

**Northeast UAS Airspace Integration
Research Alliance, Inc. (NUAIR)**

**Request for Qualifications (RFQ)
New York UTM Corridor Development
System Planning, Design and Integration Services**

October 2017

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1.0 INTRODUCTION

The Northeast UAS Airspace Integration Research Alliance (NUAIR) is requesting Statements of Qualifications (“SOQs”) from interested organizations (“Vendor”) for support of an Unmanned Aircraft Systems (UAS) Traffic Management (UTM) pilot project.

This RFQ covers system planning, design and integration services for a UTM Corridor project between Syracuse and Griffiss International Airport, in Rome, New York. This RFQ covers system integration services for UTM Corridor development through 2022. The project scope potentially includes the planning, design, installation, commissioning, and operation of a state-of-the-art UTM research, development, test and evaluation (RDT&E) infrastructure.

The NUAIR Alliance is a New York based not-for-profit coalition of more than 100 private and public entities and academic institutions working together to operate and oversee UAS test ranges in New York, Massachusetts and Michigan. Headquartered in Syracuse, NY, with a main operating base at Griffiss International Airport, in Rome, NY. NUAIR manages one of just seven FAA-designated UAS test sites in the United States leading the research and deployment technologies that establish the case for safe, integrated UAS operations in the National Aerospace System.

NUAIR has been tasked by Empire State Development to develop and manage the investment which New York State is making in unmanned and connected aerial systems in upstate New York. NUAIR seeks responses from organizations who believe they are uniquely qualified as aerospace industry collaborators to work in New York to support development of global UTM standards and recommended practices. NUAIR desires responses which offer the promise of engaging with NUAIR and New York State to help lead global UTM innovation and evolution. We expect to reach cooperative agreements with strong partners with the capability to build on a strong foundation of excellence, together with a commitment to work with New York to lead and meet the challenges of a rapidly developing global aerospace field.

NUAIR, with its teaming partner Griffiss International Airport, has installed state-of-the-art range instrumentation based on primary radar, multilateration, and ADS-B. This air traffic tracking technology, along with an advanced data collection facility, supports the Griffiss Test Site’s mission of supporting UAS Detect and Avoid (DAA) systems development. NUAIR’s hangar and airfield access facilities at Griffiss are newly renovated to support UAS Test Site activity. A description of the Griffiss range instrumentation system is available at the following link:

<http://nuairalliance.org/assets/Uploads/2017-04-Young-Multi-Sensor-Fusion-for-UAS-GBDAA-ICNS-2017.pdf>

NUAIR collaborates with CenterState CEO, MassDevelopment and Mohawk Valley EDGE to support the UAS and sensor industry development in the region. That effort is led by the CenterState Corporation for Economic Opportunity (CEO), and Mohawk Valley Edge in New York, and MassDevelopment, in Massachusetts. CenterState CEO is an organization of 2,000 companies that work together to increase business competitiveness, community prosperity, and

regional growth in the 12-county CenterState New York region. Mohawk Valley EDGE is the vertically integrated economic development organization serving Oneida and Herkimer Counties. MassDevelopment, the Commonwealth's finance and development agency, works with businesses, nonprofits, financial institutions, and communities to stimulate economic growth throughout Massachusetts.

Some of the organizations partnering with NUAIR in the Alliance include Saab Sensis, SRC, Raytheon and Lockheed Martin. Colleges and universities include Rochester Institute of Technology, Massachusetts Institute of Technology, University of Massachusetts institutions, Syracuse University, Clarkson University, Northeastern University, and Mohawk Valley Community College, among others. (See www.nuairalliance.org for a full list.)

1.1 THE U-SAFE PROGRAM

As part of the Upstate Revitalization Initiative, Central New York has launched a 5-year investment program focused on unmanned and connected aerial systems. The investment is being made through a partnership between Empire State Development and the NUAIR Alliance as part of the U-SAFE (Unmanned Secure Autonomous Flight Environment) program, which aims to accelerate the testing, certification and safe integration of autonomous Unmanned Aircraft Systems into the airspace.

The U-SAFE program brings the National Aeronautics and Space Administration, the Federal Aviation Administration and industry partners together in the region to develop and field unmanned and autonomous systems which can safely operate in the national airspace. This program is broadly focused on development of a thriving unmanned and connected systems industry cluster in central New York, and builds on research and development capabilities at the FAA-designated Griffiss UAS Test Site.

1.2 THE NEW YORK UTM CORRIDOR PROJECT

As part of the U-SAFE program, a UTM system will be developed, certified and deployed in central New York. On November 10, 2016, Governor Andrew Cuomo announced a \$30 million investment in a 50-mile flight traffic management system between Syracuse and Rome's Griffiss International Airport, to advance development of the UAS industry in Central New York. Within the 50-mile UTM Corridor, this strategic investment will accelerate industry growth by supporting emerging uses of UTM and UAS in key Central New York industries, including agriculture, forest management, transportation and logistics, media and film development, utilities and infrastructure, and public safety.

The New York UTM Corridor will create opportunities for the world's leading sensor and air traffic management companies to deploy, test and validate their systems in support of global UTM standards, for data integrators to test their software on multiple sensing platforms and for industry

leading platforms to test and validate their technologies in a fully instrumented, beyond visual-line-of-sight and autonomous operational environment. This program is expected to engage numerous industry collaborators who will build on the already strong presence of UAS-related firms in Central New York and New York's Mohawk Valley.

1.3 NUSTAR (NATIONAL UNMANNED AERIAL SYSTEM STANDARDIZED TESTING AND RATING)

The U-SAFE program also includes the establishment of the capability for standardized testing and assessment of UAS airworthiness, cybersecurity, and performance benchmark testing, with a focus on enabling and acceleration the evolution of autonomous operation under UTM globally. This standardized testing and assessment capability is called NUSTAR (National Unmanned Aerial System Standardized Testing and Rating). Currently, standards are lacking for UAS airworthiness and certification. NASA will be engaged with the NUAIR implementation team in the design and development of the NUSTAR facility. It is intended that any UAS provider that desires to fly an unmanned aerial vehicle in the NAS should be able to come to NUSTAR for certification testing. The aim of NUSTAR is to develop facilities which will support industries involved in UAS production and use. The New York unmanned and connected systems initiative is premised on industry partner investment in the testing and development, investment which would likely increase as companies involved in unmanned vehicle systems open facilities in the region to be close to where their products will be tested and certified. The development of interim NUSTAR capabilities in central New York is currently in the planning phase and is not part of the Scope of Services associated with this RFQ.

1.4 DRONE INNOVATION ZONE

As part of the U-SAFE program, Central New York will also invest in and build one or more Drone Innovation Zones to seed and accelerate the growth of unmanned systems-focused business startups. Further, the region will establish a law and policy institute with Syracuse University dedicated to unmanned systems regulation and policy. Investments will be made in an autonomy program which will focus on research, development, testing, and deployment of autonomous aerial systems and eventually expand to include autonomous marine and ground systems.

