Year One Task Order Statement of Work
LaRC Geospatial Support Services (GSS)

1 Task Order short description:

The Contractor shall provide Geospatial Support Services (GSS) for NASA Langley Research Center (LaRC).

2 Period of Performance:

The period of performance shall be from task order award through 30 September 2016.

3 Objective:

The objective of this task order is to provide: all ongoing GSS support required for NASA LaRC, existing commitments for GSS partners. In addition, provide support for next generation capabilities.

4 Scope:

The contractor shall provide LaRC GSS services per Exhibit A of the contract for all effort described herein. The Contractor shall utilize the existing GSS Task Manager for managing both internal work and external requests for GSS products and services.

The physical area for this task includes all of NASA LaRC and the adjoining Langley Air Force Based (AFB). At times, support is provided at off-site locations within 25 miles of Langley Research Center and represents approximately 10 trips per year

5 Description of the Work to be Performed:

5.1 Staffing:

5.1.1 The Contractor shall provide and shall locate personnel in accordance with Exhibit A, paragraph 5.1 of the contract.

5.1.2 Normal working hours at NASA LaRC are Monday-Friday 8 am to 4:30 pm. The NASA LaRC work day encompasses a 6am to 6pm flexible work schedule to allow for flexibility of shifts. The Contractor shall provide adequate staffing during these normal work hours and will be able to adjust shifts so as to meet programmatic milestones.

5.1.3 The Contractor shall provide a report within ten (10) business days from return from any conference or training event. The report shall include a pro/con and applicability assessment of information presented or reviewed and applicability to NASA LaRC. The report shall also include an assessment of any training noting the highlights relevant to this task order.

5.2 Technology: The Contractor shall continually evaluate the utility of Government provided technology and report deficiencies or recommended improvements including, but not limited to the areas referenced in Exhibit A, paragraph 5.2 of the contract. This information shall be reported in the GSS Next Generation report per paragraph 5.12.4 below.

5.3 Configuration Control:

5.3.1 The Contractor shall provide Configuration Control as referenced in Exhibit A, paragraph 5.3 of the contract.

5.3.2 The Contractor shall implement Configuration Control that meets or exceed the current version 1.3 of Capability Maturity Model Integration Services (CMMI–SVC) for the Government's GSS: 1) information network, 2) data, 3) software and, 4) field measurement hardware as indicated herein (SG = strategic goal; SP = strategic process):

5.3.2.1 SG 1 Establish Baselines
- **5.3.2.1.1** SP 1.1 Identify Configuration Items
- **5.3.2.1.2** SP 1.2 Establish a Configuration Management System
- **5.3.2.1.3** SP 1.3 Create or Release Baselines

5.3.2.2 SG 2 Track and Control Changes
- **5.3.2.2.1** SP 2.1 Track Change Requests
- **5.3.2.2.2** SP 2.2 Control Configuration Items

5.3.2.3 SG 3 Establish Integrity
- **5.3.2.3.1** SP 3.1 Establish Configuration Management Records
- **5.3.2.3.2** SP 3.2 Perform Configuration Audits

5.3.3 The Contractor shall baseline and model the current GSS enterprise information network. The model shall be a minimum of a one page block diagram identifying servers, operating software, showing connectivity to Portal web applications. The model shall be completed within 30 calendar days and a process to Configuration Control the model shall be developed within 180 calendar days of task award and fully implemented within 270 calendar days of task award.

5.3.4 The Contractor shall baseline and model the current LaRC GSS data environment identifying spatial layers, relational databases or other data in a text, chart, spreadsheet or other format. The model shall be completed within 30 calendar days and a process to Configuration Control the model shall be developed within 180 calendar days of task award and fully implemented within 270 calendar days of task award.

5.3.5 The Contractor shall develop a baseline BIM inventory within 30 calendar days of task award with the following, but not limited to: Design or Construction phase, facility name or number, percent complete, level of detail (LOD) and date of last revision. The Configuration Control process for the inventory and each model shall be developed within 180 calendar days of task award to include editing and revision control with a fully implemented process within 270 calendar days of task award.

5.3.6 The Contractor shall inventory and verify Exhibit D, which contains the Government's field measurement hardware and embedded software within 30 calendar days of task award. Developmental and production equipment shall be separated to avoid inadvertent use of developmental equipment in a production environment. The Contractor shall label all production equipment within 30 calendar days of the task start date with date, version, and certifying official's name and in the inventory. The inventory shall be Configuration Controlled and accessible within 30 calendar days of task award. The process to maintain the inventory under Configuration Control shall be developed within 180 calendar days of task award and fully implemented within 270 calendar days of task award.

