SCOPE OF WORK

Purchase of a UAS Command Vehicle

1.0 INTENT

The intent and of this invitation to bid is for the purchase of a UAS Command Vehicle.

The City reserves the right to make an award to either one vendor whose proposal is the best value for the City, or to multiple vendors, at the City's discretion.

2.0 VEHICHLE INFORMATION

1. The proposed vehicle should be based or similar to a Ford Transit T-350 Cargo Van, HR, 148 Wheelbase, EL (Extra Long) AWD
2. Required engine – 3.5L Ecoboost V6 or better as approved by the City of Arlington
3. 3.73 Limited Slip Axle
4. Front license plate bracket
5. Autolamp
6. 9500# GVWR Package
7. 50 state emissions
8. HD Trailer Tow Package (optional)
9. Modified Vehicle Wiring SYS
10. Long-arm Power mirrors
11. Radio mounting hardware
12. Cruise Control
13. Dual Alternators (250 AMP)
14. Dual Batteries (70 AMP HR)
15. Aux Fuse panel
16. Power Outlet (110V/150W)

3.0 VEHICLE INTERIOR/ INSULATION/ WALLS/ CEILING/ FLOOR

1. Interior of the van shall provide for a minimum 75" of standing headroom and shall be fully insulated and finished per the following specifications:
    a. R-11 Reflective double bubble insulation installed in walls, ceiling & floor throughout attached to the inside of the exterior panels of the van.
    b. Additional fiberglass insulation shall be installed between the plywood lining and van panels for increased thermal protection and sound deadening.
2. Vehicle Walls/Ceiling

a. Walls shall be lined with ¾ ACX Sanded Plywood.
b. Ceiling shall be lined with 1/4" ACX sanded plywood.
c. Floor shall be lined with ½ ACX sanded plywood.
d. Other low wear surfaces shall be covered with gray polystrand carpet for low glare/sound deadening.

3. Vehicle floor
    a. Floor shall be lined with heat reflective insulation from underbody heat transfer and interior shall be covered with non-slip rubber coin tread HD floor in black.

Workstation Console(s)

1. There shall be a two (2) person workstation on the drivers side of the vehicle and extended from the front bulkhead to the rear bulkhead wall.
2. Each workstation shall consist of:
    a. Two (2) 32" HD monitors on a full motion swivel mount
    b. Each workstation will be equipped with one (1) fixed-mount chair (sliding and re-centering) for a total of two (2) required seats total.
    c. Filing cabinet system separating workstations.
3. Floor to ceiling locking cabinet with power and USB ports adjacent to workstations.
4. Interior counterspace along back wall.

Upper Storage Cabinets

Custom storage cabinets with gas strut openers shall be installed on the driver's side wall above countertop, behind the two (2) workstations. Under cabinet LED lighting shall be provided under the cabinets on the driver's side wall.

Rear Briefing Area

1. There shall be a rear briefing area that includes a 3500nit daylight monitor.
2. The rear area of the vehicle shall be separate from the operator's area by a bulkhead wall.
    a. That wall shall be sound and thermal insulated.
    b. The wall shall have provisions to run cabling via raceway to and from the operator's area when needed.
3. The rear area shall be sealed and insulated the same as the front operations area and lighted with LED lights.
4. The rear area shall contain batteries and power distribution equipment.
5. There shall be storage for miscellaneous equipment.

Power Information

1. There shall be an incorporated power system that includes a primary control panel that contains the AC & DC control breakers and switches as well as Voltage and Amperage metering gages to control all of the power systems on board from a single control position.

2. This shall be in a centralized control area at the interior workstation consoles.
3. The vehicle shall be equipped with a dual pure-sine inverter system.
    a. The vehicle's engine should power all vehicle systems, eliminating the need for a generator.
    b. A True Sine Wave AC power supply for operation of sensitive equipment and high load motor startups.
    c. The equipment shall be DUAL Freedom AC Pro 3000W inverter/charger from batteries with extended surge rating of up to two (2) times continuous power for five (5) seconded motor loads.
4. The vehicle shall be equipped with an external ("shore") power system with the following features and specifications:
    a. Single input 30 AMP
    b. 120 volt AC system

Interior LED Lighting

1. Eight (8) 12VDC LED recessed lights for ceiling on dimmable switch located in main panel.
2. Interior 12VDC (Night Vision Relief) RED lighting (indirect).
3. Rear area behind rear bulkhead shall have 12VDC interior lighting with switch mounted in the rear control panel.

Exterior LED Lighting

The following lights shall be installed on the exterior:

1. Six (6) DC LED Floor/Spot scene lights mounted on the roof rack.
2. Two (2) driver side.
3. Two (2) rear.
4. Two (2) front.
5. Two (2) passenger side.
6. Front light controlled by switch panel in the driver's area.
7. Other lights shall be controlled by the switch(es) on the console control panel.