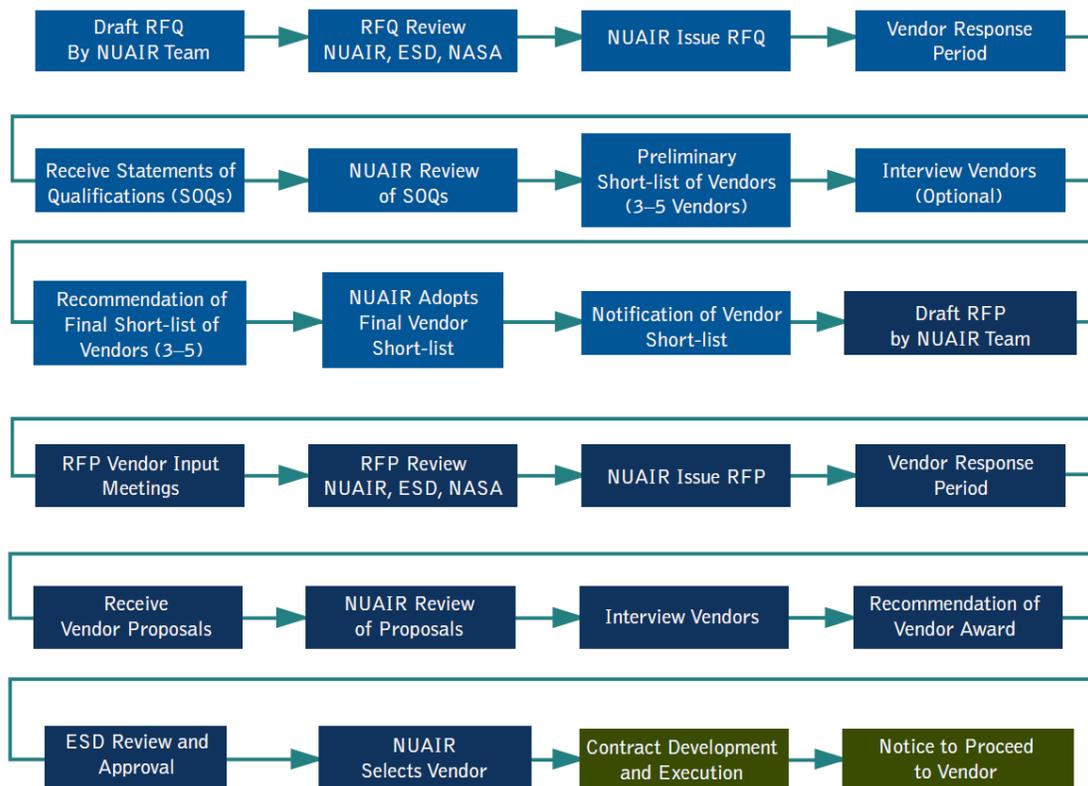
2.0 PROCUREMENT PROCESS AND GENERAL INFORMATION

2.1 PROCUREMENT PROCESS OVERVIEW

NUAIR will use a two-phase procurement process to select a Vendor(s) to deliver the Project. A Request for Qualifications (“RFQ”) will be issued as part of the first phase to solicit information, in the form of SOQs, that NUAIR will evaluate to determine which Vendors are the most highly qualified to successfully deliver the Project. NUAIR reserves the right to prequalify a number of vendors at their sole discretion. In general, prequalification lists tend to identify between 3 and 5 firms to participate in the RFP process. In the second phase, NUAIR will issue a Request for Proposals (“RFP”) for the Project to the short-listed Vendors. Only the short-listed Vendors will be eligible to submit proposals for the Project. NUAIR will award a contract for the Project to the most responsive and responsible Proposer to be determined as described in the RFP based on technical and cost considerations. Responsiveness and Responsibility will be determined by a comparative assessment of proposals against all source selection criteria defined in the RFP.

A graphic outlining the procurement process is provided below.

PROJECT U-SAFE UTM Corridor Development Procurement Process Overview



2.2 SOQ AND PROPOSAL SUBMISSIONS

All SOQs and Proposals must be received in hard copy format on the dates and times specified in the advertisement for RFQ and RFP documents, and must be delivered to the following:

Lawrence H. Brinker, Esq.
 President & CEO (Interim)
 NUAIR
 235 Harrison Street #34
 Syracuse, NY 13202
 Phone: 315-470-1835

lbrinker@nuair.org

Any SOQ that fails to meet the deadline or delivery requirement may be rejected without opening, consideration or evaluation. All SOQs will be time stamped upon delivery. Emailed SOQs will not be accepted.

One (1) bound copy of the documents are required (8.5”x11” format). Two electronic copies of the complete SOQ shall be provided in PDF format (one single PDF file for the SOQ) on two separate USB flash drives.

2.3 PRELIMINARY PROCUREMENT SCHEDULE

A summary of the anticipated procurement process schedule is provided below. This schedule is subject to revision by NUAIR.

Issue RFQ	October 13, 2017
SOQ Due Date	November 30, 2017
Evaluation of SOQs	November-December 2017
Notify Short-Listed Vendors	December 2017
Issue RFP	January 2018
Technical and Cost Proposals Due	February 2018
Evaluation of Proposals	February-March 2018
Potential Interviews	March 2018
Select Vendor	March 2018
Contract Development	April 2018
Anticipated Notice to Proceed	May 1, 2018

2.4 NUAIR PROJECT MANAGEMENT; EX PARTE COMMUNICATIONS

NUAIR will administer the execution of the project through procurement, design, construction and commissioning. Only written inquiries on the RFQ and RFP documents will be accepted. All inquiries and comments regarding the Project and the procurement thereof must be made by e-mail or letter to:

Lawrence H. Brinker, Esq.
President & CEO (Interim)
NUAIR
235 Harrison Street #34
Syracuse, NY 13202
Phone: 315-470-1835

lbrinker@nuair.org

During the Project procurement process, commencing with issuance of the RFQ and continuing until award of a contract for the Project (or cancellation of the procurement), no employee, member or agent of any Vendor shall have any ex parte communications regarding this procurement with any member of NUAIR or the State of New York, or any of their Vendors or consultants involved with the procurement, except for communications expressly permitted by NUAIR and this RFQ (or, subsequent to issuance of the RFP). Communications includes face-to-face, telephone, electronic-mail (e-mail) or formal written communication. The foregoing restriction shall not, however, preclude or restrict communications regarding matters unrelated to the Project where such need can be demonstrated to exist for ongoing business purposes.

Any Vendor engaging in such prohibited communications may be disqualified at the sole discretion of NUAIR.

2.5 QUESTIONS, CLARIFICATIONS AND ADDENDA

Questions and requests for clarification regarding the RFQ and RFP documents must be submitted in writing to NUAIR.

NUAIR will use the following guidelines when responding to questions and requests for clarification and issuing addenda:

- NUAIR will answer questions and requests for clarification in writing via email or written addendum.
- NUAIR will send an e-mail notification to the contact person for each Vendor as soon as each addendum or clarification is issued. The notification will include an electronic copy of the addendum or clarification.

NUAIR will not be responsible for or bound by (1) any oral communication or (2) any other information or contact that occurs outside the official communication process specified herein, unless confirmed in writing by NUAIR or its Designated Representative.

2.6 MAJOR PARTICIPANT

For the purpose of the RFQ and RFP documents, the term “Major Participant” means any of the following entities: all general partners or joint venture members of the Vendor; all individuals, persons, proprietorships, partnerships, limited liability partnerships, corporations, professional corporations, limited liability companies, business associations, or other legal entity however organized, holding (directly or indirectly) a 15% or greater interest in the Vendor and any Subcontractor(s) that will perform work valued at 10% or more of the overall project cost.

