

GODDARD SPACE FLIGHT CENTER		<b>TASK ORDER</b> (Instructions and Distribution on Reverse)		PAGE 1 OF 1
1. CONTRACTOR: SSAI	2. CONTRACT NO.: NNG12HP08C	3. TASK/REVISION NO.: Task Order #028		
4. JOB ORDER NO./PROJECT:	5. FLIGHT HARDWARE /SOFTWARE; CRITICAL GSA (IF, YES, OBTAIN BLOCK 16 CONCURRENCE): YES <input checked="" type="checkbox"/> NO	6. DESIGNATED FLIGHT ASSURANCE MGR.:		
7. DESCRIPTION OF WORK TO BE PERFORMED (OBJECTIVES OR RESULTS DESIRED):  TRMM/GPM GV				
8. TASK DOCUMENTATION REQUIREMENTS/DELIVERABLE ITEMS:  (See Attached Task Order)				
9. PERFORMANCE/MILESTONE SCHEDULE:  May 1, 2015 – April 30, 2016				
10. QUALITY ASSURANCE REQUIREMENTS:  N/A				
11. TRAVEL, MATERIALS, ETC., KNOWN TO BE REQUIRED:  (See Attached Task Order)				
12. OTHER (FUNDING, NTE, HOURS, ETC.):  Total Cost: Fee: Total Price:                      \$1,321,490				
13. TASK ORIGINATOR/MONITOR/CODE/PHONE:  Mathew Schwaller/587.0/4-5382		18. THIS TASK ORDER IS ISSUED PURSUANT TO THE TERMS OF THE CONTRACT.		
14. BRANCH APPROVAL:	15. DIVISION CONCURRENCE:	 CONTRACTING OFFICER'S SIGNATURE/ DATE Ayana A. Briscoe		
16. CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE:  Joel Suskind		Ayana A. Briscoe      Contracting Officer TYPED OR PRINTED NAME		
17. CONTRACTOR SIGNATURE:				

Science Systems and Applications, Inc.  
NNG12HP08C  
Task Order Statement of Work

Task Order Number: CY4\_028\_Rev0

Task Order Title: Micro Pulse Lidar Network

1.0 Task Monitor (TM):

Name: Mathew Schwaller  
Organization: 587: Science Data Processing Branch  
Email Address: mathew.r.schwaller@nasa.gov

2.0 Description of Work to be Performed

Subtask 28a Precipitation Validation and Support Activities

- Maintain algorithms for production of standard TRMM precipitation validation products
- Maintain the software and hardware necessary to generate the standard TRMM precipitation validation products
- Process, analyze, and compare ground validation data and precipitation satellite data for generation of standard TRMM validation products
- Package the standard TRMM validation products and distribute them to the GSFC DAAC
- Collect metrics on the generation and distribution of validation products and report quarterly; at a minimum, report 1) the number of standard TRMM validation products generated, products provided to the GSFC DAAC, and products distributed by the DAAC, 2) report on the number of accesses to the TRMM-GV website, and the number of TRMM-GV products distributed to users, 3) report on any significant system upgrades, outages or repairs.
- Maintain the Radar Software Library and Ground Validation Data Processing System (GVS) through sustaining engineering of the software, hardware and documentation
- Support PMM Science Team members inquiries regarding standard TRMM precipitation validation products, the RSL, and GVS
- Generate TRMM web and visualization products on a routine basis.
- Generate special TRMM science products as directed
- Coordinate and/or participate in field activities related to precipitation science as directed
- Support agency, national, and international activities as directed
- Prepare technical documents, scientific papers, posters, abstracts, proposals, brochures, and presentations in support of precipitation activities as directed
- Consult with the GPM Project to develop future GPM requirements
- Ingest, store, and maintain the GPM Validation Network data archive.

Subtask 28b GPM Project Scientist support

- Provide comprehensive administrative support including purchase requests, travel documentation, grant packages, budgets, manpower, property, facilities, telephone lists, e-mail distribution lists, and maintain & distribute grant yearly reports.
- Assist in proposal, manuscript, report and presentation development, including technical editing, graphics and budgets
- Coordinate meetings both internally and externally, making badging arrangements for external visitors, preparing travel arrangements and meeting logistics. Travel may be required.
- Work closely with the P.I. and staff to meet project objectives

#### Subtask 28c GPM Precipitation Algorithm Support

- Development of radar and combined radar-radiometer precipitation retrieval algorithms.
- Test and integrate new and existing modules with the algorithm core software architecture
- Assist in the porting and testing of the precipitation algorithms in the Precipitation Processing System environment for the GPM mission project.
- Analyze and display test data and present results to the radar and combined radar-radiometer teams.
- Document the algorithms and analysis results

#### Subtask 28d GPM Hydrological Validation Field Site Modeling Support

This subtask supports modeling studies to downscale satellite data over GPM hydrological validation field campaign sites.

- WRF- based Ensemble Data Assimilation System Development
  - Develop and refine the ensemble data assimilation techniques for dynamic downscaling satellite precipitation observations at cloud-resolving scales
  - Develop the capability of microwave sounder data assimilation for WRF-EDAS
- Comprehensive Global Precipitation Dataset Development Methodology
  - Carry out preliminary studies on different approaches of optimal interpolation, Bayesian inversion, maximum likelihood estimation, and dynamic merging of observations
  - Develop a prototype system with OSSE to test the effectiveness of the algorithm of Gaussian Scale Mixtures and evaluate the impact of addition of individual dataset to the accuracy of merged precipitation analysis
- Satellite-Observed Precipitation Assimilating using the Model as a Weak Constraint
  - Stay abreast with the development of the Goddard GDAS and contribute to the development and evaluation of precipitation assimilation component in the GDAS as appropriate
- Document Work Performed
  - Provide software/algorithm documents and scientific research reports

### 3.0 Special Requirements

This task may require travel to conduct field campaigns, to conduct project support at science team meetings, and attendance at conferences as required and approved by the Technical Monitor and the Government. Other direct costs may also be required to perform these functions.

### 4.0 Performance/Milestone Schedule

The SAS Contract Year 4 POP is May 01, 2015 - April 30, 2016

### 5.0 Deliverables/Reporting Requirements

Contributions to scientific publications, workshops/conferences/symposia, both oral presentations and written contributions.

- Quarterly and annual reports.
- Delivery and availability of quality-controlled datasets and web-based material.
- Software and hardware documentation.
- Reports documenting participation in conferences, workshops, symposia, working groups and field activities.

### 6.0 Other Information Needed for Performance of Task

Subtask 28b GPM Project Scientist support

Domestic or foreign travel may be required, which will be determined on a case by case basis.

### 7.0 Data Rights

N/A

### 8.0 Safety

Staff on this task shall comply with federal, state, local, and center safety regulations. This shall be accomplished through management emphasis, technical training, and personal responsibility. Staff shall participate in safety orientation and training in accordance with the contract Safety and Health Plan, and work within the requirements of that plan.

### 9.0 Risk

Contractor shall provide ongoing risk assessment and mitigation in performance of the Task Order. Priorities shall be re-evaluated as appropriate with the TM. Cost and schedule performance shall be assessed on a regular basis (no less frequently than monthly) and significant variations discussed and acted on in consultation with the TM and COR.

### 10.0 Proposed Cost and Fixed Fee

In accordance with Paragraph B.8 of the contract, propose the Cost and Fixed Fee amount.