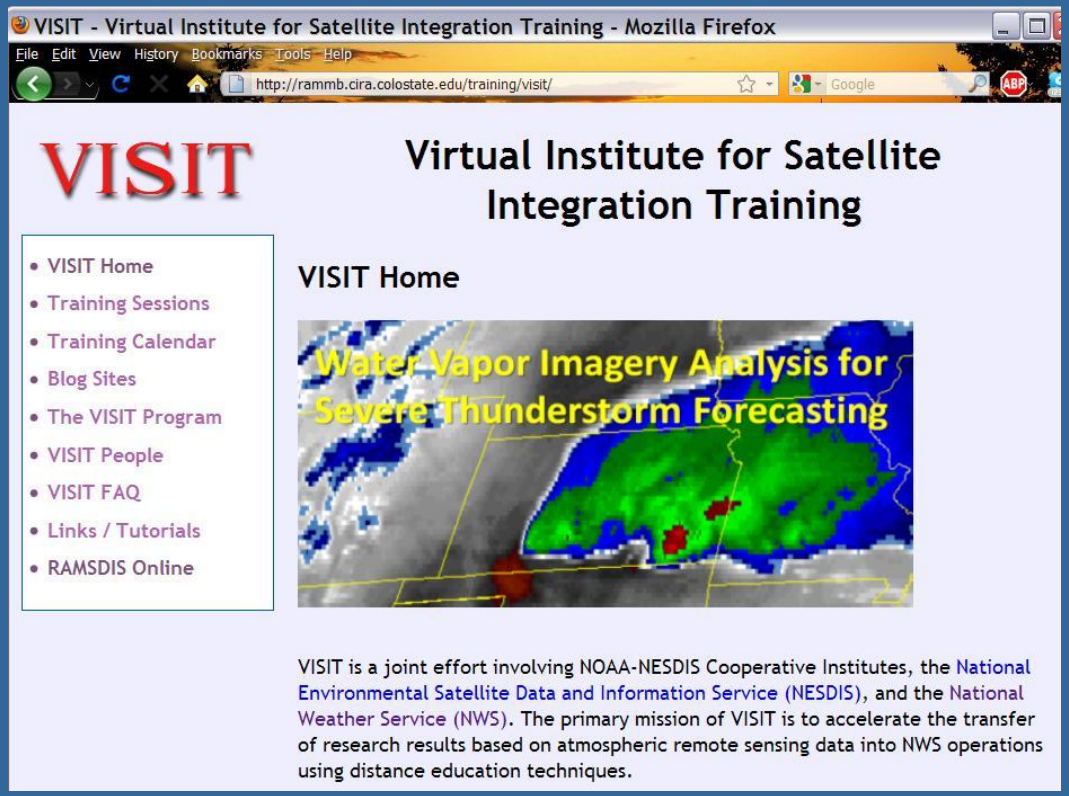
Recent COMET Publications

- Monitoring the Climate System with Satellites
- Atmospheric Dust
- Satellite Feature Id: Atmos Rivers
- Suomi NPP: New Generation of Environmental …
- Imaging with VIIRS: Convergence of Technology …

