



An Overview of the Prospectus for Synthesis and Assessment Product 5.1: Uses and Limitations of Observations, Data, Forecasts, and Other Projections in Decision Support for Selected Sectors and Regions

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Over 6 billion people to serve....





Focus of CCSP SAP 5.1

SAP 5.1 focuses on characterizing a subset of the observations from remote sensing and *in situ* instrumentation that are of high value for decision making. The product will:

- Characterize observational capabilities that are currently or potentially used in decision-support tools
- Catalog a subset of ongoing decision-support activities and demonstration projects that use these capabilities
- Evaluate a limited number of cases studies of these decision-support activities and demonstration projects in detail, focusing on:
 - The potential for a variety of observations (and projections) to be incorporated into different decision-support tools
 - The process and approaches used to actually integrate selected information into decision support
 - The approaches needed to systematically test and document performance of the observational capabilities in different decision-support tools.



Evaluation of Decision-Support Activities Provide...

- Information to agencies and organizations responsible for developing, operating, and maintaining selected decision-support processes and tools
- Description of observations from remote sensing and *in situ* instrumentation used
- Nature of interaction between users and producers of information, the approaches for delivering and/or accessing information, and the processes for assimilating information in the decision making process(es)
- Information on uncertainty and levels of confidence
- Assessment of how global climate change data are organized, analyzed, and assimilated by decision makers.
- Assessment of the impact on the decision making process of the known uncertainty of the information resources being used as inputs to decision process(es).



Two Phases

- Phase One:

- Focus on *observational* capabilities capable of being integrated into climate change science products for societal benefit in areas of national and regional priority.

Demonstration projects will be selected from the 12 areas of national priority outlined in the prospectus. Information will be gathered from published literature and interviews with the sponsors and stakeholders of the decision processes, as well as publications by and interviews with the producers of the scientific information used in the decision-support tools.

- Phase Two:

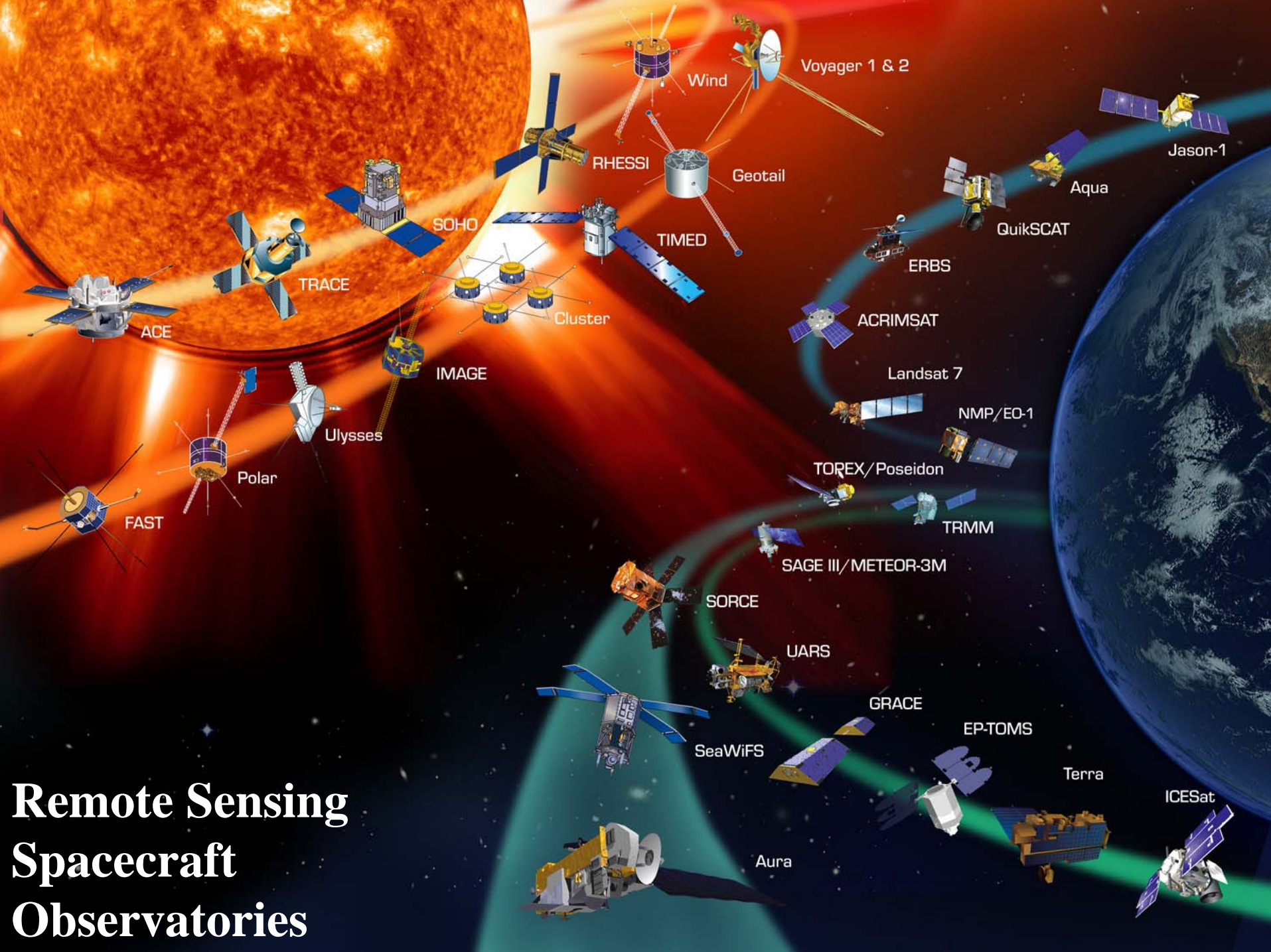
- Focus on assessment of decision-support activities that utilize *forecasts and projections* of climate and global change.

