[INSERT TITLE OF TASK]

STATEMENT OF WORK

1.0   INTRODUCTION

[INSERT MISSION DESCRIPTION]

2.0   SCOPE OF WORK

The Contractor shall be required to provide scientific and technical support services for the analysis and application of operational and research satellite data in atmospheric, weather, oceanic and land surface prediction services, and in scientific studies, including scientific research projects of [INSERT AGENCY]'s crosscut programs. This support may involve participation in field experiments, including those on ships and aircraft platforms.

The Contractor shall provide support in satellite algorithm development, research, product generation, and integrated calibration and validation system development. Such support shall include the design, development, research, testing, validation and documentation of satellite data products, modeling, maintenance, management, and data assimilation related to current and planned satellite sensor systems. Allied activities include administrative, planning and logistical support of science program development, coordination, tracking and reporting.

The following list describes significant subset of current ongoing and future activities, representing the scientific work and likely requirements of [INSERT DEPT NAME] primary user of the proposed contract vehicle. Potential tasks include, but are not limited to:

2.1.1 Tasking Area 1.1: Atmospheric Science and Technology Applications

Provide scientific and technical review, management, testing, design, development, implementation, validation, and documentation of algorithms and products for deriving atmospheric, and land surface variables from research and operational satellite observations

Support research and develop new satellite products and applications to improve and expand the use of satellite data for monitoring global meteorology, environmental, climatology conditions. Provide maintenance, support or management services for such current, developing, and future satellite applications.

Support development of algorithm(s) using multispectral, hyperspectral and other information that enable reliable discrimination among clear, partly cloudy, and cloudy pixels in satellite data, and provide pixel level statistical confidence and accuracy measures, useful as input to operational algorithms and products such as sea surface temperature, radiation budgets, atmospheric soundings, ocean surface winds, vegetation index, etc.

Provide science and technical support for the development and evaluation of new algorithms from current and future [INSERT AGENCY] geostationary and polar-orbiting satellites using actual or proxy satellite data to estimate, for example, land surface temperature, precipitation, snow cover.

Support development and implementation of systems to process archived satellite data into climate-quality products. Data may be from such sensors as AVHRR, SBUV, TOVS, SSM/I, MSU, AMSU, HIRS, IASI, MODIS, or any other sensor.

Support the development of space weather product algorithms, and calibration/validation of space weather level 0-2- data and products.

Conduct scientific and technical support on the use of satellites and satellite data to improve analysis, forecasts and warnings for regional and mesoscale meteorological events; the use of earth observing satellites to study regional and global climate variability; develop advanced products from new or existing environmental satellite systems and data for weather forecasting and monitoring of the earth-atmosphere system.

Adapt existing or develop new systems of support for Geostationary Operational Environmental Satellite (GOES) products in applications such as fog detection, nowcasting severe weather, insolation, and precipitation estimation.

Develop procedures, algorithms, and systems to process raw satellite data into radiance and geophysical products, and develop and deliver algorithms that enable products that can be provided in near-real-time for NWP.

Support the development of data fusion algorithms for next generation blended products from [INSERT AGENCY], NASA, and international satellites.

Support the development of methods to collect specific data from [INSERT AGENCY] operational data streams including from NCEP numerical forecast models, from operational satellites, from derived satellite products, and from ground and other in situ observing systems, and provide merged, quality controlled and documented research data sets to the science community.

Support the design and test new science data processing and analysis systems and interfaces that enable greater interaction among scientists, and facilitate development of optimized multi-source blended products that incorporate various multi-spectral, multi-platform satellite, in situ, and model data.

Provide general program support in the planning, executing, managing, maintaining, sustaining, reporting, of existing, new, developing satellite related programs, equipment, data, projects and studies.

Provide support in coordinating and planning interactions between NESDIS succession planning effort and space planning for the current [INSERT AGENCY] buildings and new National Center for Weather and Climate Prediction (NCWCP); support in coordinating the review of grant proposals and annual grant plan tracking.

Support services under this contract may also include technical support of a clerical or administrative nature which will be considered in scope with the professional technical services of this contract.

2.1.2 Tasking Area 1.2: Sensor Technology and Development

Support development of inter-satellite calibration of radiances using the simultaneous nadir overpass (SNO) and simultaneous conical overpass (SCO) method types and development and support to the Global Space-based Inter Calibration System (GSICS).

Support development and implementation of systems for post-launch calibration of remotely sensed measurements across the spectrum (visible, infrared, and passive/active microwave sensors) using calibration and validation techniques based on observations of land surface targets, the lunar surface, and from ocean buoys, shipboard measurements, aircraft observations and from inter-comparisons of different spacecraft instruments.

