# Request for Proposal

# Rescue Operations Support Unmanned Aircraft System (ROS UAS) Development Program

Phase 0 - Technology Demonstration
Phase 1 - System Concept Definition
Phase 2 - System Development and Demonstration

19 January 2021
Rev 1 – 25 Aug 2021
Rev 2 – 16 Jan 2022

The University of Texas at Austin
Department of Aerospace Engineering and Engineering Mechanics
Boeing Aircraft System Integration Laboratory (BASIL)

## Section A – Contract Form

| SOLICITATION, OFFER, AND AWARD | |
|---|---|
| Contract Number: | 2022-001 |
| Solicitation Number: | RFP-2022-1 |
| Type of Solicitation: | Request for Proposals (RFP) |
| Date Issued: | 16 Jan 2022 |
| Requisition/Purchase No: | Req-2022-101 |
| Issued By: | The University of Texas at Austin, Department of Aerospace Engineering and Engineering Mechanics |
| Address Offer To: | 2617 Wichita Street, ASE 4.216, Austin, TX 78712 |
| Note: | For educational purposes only |
| **SOLICITATION** | |
| Solicitation Description | Rescue Operations Support Unmanned Aircraft System (ROS UAS) Development Program |
| Solicitation Summary | The University of Texas at Austin seeks to perform technology demonstrations, system concept definition, system development, and demonstration of an Unmanned Aircraft System for Search, Surveillance, and Precision Air Dropped Payload Delivery to Support Austin Fire Department Rescue Operations |
| Response Due | 1 Feb 2022 at 1345 CST |
| For Information Contact | Greg Zwernemann |
| **OFFER (Must be fully completed by Offeror)** | |
| Offeror agrees to furnish any or all items, delivered at the designated point(s), within the time specified in the schedule. | |
| Organization Name | |
| Facility Location | |
| Person Authorized to Sign | |
| Signature | |
| Signature Date | |
| **AWARD (To be completed by Customer)** | |
| Accepted Items | |
| Name of Contracting Officer (CO) | Evrim Solmaz |
| CO Signature | |
| Award Date | |

**Section B – Supplies and Services**

B.1 Introduction

We plan to award multiple teams with ROS UAV contracts, as shown in Figure B.1. Based on the outcome of the currently funded program, we may elect to fund subsequent Engineering Manufacturing Development and Production phases.

We intend to award Phase 0 Technology Demonstration contracts within 5 days of the proposal due date. This phase includes completion of a Test Readiness Review (TRR), Wing Structural Test to Design Ultimate Load, and a Test Results Review (TResR).

We intend to award Phase 1 System Concept Definition contracts immediately following successful completion of Phase 0. Phase 1 includes completion of a System Requirements Review (SRR) and a Conceptual Design Review (CoDR).

Based on results of the CoDR, we intend to narrow the competitive field, with approximately one-half of the Phase 1 competitors receiving a Phase 2 contract. The selected Phase 2 contractors are encouraged to integrate personnel from Phase 1 competitors into their teams.

Phase 2 performs System Development, culminating in a Technology Demonstrator Vehicle (TDV) Competitive Flyoff. This phase starts with a Kickoff Review, and then proceeds through CONOPS Development, Preliminary Design Review (PDR), Propulsion System Testing, Critical Design Review (CDR), Wing Proof Testing, System Integration Review (SIR), TDV Operational Test & Evaluation (OT&E), TDV Competitive Flyoff, and System Design Review (SDR).