Separate reports will be issued for each phase.



What products will result from SAP 5.1?

- A printed report including a profile of experiments at the time of publication (i.e., a “snapshot” of decision-support demonstration projects that incorporate observational capabilities) and responses to specific questions delineated in the prospectus.
- An on-line catalog of decision-support demonstration projects with interactive links, which will be updated as additional experiments are conducted and new approaches to incorporating and benchmarking application of observations and other global change research products evolve.

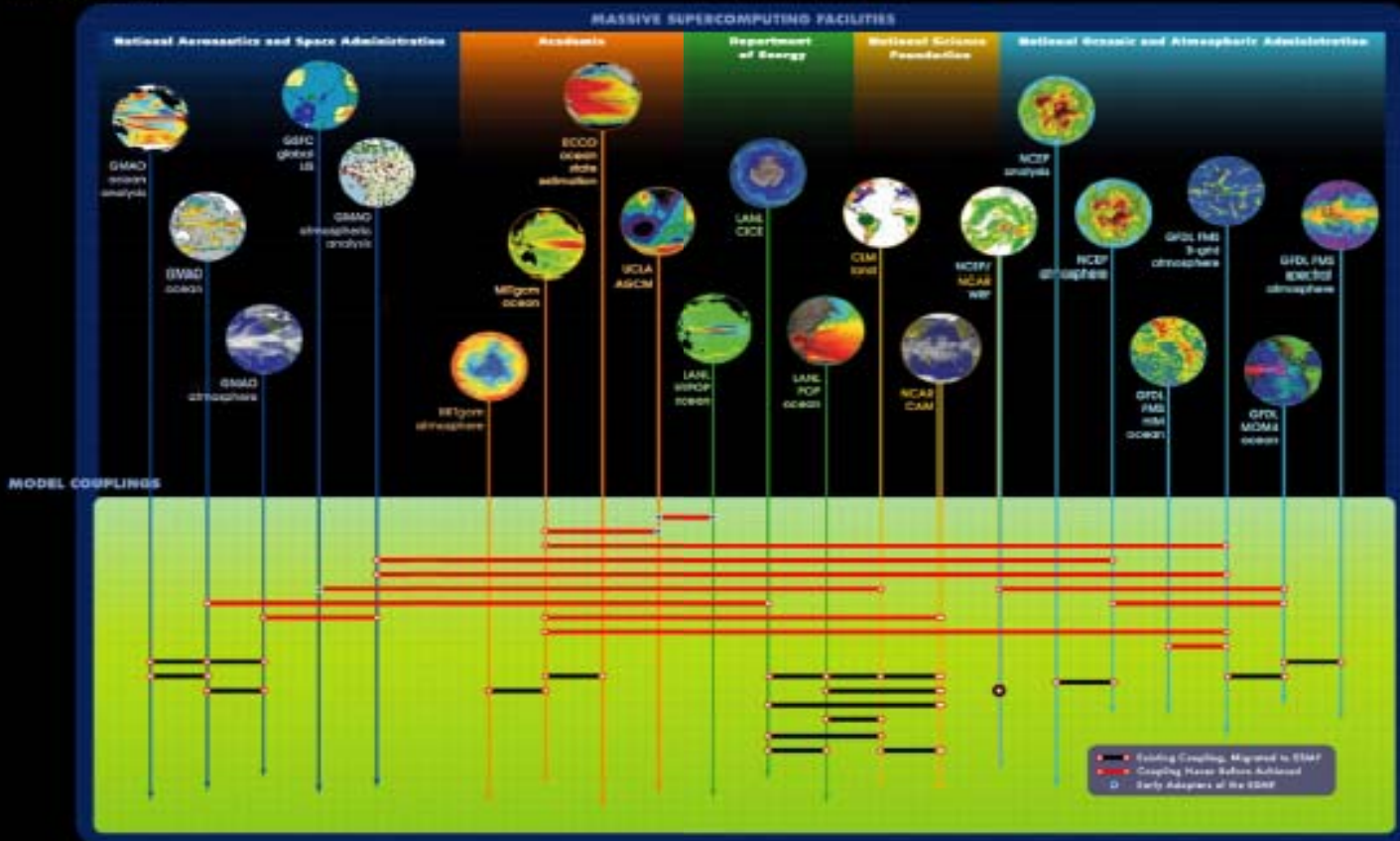


Remote Sensing Spacecraft Observatories

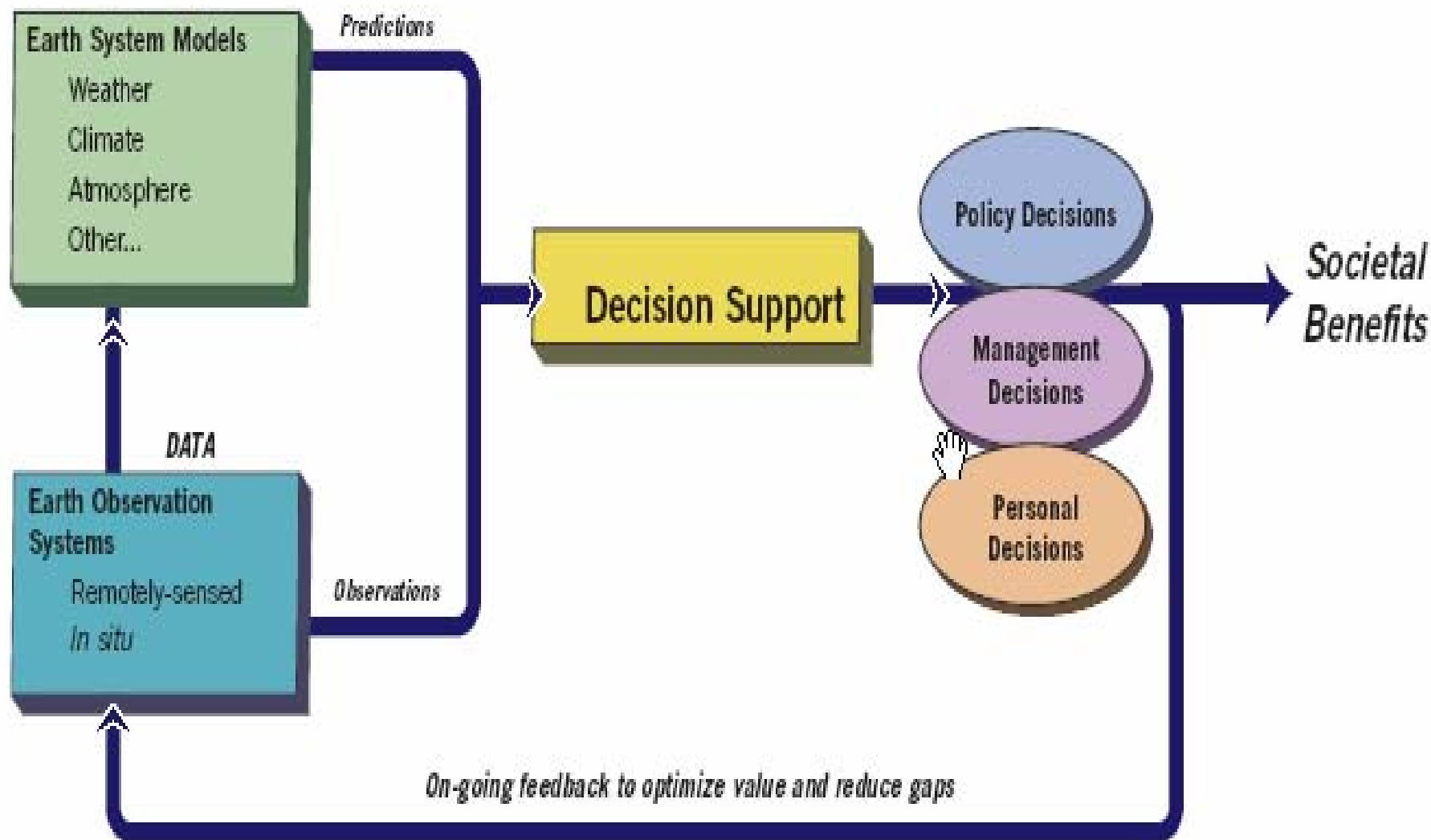
Earth System Models

ESMFE EARTH SYSTEM MODELING FRAMEWORK

MODEL COMPONENTS



Framework for Assessing the Uses and Limitations



Applications of National Priority



**Agricultural
Efficiency**



Air Quality



Aviation



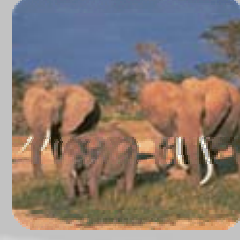
**Carbon
Management**



**Coastal
Management**



**Disaster
Management**



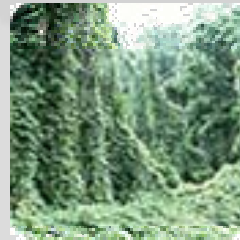
**Ecological
Forecasting**



**Energy
Management**



**Homeland
Security**



Invasive Species



Public Health