5.3.7 The Contractor shall verify, model and baseline the current GSS Geodetic Control Network. The model shall be a minimum of a one page diagram and will be maintained under Configuration Control and be completed within 30 calendar days of task award. The process for Configuration Control of the model shall be developed within 180 calendar days of task award and fully implemented within 270 calendar days of task award

5.3.8 The Contractor shall accomplish an initial baseline inventory and evaluation of all Government provided software in Exhibit D. In addition, the version and status of license shall also be identified. The evaluation shall indicate applicability and usage. The inventory shall be reported within 30 calendar days and a process to Configuration Control the software shall be developed within 180 calendar days of task award, and fully implemented within 270 calendar days of task award. This inventory shall be continuously updated in accordance with the configuration control process.

5.3.9 The Contractor shall provide a baseline Configuration Control status report 90 calendar days after award of task and updates every 90 calendar days for the remainder of the this task. The report shall be developed in a template format to allow for efficient updates and reviews. Acceptable data formatting may include, but is not limited to any or all: text, charts, or spreadsheets. The report shall be a minimum of a three page text, chart or other method describing:

5.3.9.1 Current strategy or roadmap including quarterly milestones to achieve the Configuration Control objectives for this task.

5.3.9.2 Current overall Configuration Control status of: the Government's GSS: 1) enterprise information network, 2) web, applications, scripts and data, 3) Exhibit D software and, 4) field measurement hardware and related embedded operating software.

5.3.9.3 Self-assessment of progress relating to strategy objectives and timeline.

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5.4 Databases:

5.4.1 The Contractor shall provide database functionality as per Exhibit A, paragraph 5.4.1 and 5.4.2 of the contract for both LaRC and the GSS partner at NASA Johnson Space Center.

5.4.2 The Contractor shall enhance the functionality of GSS products and services by improving and increasing the associations between, but not limited to: the databases as described in Exhibit A, paragraph 5.4.1 and 5.4.2 of the contract.

5.4.3 LaRC GSS databases shall be configuration controlled and included in the data model per paragraph 5.3.4.of this task.

5.4.4 The Contractor shall track requests and submittals using the GSS Task Manager.

Database Management: The Contractor shall provide all Database Management services and system functionality as per Exhibit A, paragraph 5.4.3, of the contract.

5.4.5 Building Information Model (BIM) Systems and BIM Data:

5.4.5.1 The Contractor shall manage all new and updated BIM information for completeness and accuracy per Exhibit A, paragraph 5.4.4, of the contract.

5.4.5.2 The Contractor shall develop and implement a Configuration Control process that conforms to the standards and objectives of paragraph 5.3 of this task.

5.4.5.3 The Contractor shall provide NASA LaRC project managers the capability of viewing detailed BIM information by utilizing Government-furnished software products including, but not limited to, Revit Suite, Navisworks or Solibri.

5.4.5.4 The Contractor shall validate BIM data by accomplishing scans and survey of new building construction or remodel projects at NASA LaRC. The spatial data captured shall be compared with existing the BIM inventory. Spatial data disparities that exceed design tolerances shall be recorded with the associated BIM file as a significant adjustment in accordance with the Configuration Control process.

5.4.6 The Contractor shall maintain and improve the interoperability of databases between GSS and LaRC Other Systems per Exhibit A paragraph 5.4. The Contractor shall implement the web-based tool to automate the current paper process recording facility equipment at NASA LaRC in accordance with Langley LMS CP-5616 and Langley Form 491 and have the following capabilities:

5.4.6.1 Accessible to personnel within the NASA LaRC Personnel Directory;

5.4.6.2 Menu options to: replaced, change or remove equipment

5.4.6.3 Fully automated routing with email notifications:

5.4.6.4 Address all phases of the review process currently associated with the current paper process;

5.4.6.5 Web accessible reporting capability to search or query by: status of request, work assigned to each person, date of request, status date or asset number.

5.4.6.6 Scheduled downtime (outages) of less than 2 hours or less per week during normal working hours.

5.5 Spatial Data:

5.5.1 The Contractor shall maintain and enhance the complete spatial data environment by collecting, analyzing, maintaining, and disseminating spatial data per Exhibit A, paragraph 5.5 of the contract.