Support Polar Environmental Satellites (POES), NPP, Joint Polar Satellite System (JPSS), Geostationary Operational Environmental Satellite (GOES), and GOES-R cross platform calibration efforts.

2.1.3 Tasking Area 1.3: Ocean Science and Technology Applications

Provide science and technical support for the development and evaluation of new algorithms from current and future [INSERT AGENCY] geostationary and

polar-orbiting satellites using actual or proxy satellite data to estimate, for example, land surface temperature, precipitation, snow cover, sea ice, ocean surface winds, vessel positions, water leaving radiances, chlorophyll concentration, and cloud properties.

Conduct technical support, management, research, and development of remote sensing data on the world's oceans, and calibrate instruments, verify data, and create products to meet the needs of users for satellite data and other information on oceans and coastal zones.

Perform research and develop techniques for analyzing satellite-based SAR data to provide information such as: oil spill location, detection of marine debris convergence, morphology of hurricane and severe storms, and location of current fronts and river plumes.

Implement at-sea bio-optical experiments in support of the validation/calibration of space-borne instrumentation and science algorithms. Collect, analyze, and correct in situ biological data and develop and implement an integrated-data biological productivity model.

Using ocean and atmospheric models, research, develop, validate, and support techniques for measuring mixed layer depth from satellite radar measurements of the ocean's surface.

Provide scientific support for the development and implementation of programs involving operational ocean remote sensing. This includes product development and validation for operational Sea Surface Temperatures, Ocean Color, Ocean Surface Winds and Altimetry products; establishment and maintenance of customer interface functions [product development, collection and analysis of requirements, and geospatial data expertise (GIS)] to support utilization of operational ocean remote sensing products and development of new GIS capabilities.

2.1.4 Task Area 1.4: Data Assimilation Applications

Support research and develop new satellite products and applications to improve and expand the use of satellite data for monitoring global meteorological, oceanographic, environmental and climatological conditions.

Support development and validation of the Community Radiative Transfer Model (CRTM)), as well as other radiative transfer models for forward calculation of radiances.

Conduct scientific and technical support on the use of satellites and satellite data to improve analysis, forecasts and warnings for global, regional and mesoscale events; develop advanced products from new or existing environmental satellite systems and data for weather forecasting and monitoring of the earth-atmosphere system.

Develop procedures, algorithms, and systems to process raw satellite data into radiance and geophysical products, and develop and deliver algorithms that enable products that can be provided in near-real-time for NWP and that can be used for research and applications purposes.

Provide support to technical and prototyping studies related to collaborative system architectures, new technologies and scientific techniques, to ensure a reliable, robust and secure infrastructure that is tailored to support a working environment that facilitates greater collaboration among internal and external scientists.

Support development of a [INSERT AGENCY] integrated calibration and validation system framework, and other calibration and validation required for satellite products , and [INSERT AGENCY] product generation, modeling, near-real time web based monitoring, and data assimilation efforts.

Support development and near-real time web based validation of radiative transfer models that facilitate direct assimilation of radiances or other satellite observations into NWP forecast models.

Support model data assimilation and OSSE studies using [INSERT AGENCY], Metop, NASA (and international) satellite data, and advanced sensor types such as GPS radio occultation measurements and lasers to improve forecast skill and observing system design.

Provide support to societal benefits assessments, and external scientific stakeholder outreach and training.

Provide administrative assistance in organizing various science and management activities for the Joint Center for Satellite Data Assimilation, as well as other organizations in STAR.

More specific objectives that are anticipated with the funding currently being added are described here:

  -Support of the development of cloudy and rainy radiance data assimilation
  -Support of the development and validation of surface-sensitive data
   assimilation (ocean, land, cryosphere)

-Support of the future development of space weather data assimilation
-Support the development of advanced quality control techniques, monitoring and models for data assimilation
-Perform research and operational satellite data denial experiments in NWP assimilation systems and assess forecast impacts
-Support the development of a research environment for data assimilation scientists that follow closely the operational environment.
-Support of the development in using satellite and in situ data for ocean physical, optical, biological, and biogeochemical, as well as other environmental properties, research and applications.

2.1.5 Tasking Area 1.5: Program Support and Outreach Activities

Provide general program support in the planning, executing, managing, maintaining, sustaining, reporting, or existing, new, and developing satellite related programs, equipment, data, projects and studies.

Provide support to societal benefits assessment, and external scientific stakeholder outreach and training.