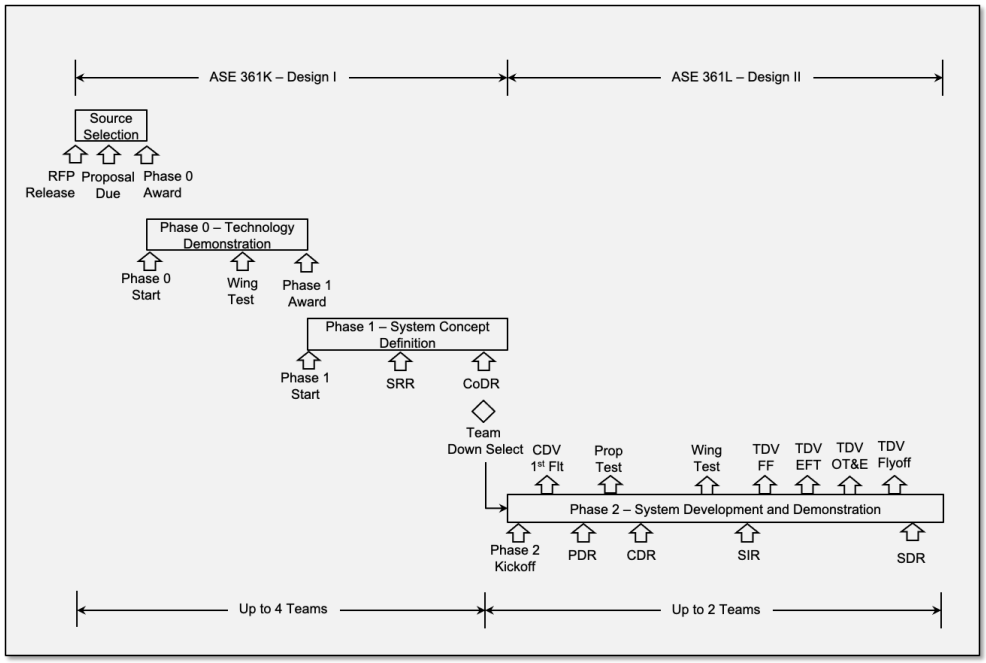


**Figure B.1** – ROS UAS Program Plan

B.2 Contract Line Item Number (CLIN) Structure

The CLIN structures for Phase 0 - Phase 2 are shown in Table B-1. Phase 0 includes one CLIN, Phase I includes three CLINs, while Phase 2 includes eleven CLINs.

**Table B.1** – CLIN Structures

| **Phase 0 – Technology Demonstration** | |
|---|---|
| **CLIN** | **Description** |
| 001 | Surrogate Wing Structural Demonstration |
| **Phase 1 – System Concept Definition** | |
| **CLIN** | **Description** |
| 101 | System Requirements Review (SRR) |
| 102 | Conceptual Design Review (CoDR) |
| 103 | Phase 1 Documentation Preparation |
| **Phase 2 – System Development and Demonstration** | |
| **CLIN** | **Description** |
| 201 | Phase II Kickoff Review |
| 202 | CDV Flight Testing |
| 203 | Preliminary Design Review (PDR) |
| 204 | Propulsion System Testing |
| 205 | Critical Design Review (CDR) |
| 206 | Wing Proof Testing |
| 207 | System Integration Review (SIR) |
| 208 | Technology Demonstrator Vehicle Operational Test & Evaluation (TDV OTE) |
| 209 | TDV Competitive Flyoff Demonstration |
| 210 | System Design Review (SDR) |
| 211 | Phase 2 Documentation Preparation |

**Section C - Statement of Work and Operational Capabilities**

The contractor shall perform all work in accordance with (IAW) the Statement of Work (SOW) in Section J, Attachment 1. ROS UAS capabilities shall be compliant with operational capabilities described in the Capabilities Development Document (CDD), in Section J, Attachment 2.

**Section D – Packaging and Marking**

All presentation and documentation materials for CLIN items shall be marked with the Offeror's proprietary marking labels. Proprietary marking labels shall appear on cover pages and at the top and bottom of each presentation slide or documentation page.

**Section E – Inspection and Acceptance**

Locations for inspection and acceptance of the services are shown in Table E-1.