5.5.2 When recording spatial data on site or near LaRC, the Contractor's survey and measurement shall conform to spatial data and data model standards Current standards are: Spatial Reference System Identifiers (SRID) shall be recorded and maintained using: 1) LaRC Horizontal coordinates shall be reported in NAD83 HARN (1993) US State Plane Coordinate System, Virginia South Zone, in meters and 2) NAD83 Vertical coordinates shall be reported in NAVD88, as orthometric heights derived from GEOID03 in meters. It is expected this standard will change. See 5.5.3 below.

5.5.3 The Contractor shall provide the following:

5.5.3.1 A report detailing the requirements and effect to spatial data when updating all spatial references from the current LaRC horizontal datum NAD83 (1993) Virginia HARN to the NAD83 (2011) National Spatial Reference System (NSRS). The Contractor shall provide a NSRS Geodetic Control Network H Measurement Transition Plan to the COR within 180 calendar days of task award. Upon the approval of the transition plan by the COR, the Contractor shall implement the transition resulting in upgrading the LaRC horizontal datum to the new standard within 270 calendar days of plan approval.

5.5.3.2 A report detailing the requirements and effect to spatial data when updating to a new GRAV-D vertical datum in the NSRS. The Geodetic Control Network V Measurement Transition Plan shall be provided to the COR within 270 calendar days of task award.

5.5.4 The Contractor shall comply with the types of tolerances listed below for accuracy regarding spatial data recorded by the Contractor within the state of Virginia.

5.5.4.1 Utilities Markings: The Contractor shall comply with the accuracy requirements are + 0.25 feet for horizontal location and + 0.10 feet for vertical location (elevation). Within 300 calendar days of task award all utility marking shall be at survey grade accuracy using GPS enabled electronic field display. Refer to 5.5.20 for details.

5.5.4.2 Absolute coordinates: The Contractor shall comply with the accuracy requirements when surveying and recording data as follows: for coordinates referenced to the current datum/projection in use when locating features, buildings, boundaries, etc. each point shall be within + 3 cm (0.1 feet) at the horizontal location and + 4.5 cm (0.15 feet) 2) at the vertical location (elevation), which are consistent with the use of Real Time Kinematic Global Positioning System (RTK GPS) survey at a 95% confidence level.

5.5.4.3 Relative measurements: The Contractor shall comply with the requirements for accuracy in measuring positions relative to a project or assembly. For example: the angular slope of a drainage pipe or the parallel alignment of a machine to its base. Points recorded shall be within + 0.3 cm (0.01 feet) for construction layout surveys and + 0.15 cm (0.005 feet) for machinery alignment. These accuracy requirements are consistent with the use of a properly referenced Optical Total Station at a 95% confidence level.

5.5.4.4 Plant and building level data updates shall go through a configuration control process and be checked into product during this task. This requirement is expected to address approximately 425 versions that need to be reviewed and checked in. The review of version shall be addressed within two (2) business days and either be accepted or sent back to originator for correction.

5.5.4.5 The Contractor shall accomplish and record measurements for LaRC Science or Research Directorates when requested according to International Terrestrial Reference Frame (ITRF) datums for Transition from current ITRF2000 (epoch 1997.0) to the most current realization.

5.5.5 The Contractor shall accomplish an automated weekly gap analysis between GSS spatial point data and the Government's Computerized Maintenance Management System database (currently IBM Maximo version 7.5) for the purposes of determining location data.

5.5.5.1 The Contractor shall continually coordinate with the LaRC Facility Maintenance Center Maintenance, Operations, and Engineering (CMOE) contractor to resolve gaps between GSS and the CMMS. In cases where data cannot be reconciled, the Contractor shall inform the COR.

5.5.5.2 Summary monthly analyses shall be consolidated and recorded electronically with recommendations to address and resolve cases of increases in gap counts.

5.5.6 The Contractor shall accept phone calls and email requests for changes or updates to building or exterior feature data. The Contractor shall record and manage requests in the GSS Task Manager within five (5) business days and geometry changes implemented within ten (10) business days. The Contractor shall respond to the requestor by email five (5) business days of changes in geometry are implemented completion.

5.5.7 The Contractor shall process requests for changes to plant level data documented via email within five (5) business days and geometry changes implemented within ten (10) business days (unless priority changed by COR). Resolution of requested change shall be documented via email within five (5) business days of completion. A log of these requests shall be maintained in the GSS Task Manager.