Vendors are advised that this procurement does not prohibit entities/subcontractors from being part of multiple prime Vendor responses.

2.7 ORGANIZATIONAL CONFLICTS OF INTEREST

Vendors are prohibited from receiving any advice or discussing any aspect relating to the Project or the procurement of the Project with any person or entity with an organizational conflict of interest with NUAIR. Such persons and entities are prohibited from participating in any Vendor organization relating to the Project.

For the purpose of this RFQ, “organizational conflict of interest” is defined as follows:

Organizational conflict of interest means that because of other activities or relationships with other persons, a person is unable or potentially unable to render impartial assistance or advice to the owner, or the person's objectivity in performing the contract work is or might be otherwise impaired, or a person has an unfair competitive advantage.

If, after award, an organizational conflict of interest is discovered, the Vendor must make an immediate and full written disclosure to NUAIR that includes a description of the action that the Vendor has taken or proposes to take to avoid or mitigate such conflicts. If an organizational conflict of interest is determined to exist, NUAIR may, at its discretion, cancel the contract for the Project. If the Vendor was aware of an organizational conflict of interest prior to the award of the contract and did not disclose the conflict to NUAIR, NUAIR may terminate the contract for default.

2.8 CHANGES TO ORGANIZATIONAL STRUCTURE

Major Participants identified in the SOQ may not be removed, replaced or added to without the written approval of NUAIR, or its designee. NUAIR, may revoke an awarded contract if any individual or Major Participant identified in the SOQ is removed, replaced or added to without

NUAIR's, or designee's, written approval. To qualify for NUAIR, or designee's, approval, the written request must document that the proposed removal, replacement or addition will be equal to or better than the individual or firm provided in the SOQ. NUAIR, or its designee, will use the criteria specified in this RFQ to evaluate all requests. Requests for removals, replacements and additions must be submitted in writing to NUAIR. Changes to the Proposer's organization will be justification for NUAIR to revoke a previous determination pre-qualifying a Proposer.

2.9 MINORITY AND WOMAN OWNED BUSINESS ENTERPRISES AND MINORITY WORKFORCE REQUIREMENTS

The successful Vendor will be required to fully comply with NUAIR/NYS MWBE policies and minority workforce requirements. Pursuant to New York State Executive Law Article 15-A, the NYS Department of Labor (DOL) recognizes its obligation under the law to promote opportunities for maximum feasible participation of certified minority- and women-owned business enterprises and the employment of minority group members and women in the performance of state funded contracts.

For purposes of this procurement, an overall goal of 30% for Minority and Women-Owned Business Enterprises (MWBE) participation has been established; 15% for Minority-Owned Business Enterprises ("MBE") participation, and 15% for Women-Owned Business Enterprises ("WBE") participation. A Vendor must document good faith efforts to provide meaningful participation by MWBEs as subcontractors or suppliers in the performance of this project, and

In submitting a response to the RFQ and RFP documents, the Vendor shall be required to specifically discuss how it will comply with the MBE/WBE goals for this project. Responses solely indicating that a good faith effort will be implemented will not be considered adequate.

2.10 SMALL BUSINESS PARTICIPATION

Vendor will make a good faith effort to divide some subcontracted work into smaller pieces to encourage small business participation. Vendor will record justification for failure to divide work into smaller pieces and make this justification available to the owner or owner's representatives. Justification will include prohibitive costs, efficiencies or other lack of responsiveness from small businesses. Vendor will show evidence of having solicited local and regional subcontractors for opportunities as part of their due diligence. For the purpose of this Section and consistent with the definition from the Office of the New York State Comptroller, a Small Business is a business which is a resident of New York State, independently owned and operated, not dominant in its field and which employs one hundred or fewer people.

2.11 RESERVED RIGHTS OF NUAIR

NUAIR reserves to itself all rights available to it under applicable law, including without limitation, the following, with or without cause and with or without notice:

1. Withdraw or cancel the RFQ and RFP documents in whole or in part at any time prior to the execution by NUAIR of a contract, without incurring any cost obligations or liabilities.
2. Issue a new RFQ or RFP.

3. Accept or reject any and all submittals.
4. Modify dates set or projected in the RFQ and RFP.
5. Terminate evaluations of submittals received.
6. Waive any informalities, irregularities or omissions in a SOQ or proposal received.
7. Issue addenda to the RFQ and RFP document.
8. NUAIR makes no guarantee that a Request for Proposals (RFP) will be issued for this Project or a contract will be awarded.

SOQs and proposals received will become the property of NUAIR. NUAIR assumes no obligations, responsibilities, and liabilities, fiscal or otherwise, to reimburse all or part of the costs incurred or alleged to have been incurred by parties responding to the RFQ and RFP documents. All such costs shall be borne solely by the Vendor. In no event shall NUAIR be bound by, or liable for, any obligations with respect to the project until such time (if at all) as a contract, in form and substance satisfactory to NUAIR, has been authorized and executed by NUAIR and, then, only to the extent set forth therein. NUAIR makes no representations that the contract will be awarded based on the requirements of the RFQ and RFP documents.

2.12 AWARD TYPE AND FUNDING AVAILABILITY

Award of one (1) cooperative agreement for UTM Corridor development, system planning, design and integration services is anticipated. The objective of a cooperative agreement is to provide specific potential public benefits to the State of New York. The period of performance is expected to be from the effective date of award until December 31, 2022. NUAIR expects to fund this project through 2022, up to the following maximum level.

2018-2022 Total \$30 Million

Under the cooperative agreement, NUAIR expects the Vendor to contribute financial and other resources in an amount acceptable to NUAIR to supplement funding and implementation of the project. Continuation of the cooperative agreement in subsequent years will be contingent on the availability of funding, progress of the project, and continued relevance to New York State UTM programs. NUAIR intends to incrementally fund the cooperative agreement, and all funding will be subject to the availability of funds.

3.0 CONTENT OF STATEMENT OF QUALIFICATIONS

3.1 GENERAL

This section describes specific information that must be included in the SOQ. SOQs must follow the outline of this Section 3.0. Vendors shall provide brief, concise information that addresses the requirements of the Project. The SOQ shall include all of the information requested in the specific instructions. Failure to include all information requested may adversely affect the evaluation. A SOQ that merely reiterates or promises to accomplish the requirements of the RFQ will be considered unacceptable. A SOQ that is orderly and sufficiently documented will be easy for NUAIR to understand and will enable NUAIR to perform a thorough and fair evaluation. **Vendors should limit their submittals to the information required by the RFQ and other information regarding qualifications and experience. Cost information shall not be submitted in the SOQ.**

The SOQ shall be prepared on standard 8.5 x 11 inch paper and shall be in a legible font size (10 or larger). Type size for graphics, charts, diagrams and tables, shall be of an appropriate font and size for the application, and must be clearly readable without magnification assistance to the normal eye. Page size for charts and figures may be up to 11" x 17" if necessary. Text lines will be no less than single-space. All pages of each SOQ shall be appropriately numbered, and identified with the project name. For ease of reference, page numbering by section (i.e., 1-1, 2-1.1, etc.) and tabs/section dividers are required.

Vendors are advised submit enough information to enable NUAIR to fully ascertain each Vendor's capability to perform all of the requirements contemplated by this RFQ. The information submitted with each RFQ should be complete and concise, but not overly elaborate. Any submitted materials not required by this RFP (such as company brochures) shall be relegated to appendices. Excessive reliance on promotional brochures is discouraged.