**Table E.1** – Inspection and Acceptance Information

| **Phase 0 – Technology Demonstration** | | |
|---|---|---|
| **CLIN** | **Description** | **Inspection & Acceptance Location** |
| 001 | Surrogate Wing Structural Demonstration | Offeror's Lab and Presentation Facility |
| **Phase 1 – System Concept Definition** | | |
| **CLIN** | **Description** | **Inspection & Acceptance Location** |
| 101 | System Requirements Review (SRR) | Offeror's Presentation Facility |
| 102 | Conceptual Design Review (CoDR) | Offeror's Presentation Facility |
| 103 | Phase 1 Documentation Preparation | Customer's Office |
| **Phase 2 – System Development and Demonstration** | | |
| **CLIN** | **Description** | **Inspection & Acceptance Location** |
| 201 | Phase 2 Kickoff Review | Offeror's Presentation Facility |
| 202 | CDV Flight Testing | ARCA Field |
| 203 | Preliminary Design Review (PDR) | Offeror's Presentation Facility |
| 204 | Propulsion System Testing | UT ASE Wind Tunnel |
| 205 | Critical Design Review (CDR) | Offeror's Presentation Facility |
| 206 | Wing Proof Testing | Offeror's Lab Facility |
| 207 | System Integration Review (SIR) | Offeror's Presentation Facility |
| 208 | Technology Demonstrator Vehicle Operational Test & Evaluation (TDV OTE) | ARCA Field |
| 209 | TDV Competitive Flyoff Demonstration | ARCA Field |
| 210 | System Design Review (SDR) | Offeror's Presentation Facility |
| 211 | Phase 2 Documentation | Customer's Office |

## Section F – Deliveries of Performance

The Contract Data Requirements List (CDRL) is shown in Table F.1.

**Table F.1** – Contract Data Requirements List (CDRL)

| **Phase 0 – Technology Demonstration** | | | | | |
|---|---|---|---|---|---|
| **CLIN** | **Data Item** | **Title of Data Item** | **Due (WAA)** | **Distrib** | **Format** |
| 001 | A001.1 | Surrogate Wing TRR Presentation | 3 | Canvas | MS PPt |
| 001 | A001.2 | Surrogate Wing TResR Presentation | 5 | Canvas | MS PPt |
| **Phase 1 – System Concept Definition** | | | | | |
| **CLIN** | **Data Item** | **Title of Data Item** | **Due (WAA)** | **Distrib** | **Format** |
| 101 | A101.1 | SRR Presentation | 10 | Canvas | MS PPt |
| 101 | A102.2 | System Requirements Document (SRD) | 10 | Canvas | MS PPt |
| 102 | A102.1 | CoDR Presentation | 13 | Canvas | MS PPt |
| 102 | A102.2 | Initial SCDD (CoDR) | 13 | Canvas | MSW |
| 103 | A103 | Phase 1 Documentation | 15 | Canvas | MS PPt |
| **Phase 2 – System Development and Demonstration** | | | | | |
| **CLIN** | **Data Item** | **Title of Data Item** | **Due (WAA)** | **Distrib** | **Format** |
| 201 | A201 | Phase 2 Kickoff Presentation | 2 | Canvas | MS PPt |
| 202 | A202.1 | CDV First FRR Presentation | 4 | Canvas | MS PPt |
| 202 | A202.2 | CDV Autopilot FRR Presentation | 4 | Canvas | MS PPt |
| 202 | A202.3 | CDV OTE FRR Presentation | 4 | Canvas | MS PPt |
| 203 | A203.1 | PDR Presentation | 5 | Canvas | MS PPt |
| 203 | A203.2 | SCDD Update (PDR) | 5 | Canvas | MSW |
| 204 | A204 | Propulsion System TRR Presentation | 6 | Canvas | MS PPt |
| 205 | A205.1 | CDR Presentation | 7 | Canvas | MS PPt |
| 205 | A205.2 | SCDD Update (CDR) | 7 | Canvas | MSW |
| 205 | A205.3 | Manufacturing Plan | 7 | Canvas | MSW |
| 206 | A206 | Wing Proof Testing TRR Presentation | 9 | Canvas | MS PPt |
| 207 | A207.1 | SIR Presentation | 10 | Canvas | MS PPt |
| 207 | A207.2 | SCDD Update (SIR) | 10 | Canvas | MSW |
| 208 | A208 | TDV FFRR Presentation | 11 | Canvas | MS PPt |
| 208 | A208 | OTE EFT Results Summary | 12 | Canvas | MS PPt |
| 209 | A209 | Flyoff Documentation | 13 | Canvas | MS PPt, MSW |
| 210 | A210 | SDR Presentation | 15 | Canvas | MS PPt |
| 211 | A211 | Phase 2 Documentation | 16 | Canvas | MS PPt, MSW |