5.5.8 The Contractor shall incorporate into production, updates based on field measurements within seven (7) business days of the field observations. Edited versions of data shall be submitted through the Survey Work/Digging Permit System. A brief description of changes being made shall be attached to the task in the permit system. Any findings not related to the task, but included in the submission, shall be added to the Notes section of the task.

5.5.9 The Contractor may use field notes and other as-built information during feature data collection process; however, all information necessary for future use with dig permits or utility/facility system analysis shall be incorporated into production within seven (7) business days.

5.5.10 Information that is addressed in field notes and other as-built information that may not be readily integrated into existing production environment shall be converted to electronic format with copies added to the NASA-LaRC as-built files. This data that does not fit within current processes for spatial database update shall be forwarded to the COR for resolution. The Contractor shall convert all information from field notes and other paper based as-built information to electronic format with the information added to the LaRC GSS data. The Contractor shall notify the COR when data received cannot be converted or moved to an electronic format.

5.5.11 The Contractor shall develop, deliver, and implement a process to migrate utility spatial data from the current 2D drawing framework to a complete 3D model.

5.5.12 The Contractor shall develop a 3D model of the storm drain system within 180 calendar days from task order start date and provide evidence of a functional model. The model shall have the capability to produce 2D drawings to satisfy legacy use. Within 270 calendar days, the 3D model system shall be managed to the Configuration Control requirements of this task (per paragraph 5.3 of this task) to allow for view, edit or return of the model as well as a version control process.

5.5.13 The Contractor shall develop and implement a Field Measurement Training Plan to perform survey grade accuracy using GPS enabled electronic field display when marking utility data. The plan shall be delivered to the COR within 180 calendar days of task award and the Contractor shall have completed all training within 270 calendar days of task award and full implementation within 300 calendar days of task award.

5.5.14 Spatial Data Support for Buildings: The Contractor shall provide all Spatial Data Support for Buildings and Planning per Exhibit A, paragraph 5.5.8, of the contract.

5.5.15 Spatial Data requirements data for originating from other than LaRC GSS: All spatial data received from outside prime and subcontractors, including new designs, as-built, design changes and modifications to existing elements, will be provided to the Contractor as per Exhibit A, paragraph 5.5.9, of the contract.

5.5.15.1 The Contractor shall support validation of measurement accuracy for models and drawings vs. as-built, with data available for monthly review with COR and/or Project Manager with a goal to reduce requirement of 100% survey to 10% validation of as-built conditions.

5.5.15.2 All spatial and tabular data applications shall be reviewed for compatibility with current ESRI, Oracle or Autodesk product suite and shall be maintained using the Concurrent Version System (CVS) and/or similar products such as Git. Notify the COR for resolution in cases where data does not meet standards.

5.6 GSS Survey:

5.6.1 The Contractor shall perform surveying work in the field for locating and marking existing underground utilities to preclude damage during routine and emergency digging projects for construction and maintenance activities (Refer to the current version of LPR 1740.2 "*Facility Safety Requirements*" Section 2.3, Underground Utilities / Digging Permits). The utility marking shall be thorough and marked in accordance with American Public Works Association Color Codes for Utilities.

5.6.2 The Contractor shall attend a weekly meeting with Air Force personnel at LAFB as described in Exhibit A, paragraph 5.6.3 of the contract.

5.6.3 State Licensed Surveyor: There are no requirements or deliverables for this Task Order which require the services of a State licensed surveyor. However, if needed during performance, this cost will be covered as an Other Direct Costs (ODC) of this task.

5.6.4 The Contractor shall provide Survey and Measurement services for Construction and Maintenance per Exhibit A, paragraph 5.6.5 of the contract. Data collected shall conform to Spatial Data requirements (reference paragraph 5.5 of both Exhibit A and this task).

5.6.4.1 The Contractor's survey services shall include the capability to respond immediately to a dig permit request or other priority spatial data support requests. Approximately, 250 dig permits are anticipated during normal business hours during this period of performance.

5.6.4.2 All support for surveying services shall be initiated by customers using the Work/Survey/Digging Permit system accessed through the LaRC GSS Portal. The system tracks requests and status of the various efforts in the system and supports reporting for environmental compliance.

5.6.4.3 The Contractor shall proceed and issue dig permits without completing the electronic dig permit process when an urgent or emergency scenario arises. In these cases, the Contractor shall complete the electronic dig permit process the next business day.