Some of the information requested in the RFQ is for informational purposes only, while other information will be used in the qualitative analysis of the SOQ's. NUAIR will initially review SOQ's on a pass/fail basis. The purpose of this initial review is for NUAIR to determine whether the SOQ, on its face, is responsive to the RFQ. An SOQ will be, on its face, responsive to this RFQ if it appears to include all of the components of information required by the RFQ in the manner required by the RFQ. This initial pass/fail review does not include any qualitative assessment as to the substance of the information submitted. Those SOQ's that pass the pass/fail review will then be reviewed on a qualitative basis according to the criteria specified in this RFQ.

Documents submitted pursuant to the RFQ may be subject to the New York State Freedom of Information Act. If the Vendor submits information in its SOQ that it believes to be confidential business information that it wishes to protect from disclosure, the Vendor shall mark such information. Documents provided by the Proposer marked "Trade Secret", "Confidential" or "Proprietary" and any financial records provided by the Vendor shall be submitted in a separate sealed envelope clearly identified, labeled and addressed in the same manner specified for SOQ.

NUAIR expressly acknowledges that the documents marked Trade Secret, Confidential or Proprietary constitutes trade secrets and will not be deemed public records. NUAIR agrees to safeguard the documents, and all information contained therein, against disclosure, including disclosure of Subcontractor documents to the Proposer and other Subcontractors to the fullest extent permitted by law. However, in the event of arbitration or litigation, the documents shall be subject to discovery, NUAIR assumes no responsibility for safeguarding the documents unless the Vendor has obtained an appropriate protective order issued by the arbitrator or the court.

3.2 Quantities

One (1) bound copy of the SOQ is required (8.5"x11" format). Two electronic copies of the complete SOQ shall be provided in PDF format (one single PDF file for the SOQ) on two separate USB flash drives.

The outside of the sealed SOQ packages must be clearly identified and labeled as follows:

1. Return address: Vendor's name, contact person's name, mailing address
2. Date of submittal
3. Contents labeled as "Project U-SAFE" "New York UTM Corridor Development"; "Statement of Qualifications"

3.3 SOQ FORMAT/ORGANIZATION

The following describes the information that is required and how it is to be organized in the SOQ. Failure to submit the either information requested or in the format outlined may result in an SOQ being disqualified for further consideration.

SOQ COVER

The front cover of each SOQ must be labeled with "Project U-SAFE" "New York UTM Corridor Development"; "Statement of Qualifications"; date of submittal and the name of the Vendor with which NUAIR would potentially enter into a contract with.

COVER LETTER

Provide a Cover Letter stating the business name, address, business type (e.g., corporation, partnership, joint venture) and roles of the Vendor and each Major Participant. Identify one contact person and his or her address, telephone and fax numbers, and e-mail address. This person shall be the single point of contact on behalf of the Vendor organization, responsible for correspondence to and from the organization and NUAIR. NUAIR will send all Project-related communications to this contact person. Authorized representatives of the Vendor organization must sign the letter. If the Vendor is a joint venture, the joint venture members must sign the letter.

TABLE OF CONTENTS

The SOQ shall contain a detailed table of contents. The Table of Contents will identify major areas, paragraphs and subparagraphs by number and title as well as by page number locations. Tab indexing will be used to identify Sections as appropriate.

SECTION 1 – PROJECT TEAM INFORMATION

- Provide a narrative summary of the capability and capacity of each Principal/Major Participant on the project team. Information shall include the company size, services provided, geographic location(s), number of employees and other information that would be considered important to adequately describe each company on the project team.
- Provide a discussion addressing the proposed organization and the roles and responsibilities of the various sub-Vendors for planning, design, construction and operation as applicable.
- Provide an organizational chart(s) showing the team organizational structure with lines identifying participants who are responsible for major functions to be performed and their reporting relationships for implementation of the Project. The chart(s) must show the functional structure of the organization down to the discipline leader and must identify Key Personnel by name. Identify the Vendor and all Major Participants in the chart(s). Identify the critical support elements and relationships of Project management, Project administration, executive management, quality management, and subcontractor administration. For each organizational chart, provide a brief, written description of significant functional relationships among participants and how the proposed organization will function as an integrated implementation team.
- Provide the names, resumes, and levels of responsibility of the principal managers and technical personnel who will be directly responsible for the day-to-day design implementation of the project. Provide qualifications of key project personnel including name and project assignment, and firm association.

- Demonstrate that all lead personnel are registered and/or certified in their discipline and have experience and technical competence in assigned roles on projects of similar complexity, size and scope. Indicate whether each individual has had a significant part in any of the project examples cited.
- Identify where the Project will be administered from and the location of the proposed Project Manager. Indicate the team’s ability to coordinate all portions of the Project. Describe how the geographical setup of the primary members will achieve successful delivery of the Project.
- Description of how, if any, the Principal/Major Participants have worked together in the past and the experience such Principal/Major Participants have in projects of comparable size and scope.
- Resumes of Key Personnel shall be provided as Appendix A – Resumes of Key Personnel to the SOQ. Only one individual per position is required unless otherwise specified.

Include the following items on each resume:

- A. Relevant licensing and registration.
- B. Years of experience performing similar work.
- C. Length of employment with current employer.
- D. Brief description of previous projects completed and role in completing the project.

In addition to resumes, provide the following information for each Key Personnel:

- Estimated percent of time committed to the Project during various phases of project implementation.

The qualifications and experience of Key Personnel will be reviewed as part of the qualitative assessment of the SOQ. Key Personnel will be evaluated based on relevant education, training, certification, and experience.

SECTION 2 – TEAM EXPERIENCE AND QUALIFICATIONS

The information required by this section will be used in the qualitative assessment of the SOQ. NUAIR will evaluate the capabilities of the Vendor organization to effectively deliver the Project.

- Vendor shall describe the team’s capabilities and experience in air traffic

management systems, air traffic surveillance systems, and large-scale system-wide information management.

- Vendor shall describe the team’s capabilities and experience with performing comparable aerospace RDT&E and system integration functions.
- Vendor shall describe the team’s participation in, and experience with development of consensus-based aeronautical standards.
- Vendor shall describe other technologies and capabilities (e.g., capabilities in other fields) which the team could offer for advanced development in New York.
- Related projects, experience, and capabilities should extend back at least five years but not more than 10 years. Team experience in these areas should be related to UTM requirements and capability to apply experience in these areas to manage UTM evolution through 2022.
- Vendor shall describe prior experience in UTM research, development, testing, and technology demonstrations. This experience may include, but not limited to, Vendor (or team) shall specifically describe their experience in building and deploying persistent and/or portable UTM system, NASA led UTM technology capability level (TCL) tests, FAA pathfinders, security agency needs, etc.
- Vendor shall demonstrate thorough understanding of the barriers to operating multiple vehicles operating beyond visual line of sight, their prior experience in addressing those barriers, and how that experience will be leveraged to build, maintain, and operate UTM corridor to benefit NY regional development
- Vendor shall describe experience with developing air traffic management, small drones/unmanned aircraft vehicle development and their use cases, sense and avoid technologies (vehicle and/or ground based), communications capability, and avionics.
- Vendor shall describe experience with public outreach for the purpose of acceptance of UAS in community, and of how they will create positive image of drones/unmanned aircraft systems and their use cases where the UTM corridor will be implemented.
- Describe the experiences for the prime Vendor on at least 5 projects of similar nature, size and complexity that the Vendor has managed, designed, constructed and/or operated that is complete or substantially completed. For projects in which several of the proposed participants were involved, the

Vendor may provide a single project description. Representative projects shall have been substantially completed in the last 10 years.