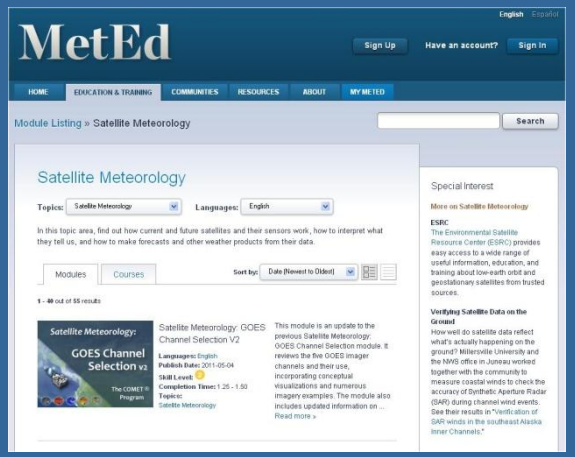




VISIT & Satellite HydroMeteorology (SHyMet) Courses



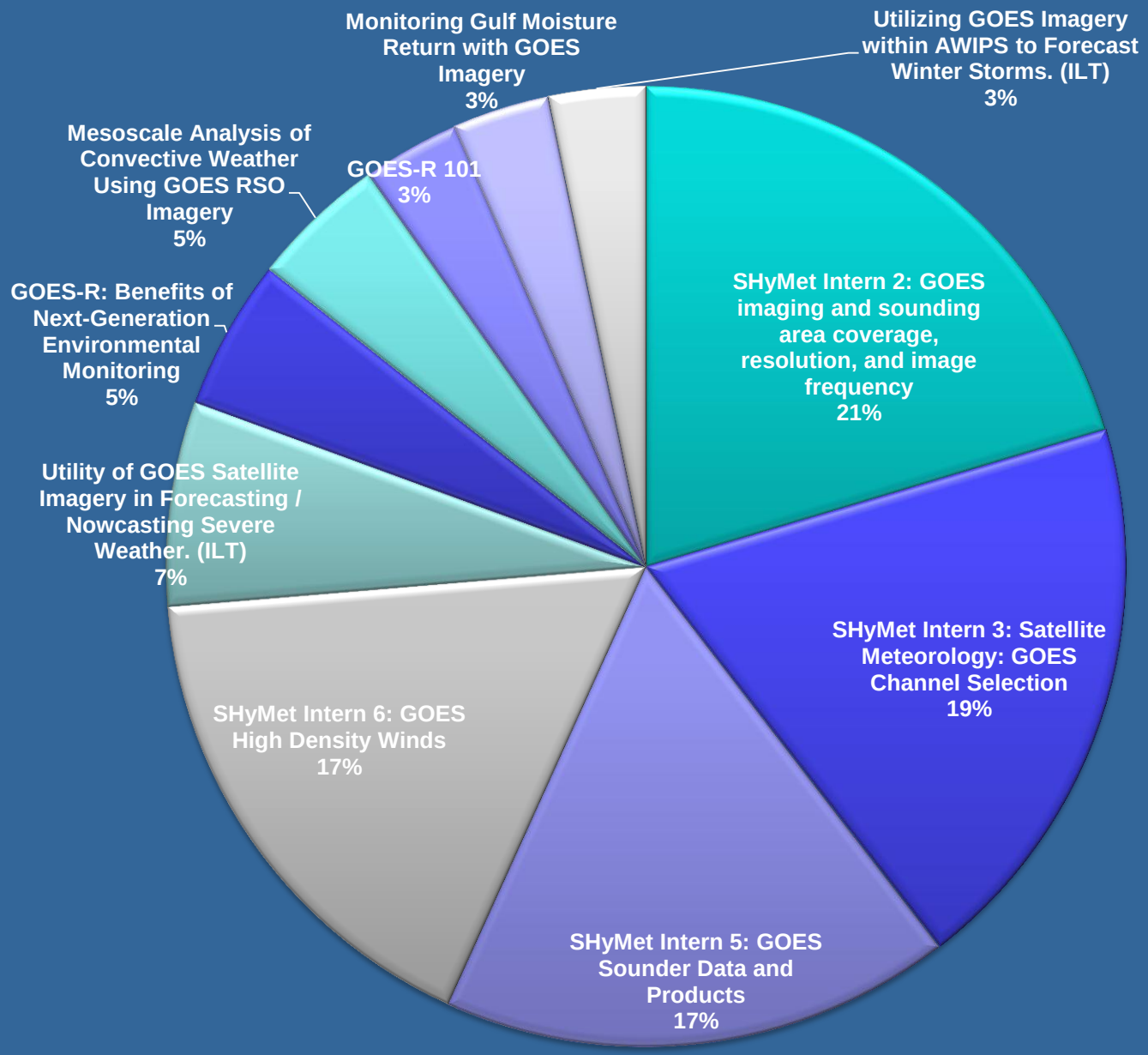
METED & NOAA LMS Metrics*



- Over 219,000 METED users
- 198,000+ Completions
- NOAA LMS + MetEd = 440,000+ Certificates

* Registration Systems Started 2007

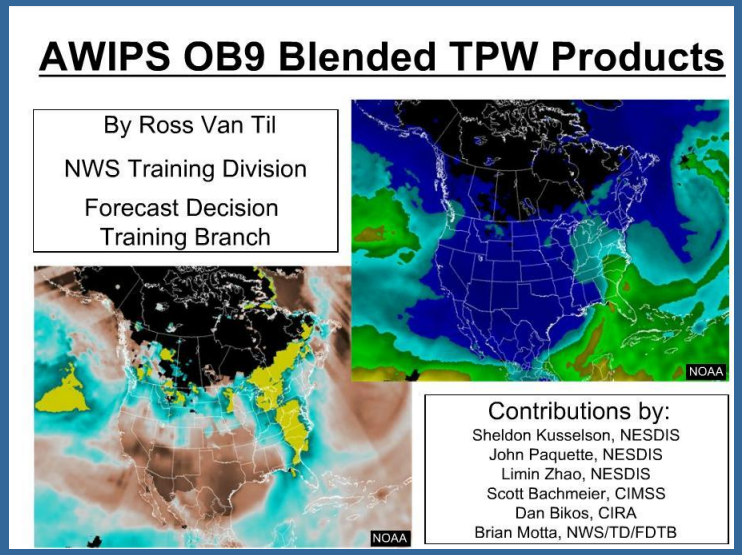
Top 10 GOES LMS Course Completions (since June 1, 2007)