**Section G – Contract Administration Data**

The customer points of contact for each program phase are shown in Table G.1.

**Table G.1** – Customer Points of Contact

| Customer Point of Contact | Phase I | Phase II |
|---|---|---|
| Contracting Officer (CO) | Evrim Solmaz | David Meskill |
| Contracting Officer's Technical Representative (COTR) | Mark Maughmer | Mark Maughmer |

**Section H – Special Contract Clauses**

Phase 1: No Special Contract Clauses

Phase 2: No Special Contract Clauses

**Section I – Contract Clauses**

CC 1: This document is to be used for educational purposes only.

## Section J – List of Attachments

The documents listed in Table J.1 provide additional ROS UAS development information.

**Table J.1** – List of Attachments

| Attachment | Title | Date Issued |
|---|---|---|
| 1 | Statement of Work (SOW) | 25 Aug 2021 |
| 2 | Capability Development Document (CDD) | 16 Jan 2022 |
| 3 | Aircraft Design Standards Manual | 1 Aug 2020 |
| 4 | Demonstration Mission Requirements | 16 Jan 2022 |
| 5 | Data Item Descriptions | 19 Jan 2021 |
| 6 | Phase 0 Review and Documentation Evaluation Criteria | 1 Aug 2020 |
| 7 | Phase 1 Review and Documentation Evaluation Criteria | 24 Feb 2021 |
| 8 | Phase 2 Review and Documentation Evaluation Criteria | 1 Aug 2020 |

**Section K – Representations and Certifications**

All Offerors certify that they are students at the University of Texas at Austin in the Department of Aerospace Engineering and Engineering Mechanics, participating in the Aircraft Design I course (ASE 361K) or Aircraft Design II course (ASE 361L).

**Section L – Proposal Instructions**

The purpose of this RFP is to establish one or more contracts for technology demonstration, system concept definition, development, fabrication, system integration, and flight demonstration of a ROS UAS technology demonstration system. The objective of the ROS UAS is to provide continuous 24 hours per day, seven days per week (24/7) capabilities for search, surveillance, and precision airborne drop package delivery in support of Austin Fire Department rescue operations with minimal basing requirements.

Potential future Engineering Manufacturing Development (EMD) and Production phases are dependent on continuing mission requirements and subject to the availability of funds. The AFD plans to operate at an estimated four base sites within the Austin metropolitan area.

The following sections define administrative, management, technical, and logistics requirements for proposal submission. Failure to comply with these instructions may result in an offeror's proposal being excluded from further consideration for award.

L.1 Contracting Approach

Award of multiple Phase 0 contracts is anticipated. The Customer reserves the right to award no contracts based upon the results of the proposal evaluations.

Award of Phase 1 contracts is contingent on successful completion of Phase 0.

At the conclusion of Phase 1, a down-select to a smaller number of Contractors is planned, based on results of the Conceptual Design Review (CoDR) and Phase 1 documentation. Award of up to two Phase 2 contracts is anticipated.

The contract Period of Performance (POP) for Phase 0 - Phase 2 is planned to be 9 months.

L.2 Solicitation Procedures

This is an all-electronic solicitation. There are no plans for hard copies to be mailed or otherwise delivered.

It is the responsibility of each Offeror to review Canvas for notice of amendments, updates, or changes to current information.