Each project description must include the following information:

1. Name of the project, contract number, the owner's contact information (Owner, Construction Manager or Engineer name, phone number, e-mail address), and project number. If the owner's contact is no longer with the owner, provide an alternative contact at the agency that is familiar with the project. The alternative contact must have played a leadership role for the owner during the project;
 2. Dates of design, construction, management, operation and/or warranty periods;
 3. A narrative describing the project;
 4. Description of the work or services provided and percentage of the overall project actually performed by (each of) the Principal/Major Participant(s);
 5. Description of scheduled completion deadlines and actual completion dates;
 6. Description of how, if any, the Principal/Major Participants have worked together in the past and the experience such Principal/Major Participants have in projects of comparable size;
 7. Initial construction price and final construction contract price for the project, including the quantity and dollar value of contract modifications and claims, and an explanation of the causes for construction contract change(s), whether upward or downward; and
 8. Indicate if the project was executed via design-build or conventional implementation.
- The Vendor shall provide the same information described above for all "Major Participants" as defined in Section 1 for three (3) additional projects per Major Participant.
 - Provide up to three (3) letters of recommendation for the primary Vendor (not Subcontractors) from clients for projects of similar size and complexity.
 - Discuss specifically how the Vendor will comply the MBE/WBE goals and small business participation for this project during both design and construction. Responses solely indicating that a good faith effort will be implemented will not be considered adequate.

NUAIR may use all data provided by the Vendor in this SOQ and data obtained from other sources, to include, but not limited to, state-wide databases, in the assessment of past performance. Past performance information on contracts not listed by the Vendor, or that of planned Subcontractors, may also be evaluated. NUAIR may contact references other than those identified by the Vendor and information received may be used in the evaluation of the Vendor's past performance. While NUAIR may elect to consider data obtained from other sources, the burden of providing current, accurate, and complete past performance information rests with the Vendor.

SECTION 3 – PROJECT MANAGEMENT APPROACH

The information required by this section will be used in the qualitative assessment of the SOQ. Provide a narrative description of your approach with regard to the following:

- Provide a narrative of how the Vendor would intend to manage the project during design, construction and operation. Indicate where key staff would be located during different phases of the project.
- Describe process for interacting with NUAIR's team to ensure conformance with the design intent for the project.
- Describe process for cost control, managing the project budget and dealing with out of scope work items.
- Describe capabilities for project scheduling. Include typical software programs utilized and experience of personnel in these programs. Discuss briefly the plan for scheduling of this project including include tracking and updates. (a sample schedule is not desired.)
- Describe process for maintaining quality during design and construction.
- Describe capabilities and experience with operating similar facilities or infrastructure.
- Describe understanding of the challenges involved in commercializing UTM and the outcomes which could be anticipated by 2022.
- Provide a narrative of how Vendor would intend to provide UTM Corridor system integration services and manage the Project through 2022.
- Describe major risks and contingencies and your approach to mitigating those risks.
- Describe resources which will be needed to achieve anticipated 2022 outcomes.

SECTION 4 – OTHER INFORMATION

Respondents may use this section of the response to provide information to assist NUAIR in the development of the New York UTM Corridor. This may include, but not be limited to the following:

- Special features and functional requirements
- Specialized equipment needs and considerations
- Additional partners, industry, standards developing organization (SDO) collaborations
- Identify future partners, industry, or SDO collaborations that you believe may enhance development of the facility
- Provide other input that NUAIR may want to consider New York UTM Corridor development.

The SOQ shall contain the following Appendices:

APPENDIX A – RESUMES OF KEY PERSONNEL (*see previously described requirements*)

APPENDIX B – LEGAL AND FINANCIAL INFORMATION

1. Acknowledgment of Clarifications and Addenda

Identify all clarifications and addenda received by number and date.

2. Legal Structure

In order to demonstrate that Proposer's organization, legal structure, team members, and history demonstrate an ability to remain stable and viable for the duration of the Project, and be contractually bound to Department, Vendors shall address the following and submit the following:

- A. Legal structure of the Proposer and its organization. If the Proposer organization has already been formed, provide complete copies of the organizational documents that allow, or would allow by the time of Contract award, the Principal/Major Participants to conduct business in the State of New York. If the Proposer organization has not yet been formed, provide a brief description of the proposed legal structure or draft copies of the underlying agreements. In the event that final agreements between Principal/Major Participants have not been finalized at the time of the SOQ submittal, Principal/Major Participants shall submit letters of agreement signed by an authorized officer of each Principal/Major Participant noting the type of relationship to be entered into prior to the Proposal (i.e., joint venture, subcontract), and the commitment of the parties to finalize the organizational documents prior to the Proposal submittal. If Proposer is a partnership, joint venture, or other association, the SOQ must identify the percentage equity interest of each member;
- B. If the Proposer is a partnership, limited partnership, joint venture, or other association, all members of the Proposer must agree to be fully liable for the performance under the Contract.

3. Required Licenses

Evidence that the Proposer and all Major Participants have, or at the time of Contract award will have, all licenses, registrations, and credentials required to design and construct the Project, including date(s) obtained or anticipated to be obtained, type, number, classification, issuing agency, and expiration date. Such information shall include any information on the revocation or suspension of any license, credential, or registration, and to provide specific details including date(s), reason(s), for revocation

or suspension, whether same was reinstated, and any conditions thereto. At the time the Contract is awarded, the Vendor shall be properly licensed in accordance with the laws of the State of New York. The first payment for work or material under any contract shall not be made unless and until the records of the State License Board indicate that the Vendor was properly licensed at the time the contract was awarded. Any Vendor or design professional not so licensed shall be subject to all legal penalties imposed by law, including, but not limited to, any appropriate disciplinary action. Failure of the Vendor to obtain proper and adequate licensing for an award of a contract shall constitute a failure to execute the Contract and shall result in the forfeiture of the security of the Proposer during the Phase 2 RFP process.

4. Financial Capacity and Bonds

Vendor shall provide a copy of its latest financial statement, and quarterly update, if available. If the Vendor is a joint-venture, provide similar information for each member of the joint-venture. Disclose any unpaid judgments in excess of \$1 million. Disclose any disputed or unadjudicated claims in excess of \$1 million. If the Vendor is not a public company, this financial information will be held in confidence, and it will be examined only by designated representatives of the selection team.

It is currently anticipated that the selected Proposer will be required to submit payment and performance bonds upon execution of the Contract, each in the amount of 100 percent of the contract price. The SOQ will be required to demonstrate their capacity to obtain the required bonds. SOQ shall include a notarized statement from an admitted surety insurer authorized to issue bonds in the State of New York that states:

- Proposer's current bonding capacity is sufficient for the Project and referenced payment and performance bonds; and
- Proposer's current available bonding capacity.

Letters indicating "unlimited" bonding capability are not acceptable. The surety or insurance company providing such letter must be authorized to do business in the State of New York with an A.M. Best Co. "Best's Rating" of A- or better and Class VIII or better.