5.6.4.4 For emergency digging permit requests, (e.g., broken water lines) the Contractor shall report to the specified site location within 15 minutes of notification during normal working hours. Approximately ten (10) emergency dig permit requests are anticipated during normal business hours during this period of performance. Additionally emergency survey support for digging permits is required during weekends or outside normal working hours (estimated four (4) times per year),. The Contractor shall provide the capability to receive these requests and respond within two (2) hours for these requests. The Contractor shall provide the COR a means to request these services outside normal working hours.

5.6.4.5 General digging permits shall only be issued once all applicable information and approvals (such as LF461) are in the appropriate status to proceed. The Contractor shall respond at the work site within the next business day for General Dig Permit requests.

5.6.4.6 All proposed ground penetrations should include a map of impacted location in the GSS system.

5.6.5 The Contractor shall upload for submission to the Survey Work/Digging Permit System after the fact within two (2) business days. Feature geometry, coordinates, feature codes, and other related data from electronic survey/stakeout or digitization shall be stored and accessible to GIS for analysis within seven (7) business days of survey.

5.6.6 The Contractor shall coordinate with project managers, inspectors, and construction Contractors to ensure that as-built location information and photographic images for all below-grade utilities are recorded prior to backfill. For instances where survey is not practical before back fill, the Contractor shall coordinate with the construction Contractor to establish a method of locating features in advance of backfill, such as installation of known lengths of PVC pipe, which can be surveyed to project horizontal and vertical position of the buried feature and then pulled out after survey.

5.6.7 The Contractor shall be responsible for the accuracy and completeness of all updates/revisions to NASA LaRC facility and utility data. All updates/revisions shall meet the existing data format and schema.

5.6.8 The Contractor shall include check shots daily of one of LaRC's many control monuments as per the Geodetic Control Network (refer to model http://gis-www.larc.nasa.gov/control_networks/langley/) for all field data collection efforts. All attributes (e.g., type of material, size of plumbing, electrical cables, conduit,) contained in GSS databases shall be populated to the fullest extent possible using all available data sources (e.g., field notes, photographs, and survey data).

5.6.9 The Contractor shall provide Survey and Measurement services for Science and Research Projects (approximately 20 projects during normal business hours) within two (2) hours of receiving such requests. The Contractor shall be responsible for submission to the Survey Work/Digging Permit System after the fact within two (2) business days. Feature geometry, coordinates, feature codes, and other related data from electronic survey/stakeout or digitization shall be stored on the government server and accessible to GIS for analysis within seven (7) business days of observations.

5.6.10 Historic manual drawings (approximately 3,000) which have been scanned shall be reviewed to extract essential data (e.g., utility and facility features) to be incorporated into the GIS system within 300 calendar days. The Contractor shall archive historic manual drawings, AutoCAD files, and field notes; and once archived, shall not be used as source or production data.

5.7 GSS Measurement:

5.7.1 The Contractor shall maintain the LaRC Geodetic Control Network per Exhibit A, paragraph 5.7, of the contract.

5.7.2 The Contractor shall develop a relocation plan, including transition method and calibration file, to move the GPS RTK Base Station from Bldg. 1238 and 1268.

5.7.2.1 The relocation plan shall address requirements to ensure continuous functionality and accuracy of the network at LaRC. Additionally the plan shall provide for the follow-on performance to be at least the same level of accuracy when checked against the LaRC Control Network.

5.7.2.2 The Base Station Relocation Plan shall be provided within 180 calendar days of task award

5.7.2.3 Upon approval of the plan by the COR, the Contractor shall relocate the base station from Building 1238 to Building 1268. The relocation shall be completed within 300 calendar days from task award. The Contractor shall update the baseline system model and then maintain model currency per paragraph 5.3.2 above.

5.7.3 The Contractor shall monitor and record subsidence and tide measurements at LaRC via Global Navigation Satellite System (GNSS) and digital level observations. The Contractor shall report by email the raw data recorded to: National Geodetic Survey (NGS), US Geological Service (USGS), and the LaRC Science Directorate with a copy also sent to the COR. Four (4) reports shall be sent each calendar year, one (1) approximately every 90 calendar days.

