

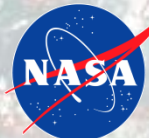
Organization and Partnerships



Science Advisory Committee Meeting

26 – 28 August, 2014

National Space Science and Technology Center, Huntsville, AL

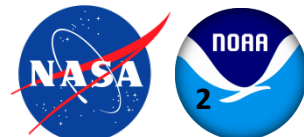


Foundation of SPoRT

Mission - Apply ***NASA and NOAA measurement systems and unique Earth science research*** to improve the accuracy of short-term weather prediction at the regional / local scale

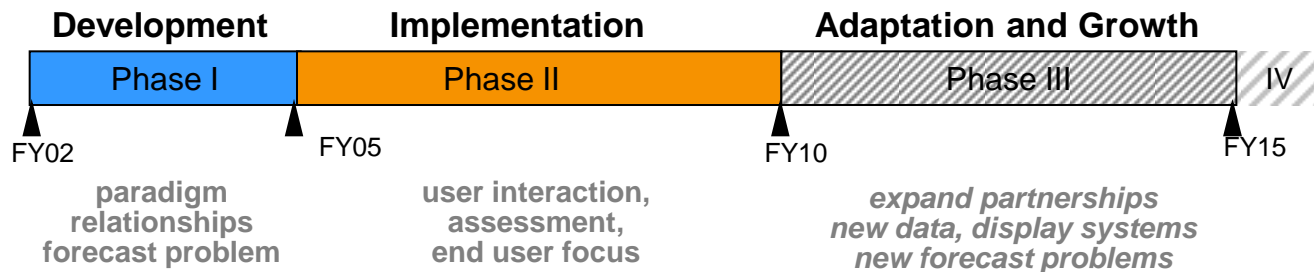
Goals:

- *Evaluate and assess the utility of NASA and NOAA Earth science data and products and unique research capabilities to address operational weather forecast problems*
- *Provide an environment which enables the development and testing of new capabilities to improve short-term weather forecasts on a regional scale*
- *Help insure successful transition of new capabilities to operational weather entities for the benefit of society*

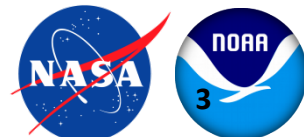


Vision

Vision - to become the focal point and facilitator for the transfer of NASA and NOAA Earth science technologies to the operational weather community with emphasis on short-term forecasting on the regional and local scale



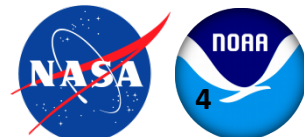
SPoRT will encounter many new opportunities and face robust challenges in Phase IV of the program. I believe we have the leadership, scientific expertise, and ambition to lead NASA and help NOAA and the broader science community address their research to operations (R2O) / applications (R2A) needs to benefit society.



Budget Perspective

SPoRT was established in 2002 (based on the acceptance of a unsolicited proposal from MSFC scientists – Lapenta, Goodman, and Jedlovec) as a complementary activity to that of the JCSDA (which was being formed at the same time).

- In our 13th year of successful transition to operations (and applications) activity
- Rapid growth with NASA funding
- Diversification and growth through NOAA and additional NASA ROSES (competitive solicitation), and funding and partnering with SERVIR
- Poised for sustained performance and new opportunities in Phase IV



SPoRT Team Members

- Civil service scientists (4)
- Research associates - USRA, UAH, Jacobs, Raytheon, ENSCO (12)
- NASA HQs funded Post-doctorial scientist – ORAU (1)
- Graduate Students –UAH (4)
- IT systems administration - Dynetics (2) - funded out of overhead

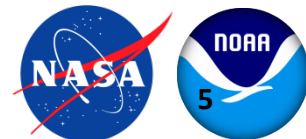
Equivalent Workforce

~ 3.5 FTE

~13.4 WYE

Expertise areas:

Remote sensing, regional weather modeling, atmospheric electricity, synoptic / dynamics, data structures, information technology

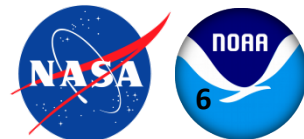


SPoRT R2O / R2A Paradigm

SPoRT's Success

- Identify end user forecast problem / challenge
- Match forecast problem data / research capability
 - Gets “buy-in”
- Develop solution to forecast problem
 - *identify data, or develop new tool or technique*
 - *transition to end user DSS*
- Develop appropriate training – use examples from end user environment
- Assess and document operational impact
- Iterate until solution is ready for “operations”

“operations” – regular use by end user to address forecast problems



SPoRT Partners / End Users

Contributing agencies and groups - stakeholders and beneficiaries, often providing programmatic or financial support (direct or in-kind)

- *NASA/SMD/ESD, NOAA/NESDIS/NWS/OST, others*

Collaborating partners - help SPoRT conduct the research and transitional activities by providing capabilities such as technical expertise, computational resources, data, or other enabling capabilities

- *NASA LANCE, NASA / GSFC, NOAA/NESDIS, NRL, NWS/SR, UW/SSEC/CIMSS, CIRA, UAF/GINA, NWS/OST/SEC, NWS Regions, others)*

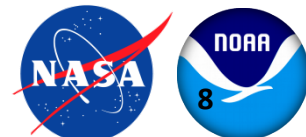
Collaborating end users

- *WFOs , RFCs, National Centers, disaster response orgs.*
- Other end users: universities, private sector, general public – many others unknown