5. Insurance Requirements

Proposers and Major Participants shall provide insurance certifications identifying a certificate of insurance evidencing current policies of, including but not limited to, Commercial General Liability, Errors and Omissions, Auto Liability, Workers' Compensation/ Employers Liability, Pollution Liability, and Professional Liability insurance. Policy limit requirements will be specified in the RFP.

6. Guarantees

Vendors are advised that if the Vendor is a newly formed entity or a limited liability entity, or if it fails to meet the minimum financial requirements stated in this RFQ and/or the RFP, NUAIR may require the Proposer to provide a guarantee covering performance and financial obligations by a separate entity acceptable to NUAIR. Proposers shall also note that NUAIR may, in its discretion based upon the review of the information provided, so specify that an acceptable guarantor is required as a condition of a determination of pre-qualification. Requirements for additional financial security will be included in the RFP.

7. Damages and Termination

For the Vendor, each Major Participant, and any affiliate of the Vendor or a Major Participant (including the firm's parent company, subsidiary companies, and any other subsidiary or affiliate of the firm's parent company) whose experience is cited as the basis for the firm's qualifications:

- A. Describe any project that resulted in assessment of liquidated damages, stipulated damages or monetary deductions for not meeting intermediate and completion deadlines against the firm within the last five years. Describe the causes of the delays and the amounts assessed. Describe any outstanding damage claims for projects in which any firm was involved within the last five years.
- B. Describe the conditions surrounding any contract (or portion thereof) entered into by the firm that has been terminated for cause, or which required completion by another party, within the last five years. Describe the reasons for termination and the amounts involved.
- C. Describe any debarment or suspension from performing work for the federal government, any state or local government, or any foreign governmental entity, against the firm.

For each description, identify the project owner's representative and current phone number. Indicate "None" to any subsection above that does not apply.

4.0 RFQ EVALUATION PROCESS

4.1 INITIAL SOQ EVALUATION

NUAIR will initially review the SOQs for responsiveness to the requirements of the RFQ. The information in the SOQ will then be measured against the evaluation criteria stated in Section 4.3. Each SOQ will initially be reviewed on a pass/fail basis for:

1. Minor informalities, irregularities, and apparent clerical mistakes which are unrelated to the substantive content of the SOQ;
2. The SOQ's conformance to the RFQ instructions regarding organization and format; and
3. The responsiveness of the Proposer to the requirements set forth in the RFQ. Proposers submitting SOQs not responsive to this RFQ may be excluded from further consideration. NUAIR may also exclude from consideration any SOQ that contains a material misrepresentation

The review team will consist of a combination of NUAIR staff, select Board members and other project stakeholders in the CNY Project U-SAFE initiative.

4.2 INTERVIEW

NUAIR reserves the right to conduct interviews with potential Vendors prior to development of a short list. NUAIR may conduct these interviews during its evaluation of the overall SOQ submittal process. If elected by NUAIR, NUAIR will determine the schedule for interviews following receipt of the SOQs.

4.3 SOQ EVALUATION

NUAIR will evaluate all responsive SOQs and measure each Vendor's response against the project goals and selection criteria set forth in this RFQ. NUAIR will use the following criteria:

A. Project Team and Key Personnel Experience

- Team member experience and qualifications
- Key management/Staff experience, capabilities and functions on similar projects
- Previous experience of team working together
- Ability to respond to project issues in a timely manner
- Demonstrated knowledge of local conditions and requirements
- Proposed time commitment of key personnel
- Team organizational breadth of resources and capacity
- Financial and bonding capacity
- MWBE Compliance
- Small Business Participation

B. Previous Experience

- Experience in managing, designing, constructing, owning and/or operating projects of the size and complexity of this Project
- A record of completing contracts on time and within the fixed price
- A record of managing contracts to minimize delays, claims, dispute proceedings, litigation, and arbitration
- Reference checks

C. Project Management Approach

- Quality of responses to items listed in requirements for Section 3 of SOQ.

D. Overall Compliance with RFP Instructions and Requirements

- *Note: Failure to comply with the requirements of the RFQ may result in an SOQ being disqualified.*

4.4 DETERMINING SHORT-LISTED VENDORS

NUAIR will determine the most responsive and responsible vendors. NUAIR reserves the right to prequalify a number of vendors at their sole discretion. In general, prequalification lists tend to identify between 3 and 5 firms to participate in the RFP process. The review team will provide a recommendation of award to the NUAIR Board that will summarize the basis for the selection of the short-listed vendors. The NUAIR Board will have ultimate responsibility for making the determination of short-listed Vendors based on the information received.

NUAIR reserves the right, in its sole discretion, to cancel the RFQ, issue a new request for qualifications, reject any or all SOQs, seek or obtain data from any source that has the potential to improve the understanding and evaluation of the responses to this RFQ, seek and receive clarifications to an SOQ and waive any deficiencies, irregularities or technicalities in considering and evaluating the SOQs.

The RFQ does not commit NUAIR to enter into a contract or proceed with the procurement of the Project. NUAIR assumes no obligations, responsibilities and liabilities, fiscal or otherwise, to reimburse all or part of the costs incurred by the parties responding to this RFQ. All such costs shall be borne solely by each Vendor. In addition, NUAIR assumes no obligations, responsibilities and liabilities, fiscal or otherwise, to reimburse all or part of the costs incurred by the parties if NUAIR elects to not issue an RFP for the Project.

4.5 NOTIFICATION OF SHORT LISTING

Upon completion of the evaluation and short listing process, NUAIR will publish the list of short-listed Vendors. If requested, NUAIR will conduct debriefs with Vendors that were not short-listed to provide additional information as appropriate.

5.0 PHASE 2 RFP PROCUREMENT

This section describes the second phase of the Project procurement process, including a summary of certain anticipated RFP requirements. NUAIR reserves the right to make changes to the following, and the short-listed Vendors must only rely on the actual RFP when and if it is issued.

5.1 REQUEST FOR PROPOSALS

The Vendors remaining on the short list following Phase 1 of the procurement process will be eligible to move to Phase 2 and receive an RFP. While NUAIR may make the RFP available to the public for informational purposes, only short-listed Vendors will be allowed to submit a response to the RFP.

5.2 RFP CONTENT

5.2.1 RFP STRUCTURE

The RFP will be structured as follows:

- A. Instructions to Proposers
- B. Contract Documents
 - Contract Terms and Conditions
 - Project Specific Requirements
 - Specifications and Performance Parameters
 - Preliminary Drawings (as Applicable)
- C. Reference Information Documents (RID)

5.2.2 RFP INFORMATION

The RFP will also include the following information:

- A. Maximum time allowable for system design and construction.
- B. Requirements for a cost loaded, resource loaded Critical Path Method (CPM) schedule.
- C. Selection Criteria

5.3 PRE-PROPOSAL MEETING

NUAIR will offer each short-listed Proposer the opportunity to meet before the proposal due date to discuss the Project and the RFP process, as well as separate meetings to discuss any alternative technical concepts being developed. In any such meeting, NUAIR will meet with only one Proposer at a time. Proposers would not be required to accept the meeting offers.

5.4 PROPOSALS SUBMITTED IN RESPONSE TO THE RFP

Short-listed Proposers that choose to continue in the procurement process must submit a two-part proposal. One part is the technical proposal. The second part is the price proposal. The RFP will specifically define formats for the proposal packaging and all proposal contents.