Provide writing, editing, and media relations support for outreach programs, technical reports, and manuscripts.

Support services under this contract may also include technical support of a clerical or administrative nature which will be considered in scope with the professional technical services of this contract.

3.0   STAFFING

This procurement will acquire scientific and technical professional services which will augment in-house capabilities whose primary purpose is to provide scientific and technical support to [INSERT TASK TITLE]. The science in this work requires expert academic and practical support, often at the Ph.D. and Master's degree level, with experience in remote sensing of the Earth's atmosphere, weather, ocean and climate systems; radiative transfer; and interpretation of satellite measurement data for atmosphere, weather, ocean and climate. The Contractor shall be required to provide scientific and technical support services for the analysis and application of operational and research satellite data in atmospheric, weather, oceanic and land surface prediction services, and scientific studies, including scientific research projects of [INSERT AGENCY]'s crosscut programs. Contractor personnel will typically consist of a mix of scientists, meteorologists, physicists, oceanographers, technicians, programmers, and related technical disciplines; may include optical and instrument engineering expertise versed in the design, analysis, and testing of remote sensing instruments and detectors.

This support may involve participation in field experiments, including those on ships and aircraft platforms.

4.0   DELIVERABLES

a) The statement of work (SOW) for each individual Task Order under this contract will define the support services required as areas, tasks, efforts, work assignments, or functions that are to be accomplished, under the general scope of this contract. The actual work will be authorized or "ordered" through the periodic issuance of individual Task Orders for services that fall within the general scope of this statement of work. Each Task Order will cite the appropriate section of the SOW and will provide a separate, detailed, and descriptive task order SOW of specific work required under that task order. The service levels, delivery requirements, and periods of performance will be individually defined in each Task Order based on the type and complexity of work required. Deliverables will be identifiable in each individual task. All deliverables provided under task orders become the property of the U.S. Government.

b) Progress Reports - The Contractor shall submit to the Contracting Officer (CO) and the Contracting Officer's Representative (COR) a monthly progress report. Contractor shall prepare a monthly report detailing significant events, accomplishments, and issues. The report shall include a brief summary of activity under the base contract, including short statements on the project's objectives, scope, methodology, information obtained, and conclusions. It shall also identify accomplishments/summary, and pending issues/comments for the contract. The report shall also include any additional information--including findings and recommendations --that may assist the Government in evaluating progress and managing activities under this contract.

c) Task Order Tracking Tool – Contractor shall provide as an integral part of this contract a task order tracking tool that will serve to record, monitor, track, store, maintain, and report all task orders awarded to the contractor. This tool must be electronic and may be web based. The tool must provide the CO, COR, task order monitors, and other Government personnel the ability to review all relevant task order information. The task order tracking tool will provide a complete financial summary of the orders including dates, amounts awarded, funded, expended, invoiced, and paid as well as have the capability to store, hold, and provide visibility to view task order documents, like the SOW and the task order. The ability to submit invoices and on-line signatures/approvals as part of this tool is desired. There is no specific tool or product mandated, the contractor shall provide its own version/format of this tool that satisfies this requirement.

5.0   TRAVEL/TRAINING

The Government shall specify the travel dates and location for which local, domestic, and international travel will be required. The purpose of the travel may be for reporting task progress, coordinating research efforts, and/or participating in scientific meetings and experiments. The Contractor shall be responsible for arrangements such as airline, hotel, and car reservations, and arranging for passports and visas if foreign travel is required. The Contractor shall be required to invoice in accordance with FAR 31.205-46, Travel costs, and Federal travel regulations and must submit back-up documentation for all travel costs.

The Government may require contract personnel to take special training if determined to be of benefit to the Government, to develop additional expertise in specialized scientific or data analysis topics. Any such training would result from a request by the Contracting Officer's Technical Representative to the Contracting Officer who would request a written price/cost proposal for the special training from the contractor. Following evaluation and agreement on price/costs, the Contracting Officer would provide a written authorization for the travel (generally in the form of a supplemental agreement to the impacted task order).

6.0   IT SECURITY

Personnel shall be screened in accordance with the requirements for Low Risk contracts as specified by CAM 1337.70 section 2.2; specifically, in accordance with CAR 1352.237-71, *Security Processing Requirements---Low Risk Contracts* (April 2010). Any access by contract personnel who are Foreign Nationals shall be in accordance with the requirements of CAR 1352.237-73, *Foreign National Visitor and Guest Access to Departmental Resources (APR 2010).*

7.0   PERIOD OF PERFORMANCE

The period of performance shall be [INSERT TIME PERIOD] from date of award.