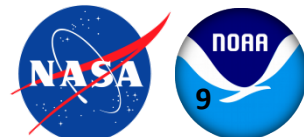
SPoRT Metrics

- Successful transitions
 - Transition and sustained use of products and research capabilities used in decision support systems with discernible impact of data or capabilities
- Community recognition
 - Peer recognition as a community partner and “place to go” for the transition of research capabilities to the operational weather and disaster response communities
 - Adoption of the SPoRT paradigm, training methods, and assessment processes by others within (and external to) our community
 - Supportive feedback from end users and collaborative partners
- Publications
 - Peer-reviewed publications for research techniques and transitional capabilities
 - Publication of assessments reports that include input from collaborative partners and end user community



SPoRT Metrics (continued)

- Reviews by outside committees
 - Supportive biennial reviews by the SPoRT Science Advisory Committee
- Expanded R2O/R2A collaborative opportunities
 - Ability to obtain additional supportive funding through peer-reviewed proposal process (e.g. ROSES)
- Agency and management recognition of success
 - Individual and group achievement awards and recognition
 - *NASA Group Achievement Award for Disaster Assessment and Response Team (August 19, 2014)*
 - *NASA Exceptional Service Medal (Jedlovec, August 2012)*
 - Inclusion of SPoRT accomplishments in the GPRA report to Congress
 - Highlights of SPoRT accomplishments showcased by HQs program managers at external meetings (e.g., Freilich / Kaye at AGU/AMS, etc.)
 - *Recognized by NASA Administrator for contributions to Hurricane Sandy efforts*



SAC Recommendations - 2012

- **Strategic Issues**

Recommendation: Engage in strategic planning exercise sooner than the planned 2015/2016 period to be ready for changes – SPoRT performed SWOT exercise in Spring 2014 as starting point for new strategic plan.

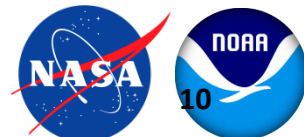
Suggestion: Engage external stakeholders in strategic planning earlier rather than later – SPoRT will brief SAC on status and look for input during the meeting.

- **Tactical planning and reporting**

Suggestion: SPoRT should find improved ways to document progress to demonstrate value to SAC, NASA management and external entities - We are now producing Annual Reports (2012 and 2013), continue our Quarterly Reports and special issues, and publish assessment reports

- **Modeling and Data Assimilation**

Recommendation: Shift focus from assimilating MODIS products to NPP/JPSS/GOES-R products – VIIRS SSTs are now part of SPoRT SST composite product; NESDIS VIIRS GVs are being integrated into LIS. Both datasets are available via WRF EMS for NWS local modeling.



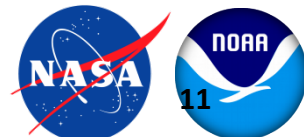
SAC Recommendations - 2012

- **RGB applications**

Suggestion: Investigate whether RGB products can be used to monitor transport of aerosols across the pacific ocean –SPoRT now has an in-house aerosol expert and we have begun collaboration with GOES-R PG air quality team; we are looking at developing / transitioning aerosol products to support collaborative work with HMT colleagues and will integrate RGB products into the evaluation.

Recommendation: Discuss NPP DNB with Alaska partners and assess operational value – Specialized DNB products, including RGBs, are now produced on virtual machines in Alaska for Alaska WFOs, completed assessment of products.

Recommendation: Work with Southern Region partners to evaluate use of CrIS / ATMS soundings in local models - This has been difficult before NuCAPS went operational in AWIPS II, developing better ways to display products.



SAC Recommendations - 2012

- **Proving Ground activities**

Recommendation: Fuse GOES-R and JPSS products where it makes sense – SPoRT image and RGB hybrid products are examples of fused data, and we combine GOES (and GOES-R proxy data) with AIRS / CrIS and OMPS for dynamical evaluation of storms, tropospheric intrusions, and non-convective wind monitoring. Looking at additional ways in AWIPS II.

- **Product Training**

Suggestion: Seek ways to include training on the use of NASA data in weather operations - We have development many modules for use of NASA data in weather operations. Modules available to NWS in several ways including learning management system.

- **Interaction with end users during SAC meeting**

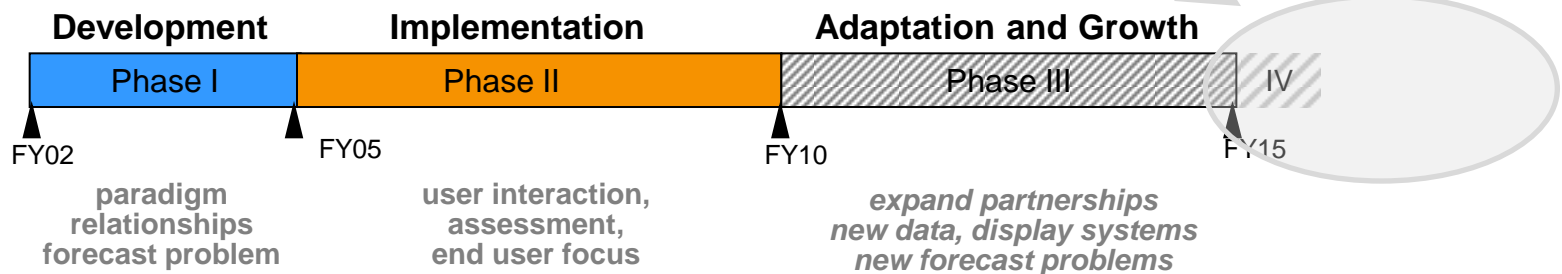
Recommendation: Invite a limited but diverse sample of end users to participate (with charts) in conference call during the SAC meeting, allow others to be involved in Q&A - We are soliciting “one chart wonders” from end users for SAC presentation, also polling WFO for feedback in advance via a anonymous web-based survey.



What's Next?

Over the next 2 days you will be immersed in a SPoRT experience. You will learn about unique experimental and research products, how we transition and assess them, and hear from our end users on how SPoRT data is impacting their job.

SPoRT is planning for the future



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