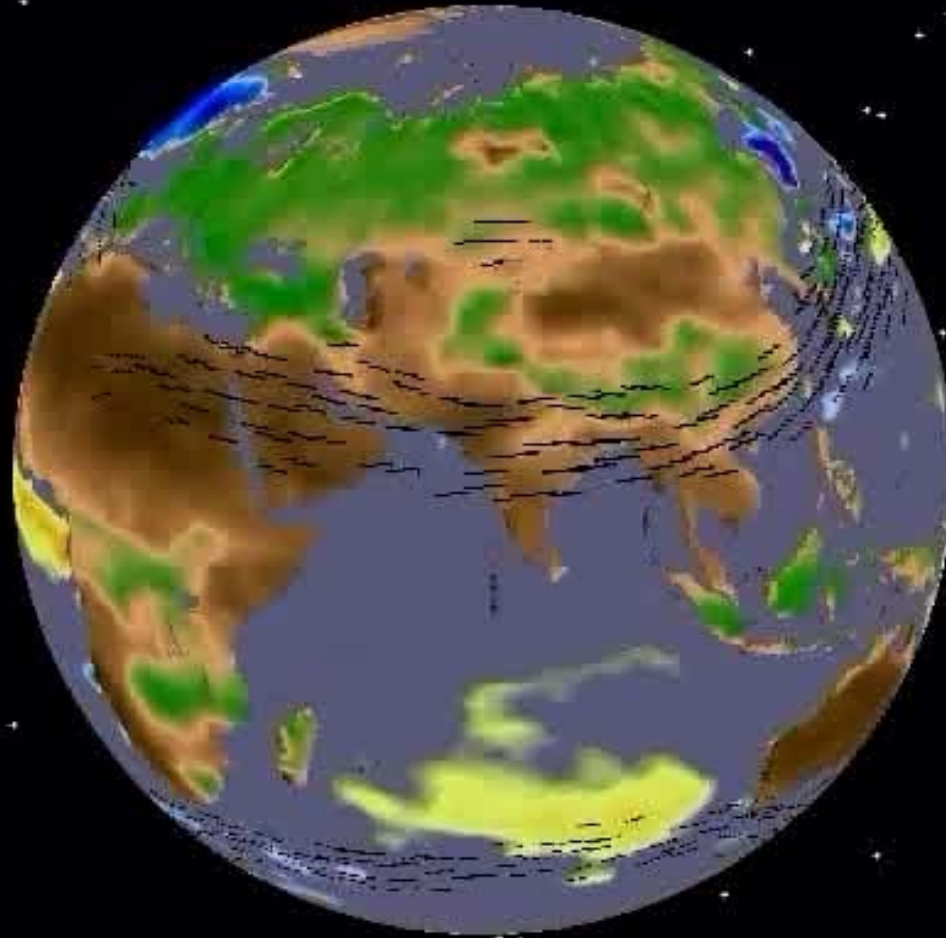


**Water
Management**

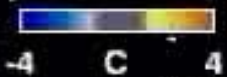
National Application	Partner Organizations	Decision-Support Systems
Agricultural Efficiency	USDA,NOAA ,NASA	CADRE—Crop Assessment Data Retrieval and Evaluation (USDA)
Air Quality	EPA,NOAA,USDA ,NASA	CMAQ—Community Multiscale Air Quality Modeling System AIRNow AQI—Air Quality Index
Aviation	DOT/FAA,NOAA ,NASA	NAS-AWRP—National Air Space-Aviation Weather Research Program
Carbon Management	USDA,DOE,NOAA ,NASA	CQUEST—Support to the Energy Act of 1992,Section 1605b
Coastal Management	NOAA,EPA,NRL NASA	HAB—Harmful Algal Bloom Bulletin/Mapping System CREWS—Coral Reef Early Warning System
Disaster Management	DHS/FEMA,NOAA,USGS,USFS NASA	AWIPS—Advanced Weather Interactive Processing System HAZUS-MH—Hazards U.S.—Multi-Hazards
Ecological Forecasting	USAID,NOAA,NPS,CCAD,USGS ,NASA	SERVIR—Regional Visualization and Monitoring System
Energy Management	DOE,UNEP,NOAA,NRC NASA	RETScreen—Energy Diversification Research Laboratory (CEDRL) NEMS—National Energy Modeling System
Homeland Security	DHS,USGS,NOAA,NGA,DOD NASA	IOF—Integrated Operations Facility IMAAC—Interagency Modeling and Atmospheric Assessment Center
Invasive Species	USGS,USDA,NOAA ,NASA	ISFS—Invasive Species Forecasting System