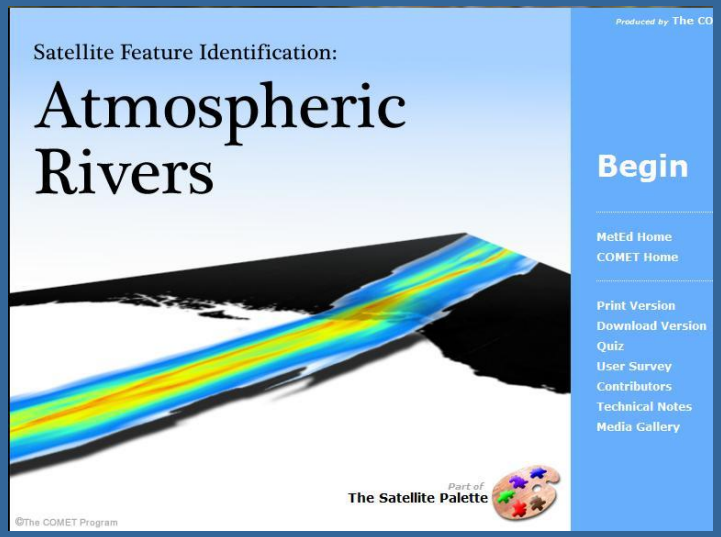


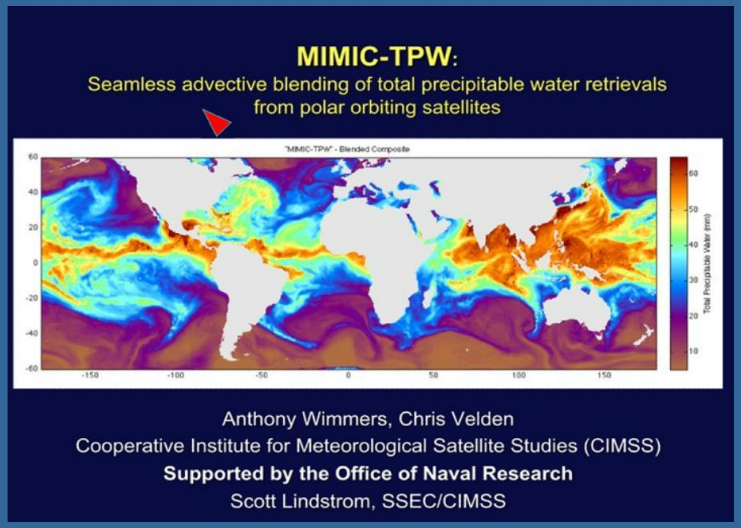
Training for User Readiness

- Use Commerce Learning Center, VISIT, SHyMet and COMET/METED
- Include Quizzes & Evaluations
- Cases (Weather Event Simulator - WES)
- Focus on Human Performance
- For All NOAA Staff
- Include International Users - Want to Contribute!

Integration/Blended Products

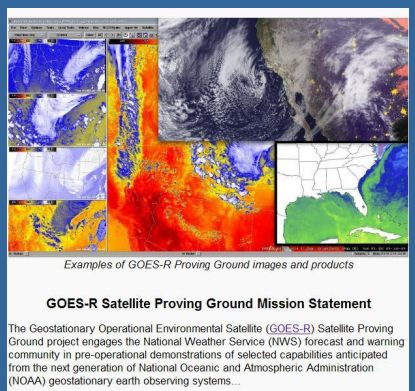






Summary – Questions for User Readiness

- How do Products Help New NWS Operations?
- Who are Users?
- How best prepare the Users?
- How to get resources needed to prepare?
- Success of User Readiness depends on?



Contact Information

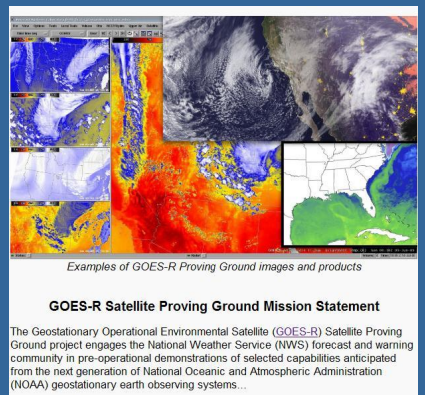
Anthony.Mostek@noaa.gov

Training Portal: weather.gov/training

COMET METED: meted.ucar.edu

Proving Ground: cimss.ssec.wisc.edu/goes_r/proving-ground.html

VISIT: rammb.cira.colostate.edu/visit/visithome.asp



GOES-R:

Benefits of Next-Generation Environmental Monitoring