5.8 GSS Mapping and Web Tool Services:

5.8.1 The Contractor shall maintain and annually update standard sets of commonly used maps (e.g., approximately 200 maps such as badge and pass map, snow removal maps, water valve isolation, floor plan, visitors, spill plan) and generate map books for large areas. Custom use or unique maps shall be developed based on existing available data, unless otherwise specified. These tools shall be maintained in GSS databases. This will include use of applications such as, but not limited to, ESRI City Engine, to develop visualizations of center resources and changes.

5.8.2 The Contractor shall provide requested GSS maps as referenced in the preceding paragraph and reports based on GSS information within two (2) business days from date of request. The Contractor shall be responsible for tracking all requests in the GSS Task Manager.

5.8.3 The Contractor shall develop a Relational Database Management System Web Tool Transition Plan to move the Facility Management Portal which is currently based on Apex and Oracle Reports, to an Oracle Business Intelligence (BI) Publisher capability within 180 calendar days of task award. The COR shall review the plan for completeness. The Contractor shall implement the approved transition plan and have the Oracle Business Intelligence (BI) Publisher fully functional within 270 calendar days of task award.

5.8.4 The Contractor shall replicate a portion of the current LaRC GSS portal environment for the GSS partner at NASA Johnson Space Center and enable at least three web mapping applications, including but not limited to: flood tool, personnel locator tool, and impervious surface tool, based on existing partner data currently stored by LaRC GSS.

5.9 GSS Visualization:

5.9.1 The Contractor shall generate visualizations per Exhibit A, paragraph 5.9 of the contract

5.9.2 The Contractor shall develop and maintain imagery such as aerial photos, LIDAR data, laser scans, and vector data and spherical photos including, but not limited to, through the utilization of modeling and integration and analysis of aforementioned and imagery collection (including spherical photos).

5.9.2.1 The Contractor shall complete data collection within five (5) business days of request, and provide processed data within seven (7) business days of data collection.

5.9.3 Field collection of imagery and laser scan data for facility and components is expected to be approximately 50 projects during this task.

5.10 GSS Analytics:

The Contractor shall provide analytic services per the Exhibit A, paragraph 5.10, of the contract within two (2) business days. Requests (approximately 50 per year) include, but are not limited to: spatial or tabular data formatted to routine or customized queries and reports. The Contractor shall track all requests for Analytics in the GSS Task Manager.

5.11 Software applications:

5.11.1 Government-provided software is included in Exhibit D of the contract. The Contractor shall utilize and enhance the application of software in their performance of this task and notify the COR of software revision updates or different applications needed.

5.11.2 The Contractor shall also identify opportunities to implement new versions or software applications and consolidate or discontinue the use of software as well as the most efficient licensing and implementation plans.

5.11.3 The Contractor shall provide a Software Inventory Report per section 5.3.9 and section 6.

5.12 Next-Generation GSS Systems:

5.12.1 The Contractor shall evaluate Next-Generation GSS Systems per Exhibit A, paragraph 5.12 of the contract.

5.12.2 The Contractor shall recommend improvements for GSS analytics (decision support systems) that integrates existing and to-be-developed infrastructure information applications which have a potential to be implemented within one (1) year.

5.12.3 Improvements in Portal that will enable the technology to be fully interoperable with all components of the GSS environment. Examples include, but not limited to:

5.12.3.1 Migration to contemporary data model and research and study data models such as Local Government, Building Interior Spatial Data Model, and industry leading utility data models

5.12.3.2 Develop test and implement the capability to generate schematic diagrams from spatial and tabular utility data

5.12.3.3 Develop and implement an intelligent network routing system that includes the including flow of utility, vehicle and pedestrian transportation networks.

5.12.3.4 Implement an interface to Center data services which utilizes GeoEvent processor to address display of data available in various near real time database tools such as OSI Soft PI Integrator to support dashboard display in Portal.

5.12.3.5 Design, implement, and maintain Configuration Control web applications to manage: facility attribute data, integrate maps, and provide business intelligence utilizing but not limited to: Oracle Application Express, BI Publisher, ESRI Portal, and AnyChart.

5.12.3.6 Research and identify industry trends including but not limited to: 1) GSS or IT related hardware and or software, 2) GSS-related equipment or data, 3) any additional labor resources, training or travel requirements to implement the above and 4) task tracking system.

5.12.4 The Contractor shall provide a Next Generation GSS Report every 90 calendar days providing the COR a review of long-term potential changes or upgrades that should be investigated or pursued for efficiency and effectiveness improvements, including, but not limited to: hardware, software, peripheral devices, measuring equipment, network modeling, data storage and spatial data modeling and technology referenced in paragraph 5.2 above.