5.5 PROPOSAL EVALUATIONS

NUAIR has determined that award of the Project will be to the most responsive and responsible Vendor, with the ability to deliver the Project. NUAIR will award firm the contract to the Vendor whose proposal contains the combination of those criteria described in the RFP. The preferred Vendor will be determined by a comparative assessment of proposals against all selection criteria in the RFP including technical and cost considerations. The review team will consist of a combination of NUAIR staff, select NUAIR board members and other project stakeholders in the CNY Project U-SAFE initiative as determined by the NUAIR Board of Directors. The review team will provide a recommendation of award to the NUAIR Board that will summarize the basis for the selection of the preferred vendor. The NUAIR Board will have ultimate responsibility for making the Vendor selection based on the information received as well as authorization to enter into a formal contract with the selected Vendor. While NUAIR will have ongoing involvement from ESD during the procurement process, prior to formal award of any contract to a Vendor, NUAIR will consult with ESD to obtain concurrence with the intended contract award.

5.6 STIPENDS

NUAIR will not award any stipends for submitting SOQs or to short-listed Vendors that are not selected.

5.7 CONTRACT AWARD AND EXECUTION

NUAIR may enter into contract development with the most responsive and responsible Vendor as identified in the selection process. If NUAIR is unable to enter into a contract with the preferred Vendor, NUAIR may elect to enter into contract development with other Vendors responding to the RFP, issue a new RFP or cancel the procurement process in its entirety.

If requested, NUAIR will conduct debriefs with Vendors who submitted proposals that were not selected to provide additional information as appropriate.

6.0 NEW YORK UTM CORRIDOR PROJECT DEFINITION

6.1 UTM CORRIDOR GEOGRAPHY

The New York UTM Corridor approximate boundaries are intended to extend from west to east—from the Syracuse metropolitan area (Syracuse Hancock International Airport) to the Utica-Rome metropolitan area (Griffiss International Airport). Figure 1 depicts the approximate boundaries of the proposed New York UTM Corridor.

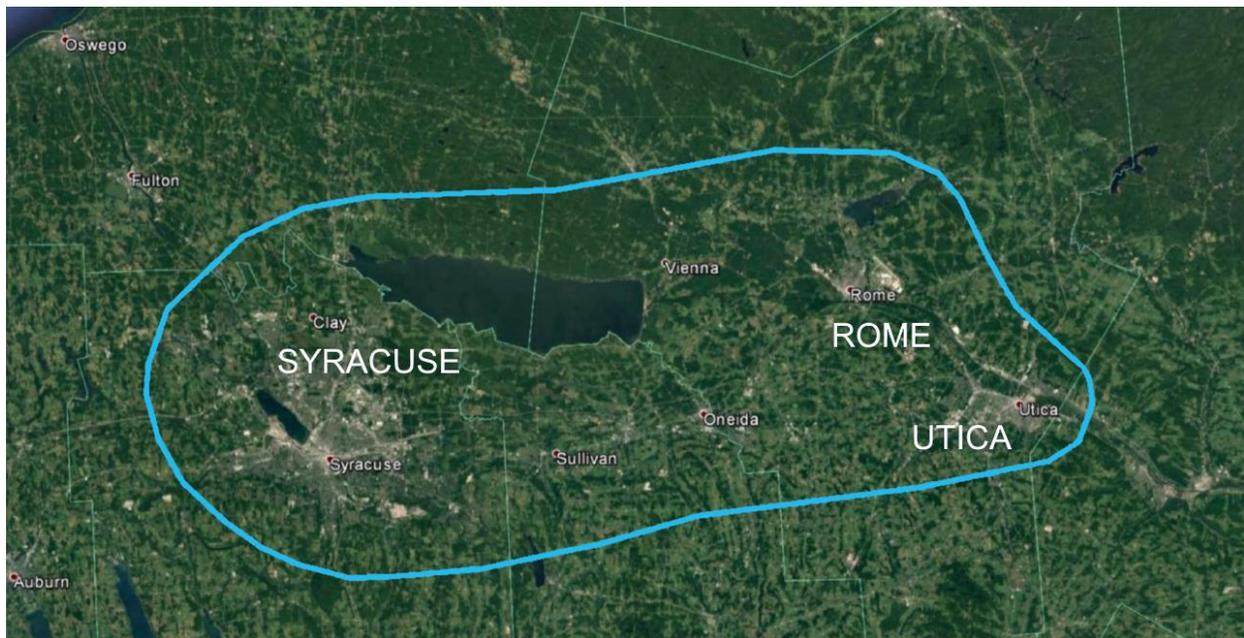


Figure 1 New York UTM Corridor Geography

6.2 THE PROBLEM ADDRESSED BY THE UTM CORRIDOR

The problem is how to enable multiple-UAS beyond-visual-line-of-sight (BVLOS) operations in low-altitude airspace. Low altitude airspace – or VLL (Very Low Level) airspace – is uncontrolled by the FAA. UTM meets a need to enable a new “air traffic management” ecosystem for uncontrolled airspace. UTM addresses a critical gap associated with today’s lack of support for uncontrolled operations in VLL airspace.

In the United States, FAA retains regulatory authority over VLL airspace. However, air traffic controllers are not required to actively “control” every UAS in uncontrolled airspace. While retaining FAA regulatory authority, UTM utilizes industry’s ability to supply services for VLL airspace operations which do not currently exist.

- FAA, as regulator, maintains regulatory and operational authority for airspace and traffic operations in VLL airspace
- UTM is used by FAA to issue directives, constraints, and airspace configurations

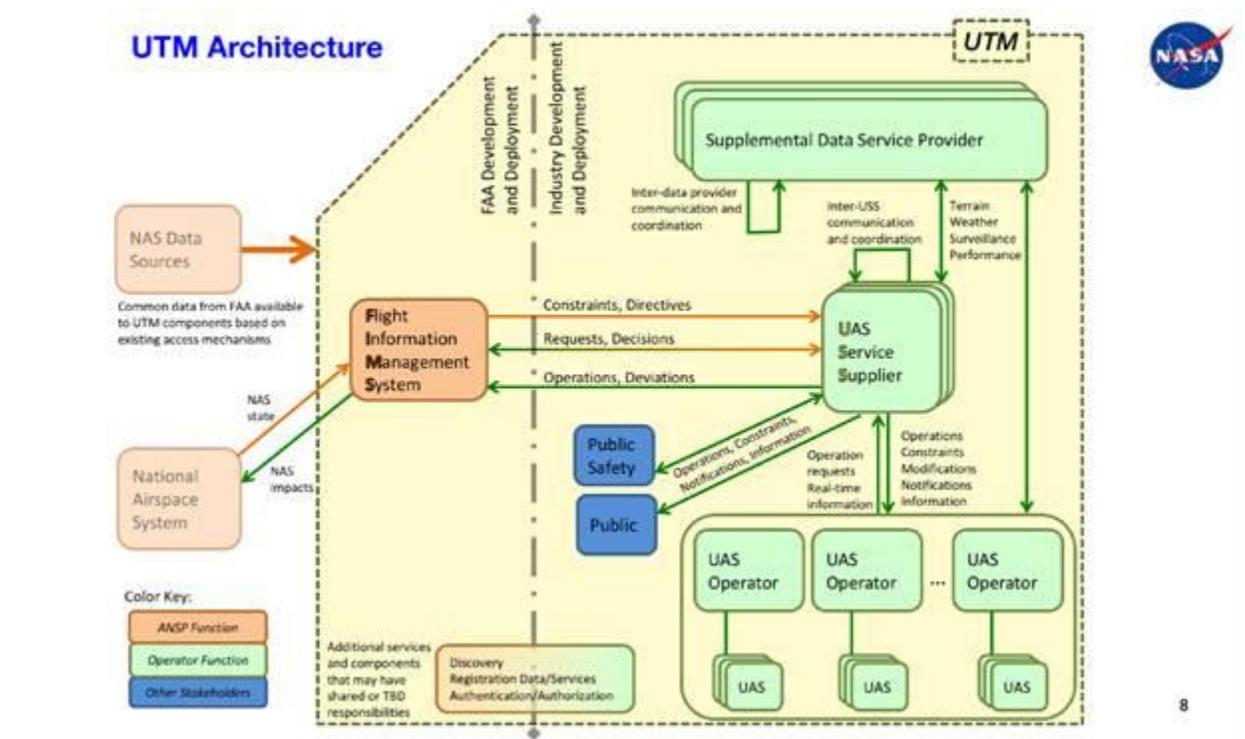
- UTM as now proposed involves four separate roles and accompanying responsibilities: Regulator (FAA), UAS Operator, UAS Service Supplier (USS), and Supplemental Data Service Provider (SDSP)
- FAA, through UTM, gains on-demand access to airspace users and can maintain situation awareness in VLL airspace
- FAA Air Traffic can institute operational constraints for safety reasons anytime