HVAC Heat/Air

The vehicle shall be equipped with a rear HEAT/AC Factory Tie-In System capable of 32,500 BTUs.

Roof Rack

The vehicle shall be equipped with a custom roof rack (with full walk capacity and powder coated in black) built and installed for the:

1. Lighting and awning support.

Safety

All equipment and installation procedures shall be designed to work in conjunction with all OEM Safety Systems. The following additional safety features are required:

1. Auto carbon monoxide detector/alarm for the operations/interior workstations area.

2. Front and rear mounted fire extinguishers.

Manuals and Documentation

1. One (1) electronic owner's manual shall be provided on a vendor provided laptop. The laptop shall act as the complete owner's manual and shall have information and data on all vehicle systems.
2. OEM vehicle manuals and individual OEM component manuals shall be included as provided by the OEM manufacturers.
3. The vendor shall install all required equipment (below) as well as equipment provided by the customers (e.g., police-type radio). All electrical components, connectors, cables, and installation processes shall be compliant and meet or exceed industry standards.
4. The vendor shall provide and install all necessary equipment as listed in the proposal as well as equipment provided by the customer. This process shall include extensive testing on all of the components as well as destructive testing on critical components such as fall, heat, cold, bounce, power surge, and other forms of destructive tolerance testing.

Required Equipment and Allowances

The following items (or better as approved by the Arlington Police Department) are the approved equipment required for inclusion in this vehicle build:

Description

One (1) Gefen Toolbox 8 x 8 4K HDMI Matrix Switcher
Two (2) 32" HD Smart TV Monitors 1920 x 1080 HD
Resolution, 5300 Series
One (1) 55" 3500nit Daylight TV
One (1) CRADLEPOINT IBR900 with Net Cloud Essentials
For Mobile Routers (Prime) with
IBR 900-600-M-NPS, 1-yr

Installation of Communications Equipment and Integrated PC (provided by customer)

One (1) Power armless awning (side)

One (1) Rear Power Awning

Emergency Lights and Sirens/PA System Allowance

One (1) Offroad Rear Bumper

One (1) Offroad Front Bumper

Offroad package including an air-ride leveling system and wheel/tire upgrade

Additional Details

1. Power Control System
    a. The included power control system shall include a primary control panel that contains the AC & DC controls and switches as well as Voltage and Amperage metering gages to control all of the power systems on board from a single control position. It shall be located within arm's reach of each operator at the two (2) interior workstation consoles.
2. Control Panels
    a. The control panels shall be located near the briefing stations. This shall act as an individual interface to all connections within the vehicle. Each control panel shall have the following:
        i. HDMI
        ii. USB
        iii. USB-C
        iv. Ethernet connections
        v. Charging ports for multiple mobile devices
        vi. 120V outlets for various uses.
    b. These panels shall be backlit for night operations and labeled for ease of use.

3. Inverter Power System
    a. The inverter power system shall allow for the entire vehicle command and control systems to be run off the vehicle engine, eliminated the need for a generator.
    b. This system shall utilize True Sine Wave AC power for operations of sensitive equipment such as drone batteries/chargers and high-load motor startups.
    c. This system shall uses DUAL 3000W inverter chargers with extended surge ratings for up to two (2) times continuous power for five seconds.
4. Control Tower
    a. The control tower shall house all technology and equipment relevant to any of the Command and Control Systems.
    b. This will include:
        i. Cradlepoint Wifi Router
        ii. Matrix Control Panel,
        iii. All power systems
        iv. Other Communication Equipment
    c. This system shall be ergonomically designed for ease of use from both operator positions.
    d. The Control Tower shall also be climate controlled with internal cooling to maintain an appropriate operating temperature and prevent overheating of critical technology and equipment.
5. Roof Rack
    a. This roof rack shall be designed as an extension of the command and control systems.
    b. This roof rack shall be manufactured to support all relevant equipment based on customer's design.
    c. The roof rack shall be fully walkable and reinforced.
    d. This full-length roof rack platform shall have lighting and safety equipment for day and night operations.
    e. The roof rack shall house the integrated 360-degree flood lighting.

f. The roof rack shall be finished in durable powder coat (black).

6. Off-Road Package
    a. This package shall be designed to allow for the vehicle to travel into and out of any environment.
    b. This system shall include an air-ride leveling system and wheel, tire, and necessary suspension upgrade for increased ground clearance, traction, and handling.
    c. Controls for the air-ride system shall be integrated into the driver control panel.
    d. This system shall be designed as a match-grade product so that it is fitted to the exact vehicle needs per the customer's design.

7. 24/7 Dedicated Support Line
    a. The vendor shall provide the customer with a 24 hour, 7 days a week emergency support line if they have any operational questions or problems.

8. Electronic Operations Manual
    a. The electronic operations manual shall be specific to the customer's unit.
    b. It shall contain all the necessary equipment operational instructions and relevant information.

The vendor should retain an exact duplicate of the customer's unit to provide for accurate sharing of information for diagnostic purposes