6 Deliverables:

The Contractor shall locate all deliverables on the table below to a Government IT Server as specified by the COR. The COR will approve all deliverables.

	TO para-graph	Title	When due
1	5.1.3	Travel Report	10 business days after completion of the event
2	5.3.3	GSS Enterprise Information Network Model	30 calendar days after task award
3	5.3.3	GSS Enterprise Information Network Model Configuration Control process	180 calendar days after task award
4	5.3.4	GSS Data environment Model	30 calendar days
5	5.3.4	GSS Data environment Model Configuration Control process	180 calendar days after task award
6	5.3.5	BIM Inventory	30 calendar days after task award
7	5.3.5	BIM Configuration Control process	180 calendar days after task award
8	5.3.6	Field measurement hardware and embedded software inventory	30 calendar days after task award
9	5.3.6	Field measurement hardware and software Configuration Control process	180 calendar days after task award
10	5.3.7	GSS Geodetic Control Network Model	30 calendar days after task award
11	5.3.7	GSS Geodetic Control Network Model Configuration Control process	180 calendar days after task award
12	5.3.8	GSS Software Inventory	30 calendar days after task award
13	5.3.8	GSS Software Configuration Control process	180 calendar days after task award

14	5.3.9	Configuration Control Status Report	90 calendar days after task award and every 90 calendar days there after
15	5.5.3.1	NSRS Geodetic Control Network H Measurement Transition Plan	180 calendar days After task award
16	5.5.3.2	NSRS Geodetic Control Network V Measurement Transition Plan	180 days calendar After task award
17	5.5.12	3D model of Storm Drain Utility	180 calendar days After task award
18	5.5.12	3D model of Storm Drain Utility Configuration Control process	270 calendar days After task award
19	5.5.13	Field Measurement Training Plan	180 calendar days After task award
20	5.7.2.2	GSS Control Network Base Station relocation Plan	180 calendar days After task award
21	5.7.3	Email raw data to NGS, USGS, and LaRC Science Directorate and copy to COR	Every 90 calendar days
22	5.8.3	RDBMS Web tool Transition Plan	180 calendar days after task award
23	5.12.4	GSS Next Generation Report	90 calendar days after task award and every 90 calendar days there after

7 PERFORMANCE STANDARDS AND METRICS:

7.1 Performance Standard (quality). All Task Order products and services meet acceptance criteria for quality (suitability for use).

7.1.1 Exceeds: The Contractor surpasses the required level of performance for this standard.

7.1.2 Meets: The Contractor achieves the required level of performance for this standard. This level of performance includes products and services that initially have minor deficiencies but are corrected to be fully suitable for the intended purpose.

7.1.3 Fails: The contractor does achieve the required minimum level of performance for this standard.

7.2 Performance Standard (timeliness): All Task Order products and services provided meet requirements and acceptance criteria for timelines (when delivered).

7.2.1 Exceeds: The Contractor surpasses the required level of performance for this standard.

7.2.2 Meets: The Contractor achieves the required level of performance for this standard. This level of performance includes products and services that initially have minor deficiencies but are corrected to be fully suitable for the intended purpose.

7.2.3 Fails: The contractor does achieve the required minimum level of performance for this standard.

7.2.4 .

7.3 Performance Standard (initial responsiveness): All Task Order products and services meet all TO requirements and acceptance criteria for responsiveness (when requests or requirements are responded to).

7.3.1 Exceeds: The Contractor surpasses the required level of performance for this standard.

7.3.2 Meets: The Contractor achieves the required level of performance for this standard. This level of performance includes products and services that initially have minor deficiencies but are corrected to be fully suitable for the intended purpose.

7.3.3 Fails: The contractor does achieve the required minimum level of performance for this standard.

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7.4 Performance Standard (overall task performance): All Task Order products and services provided and meet requirements and acceptance criteria for overall task performance:

7.4.1 Exceeds: The Contractor surpasses the required level of performance for this standard when all TO requirements are met and five quality requirements are exceeded.

7.4.2 Meets: The Contractor achieves the required level of performance for this standard. This level of performance includes products and services that initially have minor deficiencies but are corrected to be fully suitable for the intended purpose.

7.4.3 Fails: The contractor does not achieve the required minimum level of performance for this standard. This standard reflects an inability to correct a less than acceptable trend at the overall level of performance in the TO monthly reviews.

8 NASA Points of Contact:

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