Proposals must be complete, self-sufficient, and respond directly to all requirements of the solicitation. Any significant inconsistency, if unexplained, raises a fundamental issue of the Offeror's understanding and/or ability to perform the contract. In no case shall words like "we plan to comply with the requirements of the contract", or equivalent statements, be acceptable to meet the requirements of this RFP. However, the proposal shall include a declaration that acknowledges and accepts, without exceptions, all Statement of Work (SOW) requirements. Offerors shall submit with their proposal a list of names and telephone numbers of persons authorized to conduct negotiations. Failure to comply with these instructions may result in an offeror's proposal being excluded from further consideration for award.

The Proposal Evaluation Board (PEB) is responsible for proposal evaluation, scoring, and award recommendations to the Source Selection Board.

L.3 Proposal Submission

The proposal due date is provided in Section A and posted on Canvas. Failure to meet the proposal due date may result in the proposal not being evaluated.

L.3.1 Proposal Format

a. Microsoft Powerpoint presentation using Contractor format.
b. Legible tables, charts, graphs and figures shall be used when necessary to depict organizations, systems and layout, implementation schedules, plans, etc.
c. Proprietary information shall be clearly identified by placing proprietary information warning notices on each slide.
d. Proposal is limited to a maximum of 5 slides, exclusive of front and back cover slides.

L.3.2 Contents of Proposal

a. Team name and team member list in Customer format
b. Team capabilities
c. Understanding of Customer objectives
d. Understanding of driving design requirements

L.4 Communications Protocol

Unless otherwise specified, until contract award, all Contractor/Customer discussions, including Contractor questions, shall be in writing and considered proprietary.

If clarification questions are necessary, submit a single consolidated set of questions. Offerors may submit questions to the Contracting Officer at any time. However, questions received less than 48 hours prior to the proposal due date may not be answered.

L.5 Proposal Preparation Cost

The RFP does not commit the Customer to pay any costs incurred in the development or submission of any proposal.

**Section M – Evaluation Factors for Award**

M.1 Basis of Contract Award

This section outlines the criteria and methodology planned for evaluation of the Offeror's capabilities and proposal for this effort. Successful contractor proposals demonstrate understanding of Program objectives and overall system requirements.

Offerors are required to meet all solicitation requirements. Failure to comply with the solicitation requirements may result in the Offeror being determined non-responsive to the RFP and eliminated without further evaluation.

M.2 General Information

M.2.1 Number of Contracts to be Awarded

The Customer plans to award up to four contracts.

M.2.2 Rejection of Unacceptable Offers

The Customer may determine that a proposal is unacceptable if it is evaluated to be unrealistic in terms of program commitments or contract terms and conditions or if the proposal is deemed to reflect an inherent lack of competence or failure to comprehend the complexity and risks of the program.

M.2.3 Correction Potential of Proposals

Throughout the evaluation, the correction potential of any deficiency is considered. If any aspect of an Offeror's proposal does not meet the Customer's requirements, but is considered to be correctable, a Deficiency Notice (DN) is be issued to the Offeror. Offeror responses to a DN shall be completed within 24 hours.

M.3 Overall Evaluation Process

The proposal evaluation procedure is based on a two-factor process. Factor 2 is much more important than Factor 1.

Factor 1: Proposal Format Compliance

Evaluation: Offeror's proposal complies with the proposal format requirements in L.3.1.

Rating: Compliant or Non-compliant

Factor 2: Proposal Content Compliance

Evaluation: Offeror's proposal addresses the topics identified in L.3.2.

Rating: The proposal compliance scale rating scale is shown in Table M.1.

**Table M.1** – Proposal Content Compliance Ratings

| Evaluation | Rating |
|---|---|
| Subject not addressed | 0.00 |
| Subject addressed, no substance (words only) | 0.25 |
| Subject addressed, shallow content | 0.50 |
| Subject addressed, minimally acceptable | 0.6 - 0.7 |
| Subject addressed, acceptable | 0.7 - 0.8 |
| Subject addressed, good | 0.8 - 0.9 |
| Subject addressed, excellent | 0.9 - 1.0 |