6.3 UTM PRINCIPLES

A key UTM principle is safe integration of UAS operating in uncontrolled airspace without burdening current air traffic management. Users operate in airspace volumes as specified in authorizations, which are issued based on type of operation, as well as known operator and vehicle performance:

- UAS stay clear of each other
- UAS and manned aircraft stay clear of each other
- UAS operator has complete awareness of airspace and other constraints
- Public safety UAS operations have priority over other UAS

Current UTM architecture proposed by NASA is shown in the following diagram:



6.4 KEY UTM UAS-RELATED SERVICES

The successful vendor will identify the effectiveness and interoperability of infrastructure, technologies, and information architecture, to support separation, communication, navigation, and airspace management in complex (suburban and near airports) operational environments.

- Authorization/Identification/Authentication
- Airspace configuration and static and dynamic geofence definitions
- Track and locate aircraft (including UAS) in VLL airspace
- Secure and reliable communications and control (spectrum and cybersecurity)
- Weather and wind prediction and sensing
- Conflict avoidance and safe deconfliction of VLL air traffic collision threats
- Demand/capacity management
- Large-scale emergency response and contingency management

6.5 OBJECTIVES FOR UTM CORRIDOR SYSTEMS INTEGRATION

In issuing this RFQ for New York UTM Corridor systems integration, NUAIR is seeking responses from qualified systems integration organizations with established, world-leading, backgrounds in development of air traffic management systems, and with experience in UAS and leading-edge

aerospace and air traffic management engineering research and standards development. Requirements include demonstrated current capability for UAS research and development, together with experience in development of consensus standards for Very Low Level (VLL) operations, UAS identification, notification and authorization, detect and avoid, geofencing, and control and communications. The measure of success for the New York UTM Corridor project is development of a strong UTM RDT&E cluster in New York, building on a the Griffiss UAS Test Site UTM TCL1 and TCL2 NASA “National Campaigns” and evolving over the life of the project toward New York leadership in collaborative development of globally-accepted UTM air traffic management and operational standards and recommended practices.

Partnerships between ATM/UTM systems integrators and sensor/surveillance manufacturers are encouraged

NUAIR expects the UTM Corridor to address a number major safety, technical, and operational challenges in the Corridor Project’s duration through 2022. Among these are:

- UAS ability to operate safely over people and in populated areas.
- UAS ability to safely navigate and avoid collisions with other aircraft and other hazards.
- UAS ability to be identified, accurately located, and to follow recognized and accepted UTM and air traffic rules-of-the-road.
- UAS ability to take off, land, and navigate the first and last 50 feet of flight.
- UAS ability to reliably and securely communicate air vehicle status, intent, and performance capability.
- UAS ability to operate safely beyond line-of-sight of the pilot or operator, leading toward autonomous and cooperative beyond line-of-sight operation.
- FAA aircraft and equipment certification.
- DOT air carrier certification for commercial fleet operations with highly automated unmanned aircraft systems.
- System capability to collect and apply operational performance data to enable UTM concept validation and operational performance improvement.

UTM evolution will depend in great degree on development of consensus-based standards. The successful UTM Corridor systems integrator is expected to participate in and help drive development of such standards.

Participation in several key areas will be a plus:

- FAA Low Altitude Authorization and Notification Capability (LAANC)
- International Civil Aviation Organization (ICAO)
- European Organization for Civil Aviation Equipment (EUROCAE)

- ANSI UAS Standards Collaborative (UASSC)
- FAA-NASA UTM Pilot Project
- NASA UTM Development Through TCL4

6.6 PHASE 1 UTM CORRIDOR DEVELOPMENT SUMMARY

New York State provided funding to support the initial efforts to develop a portion of the proposed UTM corridor in 2016. These funds were utilized to implement a ground based surveillance system consisting of three (3) radar sites installed at the following locations:

- Oneida County Airport, Rome, New York
- Madison County Office Bldg., Wampsville, New York
- Oneida-Madison BOCES, Verona, New York.

The equipment for the first three sites is being provided by Gryphon Sensors and is currently being installed and tested. The Vendor procured under this project will be allowed have access to all data gathered by the equipment installed as part of the Phase 1 corridor development and shall fully integrate this data into the larger corridor development.

6.7 PRELIMINARY VENDOR SCOPE OF SERVICES

The services identified below are anticipated to be provided by the Vendor as part of UTM corridor development. These services are subject to change at the discretion of NUAIR as the project progresses.

- Development of conceptual design for proposed UTM corridor including conceptual drawings, performance specifications, corridor coverage area and other pertinent system requirements.
- Prepare preliminary project cost estimate based on proposed conceptual design.
- Prepare in conjunction with NUAIR a proposed preliminary implementation schedule.
- Development of detailed design and installation documentation, materials lists, etc. for proposed the UTM corridor including final drawings, performance specifications, corridor coverage area and other pertinent system requirements.
- Provide technical data to NUAIR regarding site/development/infrastructure requirements to support proposed equipment such as tower heights, site locations, equipment space requirements, electrical requirements, etc.
- Prepare final project cost estimate based on proposed final design
- Furnish and install all necessary radar, surveillance and communications equipment for proposed UTM corridor.
- Site development/construction of infrastructure such as communication/radar towers, buildings or other infrastructure to support radar equipment or other communications

- equipment.
- Provide system “as-built” installation documentation reflecting final installed condition of the installed equipment including test data.
 - System Performance Testing
 - System Training
 - Operations Support Services
 - Warranty and Maintenance Services
 - Public outreach support as requested by NUAIR

6.8 TASKS TO BE PERFORMED BY NUAIR

The following services are anticipated to be provided NUAIR or its designated representative:

- Overall project management
- Direct interface with regulatory agencies and project stakeholders
- Coordination with New York State
- Permitting (SEQR, NEPA and Building Permits)
- Property acquisition