

GODDARD SPACE FLIGHT  
CENTER

**TASK ORDER**  
(Instructions and Distribution on  
Reverse)

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1. CONTRACTOR:  
**SSAI**

2. CONTRACT NO.:  
**NNG12HP08C**

3. TASK/REVISION NO.:  
Task Order #068

4. JOB ORDER NO./PROJECT:

5. FLIGHT HARDWARE /SOFTWARE;  
CRITICAL GSA (IF, YES, OBTAIN  
BLOCK 16 CONCURRENCE):  
YES             NO

6. DESIGNATED FLIGHT  
ASSURANCE MGR.:

7. DESCRIPTION OF WORK TO BE PERFORMED (OBJECTIVES OR RESULTS DESIRED):

SO2 MEASUREs Project Support

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:                    \$117,398

13. TASK ORIGINATOR/MONITOR/CODE/PHONE:

Nickolay Krotkov/614.0/4-5553

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 Susskind

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\_068\_Rev0

Task Order Title: SO2 MEaSURES Project Support

### 1.0 Task Monitor (TM):

Name: Nickolay Krotkov  
Organization: 614: Atmospheric Chemistry and Dynamics Laboratory  
Email Address: nickolay.a.krotkov@nasa.gov

### 2.0 Description of Work to be Performed

This task supports NASA's SO<sub>2</sub> MEaSURES Project to create a long-term multi-satellite SO<sub>2</sub> climate data record by re-processing SO<sub>2</sub> data from past (TOMS) and current (OMI and OMPS) UV sensors. The contractor shall provide scientific and programming support for developing and evaluating satellite algorithms to retrieve SO<sub>2</sub> properties, focusing on:

- Analysis of TOMS and OMI ozone algorithm residuals, developing Fortran90 code for SO<sub>2</sub> retrievals from UV instruments, re-processing TOMS and OMI SO<sub>2</sub> records using the developed algorithm, and comparing with the operational SO<sub>2</sub> products.
- Analysis of algorithm performance and the ability to produce a SO<sub>2</sub> Climate Data Record (CDR) from OMPS. Refine the code to improve SO<sub>2</sub> retrievals from small (anthropogenic and degassing) and large (explosive eruptions) SO<sub>2</sub> sources. Compare with concurrent TIR SO<sub>2</sub> data from the MODIS and AIRS instruments.
- Evaluate CDR data quality, assess SO<sub>2</sub> retrieval errors, e.g., due to interference from clouds and volcanic ash.
- Develop an automatic SO<sub>2</sub> event detection (alert) algorithm and run on TOMS and OMI L2 SO<sub>2</sub> files to create a list of significant SO<sub>2</sub> events.
- Archive the SO<sub>2</sub> data record at the GES DISC.
- Document the work performed and assist the project's PI develop abstracts, presentations, and scientific papers.

This task will also support NASA's DSCOVER Project to process SO<sub>2</sub> and Ash Index (AI) data from EPIC sun-rise to sunset measurements using modified MEaSURES SO<sub>2</sub> algorithm.

- Develop Fortran90 code for SO<sub>2</sub> and AI retrievals from DSCOVER EPIC Level 1B data.
- Deliver F90 code to EPIC processing system, provide test cases.
- Analysis of EPIC SO<sub>2</sub> data, soft calibration EPIC measurements.
- Validating EPIC SO<sub>2</sub> and AI data with coincident satellite and sub-orbital data.

### 3.0 Special Requirements

None

#### 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

Travel to OMI meeting , September 2015

#### 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.