Public Health	NIH,CDC,DOD,EPA NASA	PSS—Plague Surveillance System EPHTN—Environmental Public Health Tracking Network MMS—Malaria Monitoring and Surveillance RSVP—Rapid Syndrome Validation Project
Water Management	EPA,USDA,USGS,BoR NASA	RiverWARE—Bureau of Reclamation decision-support Tool AWARDS—Agricultural Water Resources and decision-support Tool BASINS—Better Assessment Science Integrating Point and Nonpoint Source

Climate Modeling Capabilities Leading to Societal Benefits

Feb 2 2004



SST Anomaly



Soil Moisture



NSIPP Version 1 Coupled Forecast: Initialized February 2004



Nominated Authors and Status

Nominated Authors:

- Dr. Roger King; Mississippi State University
- Dr. Roger Pielke, Jr.; Colorado State University
- Dr. Roberta Balstad; Columbia University (CIESIN)
- Dr. Holly Hartman; University of Arizona
- Dr. Molly Macauley; Resources for the Future

The authors will be constituted as a NASA advisory committee under the Federal Advisory Committee Act (FACA), and will operate in a fashion consistent with the requirements of the Act. The advisory committee will be convened as soon as feasible after the CCSP Interagency Committee approves the final prospectus. The plan is for drafting of the product to begin immediately after CCSP approval.

Status: Prospectus is currently under review by CCSP Principals. Next step is official release to public review.

Proposed Timeline

- November 2005 Draft prospectus Public Review (30 days)
- December 2005 Final prospectus posted on CCSP web site
- February 2006 Lead author meeting on Phase 1 and 2 objectives
- July 2006 Draft #1 provided to Expert Reviewers (45 days)
- September 2006 Lead author meeting
- November 2006 Draft #2 made available for public comment (45 days)
- February 2007 Lead author meeting
- March 2007 Draft #3 submitted to CCSP committee for review and processing through NSTC
- April 2007 Final Phase 1 product posted on CCSP web site, with links to the Phase 2 web site maintained by NASA
- June 2007 Hardcopy of Phase 1 product available through GCRIIO



Research Opportunities in Space and Earth Sciences 2005 (ROSES)

NASA Research Announcement (NRA) solicits basic and applied research in support of the NASA Science Mission Directorate covering aspects of basic and applied research and technology in space and Earth sciences.

NRA #NNH05ZDA001N

Amendment A.24 to ROSES 2005 is entitled “Decision Support through Earth-Sun Science Research Results”

Closing Date: November 22, 2005

Website: <http://nspires.nasaprs.com/>