



**MINISTRY OF NATIONAL SECURITY  
NASSAU, BAHAMAS**

**BAHAMAS UNMANNED AERIAL SYSTEMS  
(BUAS) SOLUTION**

**REQUEST FOR PROPOSAL (RFP)  
UNMANNED AERIAL SYSTEMS SOLUTION FOR THE MINISTRY OF  
NATIONAL SECURITY**

**REQUEST FOR PROPOSAL (RFP)**

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# 1 INTRODUCTION

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The Government of the Bahamas is requesting proposals from qualified firms for the purchase and installation of Unmanned Aerial Systems (UAS). The objective of this task is to provide a modernize solution to mitigate challenges with detecting threats, mapping post disaster sites, Search and Rescue missions and monitoring developing situations in and around the Commonwealth of The Bahamas.

# 2 OBJECTIVE

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To purchase UASs and develop a UAS Academy to train the country’s pilots and operators for the UASs that the country will purchase through the Ministry of National Security. An Academy, Drones and Drone Stations throughout the country will be developed, provided and established respectively, to provide Intelligence, Surveillance and Reconnaissance (ISR) for the Ministry of National Security led by the RBDF. This UAS solution will provide the Commonwealth of the Bahamas with practical drones for surveillance and reconnaissance to use in conjunction with the country’s overall Command, Control, Communication, Computer, Intelligence, Surveillance and Reconnaissance (C4ISR) efforts being led by the RBDF.

# 3 UAS SOLUTION GOALS

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GOAL 1 – Develop UAS stations throughout the Bahamas that meet FAA and Aviation Civil Authority rules, regulations and guidelines.

GOAL 2 – Develop the capacity to own, maintain and effectively deploy drones of all ranges and types from land and sea to increase C4ISR capabilities.

GOAL 3 – Establish a UAS Academy to provide the Ministry of National Security and by extension the country, with expert training for UAS pilots, engineers and support staff.

GOAL 4 – Become Center of Excellence in the region for UAS systems offering support and training.

The main objective of this Request for Proposal is to locate a source that will provide the best solution to the Ministry of National Security, while providing partnering support in achieving the above goals. While price is a significant factor, other criteria will form the basis of our award decision, as more fully described in the Evaluation Factors section of this Request for Proposal below.

# 4 SCOPE OF SERVICES

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Introduce and develop a solution to deploy Drones (UAS) from land and sea to cover the Bahamas in four quadrants:

- North – Grand Bahama, Abaco, Bimini, Berry Islands
- Central North – New Providence, Andros, Eleuthera, Cat Island, Exuma/Cays, San Salvador
- Central South – Ragged Island, Acklins, Crooked Island, Long Island, Cay Lobos, Cay Sal
- South – Mayaguana, Inagua

#### 4.1 SOLUTION REQUIREMENTS:

- Trained UAS pilots and UASs for contractual use immediately.
- Trainers for training of RBDF and other agency pilots while solution is being implemented.
- Plans, development and implementation of a UAS academy in New Providence that provides Unmanned Aerial Systems training for drone pilots, ground station operators, engineers and technical support staff for UAS systems to be full owned and operated by the Bahamas Government through the RBDF.
- 55 drones (Startup number to cover all MONS agencies for the first year)
  - 6 **Short Range UAVs** (Main UAS stations throughout the country)
  - 24 **Close Range UAVs** with vertical take-off or catapult launch/net retrieval that can be used on RBDF craft and in the field with options for water retrieval if failure occurs (RBDF, Police, Immigration)
  - 20 **Very Low Cost Close Range UAVs** that have a range of 10 km, endurance time of 20 to 45 minutes and underwater capability options (Police, Customs and Immigration)
  - 5 **Tethered Drones** for use at Bahamas Department of Corrections (HMP and coastal outpost stations on the island of New Providence)

*\*See Classification Of Drones for clarity on terms*

#### 4.2 CLASSIFICATION OF DRONES

For the purpose of this RFP the UAVs will be classified by Range and Endurance using the following descriptors:

##### Classification According to Range and Endurance

##### **4.2.1 Very Low Cost Close Range UAVs**

This class includes UAVs that have a range of 10 km, endurance time of 30 to 45 minutes.

##### **4.2.2 Close Range UAVs**

This class includes UAVs that have a range of >10km<150 km and endurance time of 1 to 6 hours. They are usually used for reconnaissance and surveillance tasks.

#### 4.2.3 Short Range UAVs

This class includes UAVs that have a range of 150 km or longer and endurance times of 8 to 12 hours. Like the close range UAV, they are mainly utilized for reconnaissance and surveillance purposes.

#### 4.2.4 Mid-Range UAVs

The mid-range class includes UAVs that have super high speed and a working range of 650 km. They are also used for reconnaissance and surveillance purposes in addition to gathering meteorological data.

#### 4.2.5 Endurance UAVs

The endurance class includes UAVs that have an endurance of 36 hours and a working range of >650 km. This class of UAVs can operate at altitudes of 30,000 feet. They are also used for reconnaissance and surveillance purposes.

#### 4.2.6 Tethered Drone

A drone that is connected to a mobile ground station via a powered tether.

### 4.3 RANGE/ENDURANCE TABLE WITH EXAMPLES

<b>VERY LOW COST CLOSE RANGE</b>	<b>CLOSE RANGE</b>	<b>SHORT RANGE</b>	<b>MEDIUM RANGE</b>	<b>ENDURANC E RANGE</b>
<b>10 Km 30-45 mins</b>	<b>&gt;10km&lt;150 km 1-6 hrs</b>	<b>150 +km 8-12 hrs</b>	<b>650 km 15+ hrs</b>	<b>&gt; 650 km 36 hrs</b>
<b>DJI Mavic 2 Splash Drone 3</b>	<b>Vertical Technologies Delta Quad Pro</b>	<b>Elbit Hermes 90</b>	<b>Elbit Hermes 450</b>	<b>Elbit Hermes 900</b>
<b>DJI Inspire InstantEye</b>	<b>Elbit Skylark C</b>	<b>Primoco One 100</b>		
<b>Sentinelle DJI M200</b>	<b>Elbit Skylark I-LEX</b>	<b>Primoco One 150</b>		
<b>Elbit DA-VINCI</b>				
<b>Elbit Skylark I-LE</b>				
<b>Xcraft X2Geo</b>				

#### 4.4 MINIMUM CAPABILITIES:

The following are capabilities that must be taken into consideration during the selection process for the drones. The list outline below is not meant to be exhaustive and the selection committee reserves the right take into consideration matters not listed in the RFP. In addition several spec sheet tables are attached for further guidance at ANNEX A.

- Drone shall be rotor/fixed type
- Drones should have encryption and remote wiping of data capabilities
- Be able to maintain flight position (position-hold function)
- Be able to perform both vertical and horizontal movements
- Be able to produce vertical and horizontal photographs and video
- Be able to predefine/programmed flight path autonomously and independently take predefine aerial photographs and videos
- Shall have innovative sensor system based on methods of artificial intelligence and image processing for collision avoidance
- Be able to carry different sensors like Digital camera, Multispectral and Thermal sensors
- Option to transfer the live image of the Camera form drone. The video broadcast, shall be able to view by the ground station or by a video display goggles and can be controlled as being on board.
- Ability of Vertical take-off and landing – should take off and land pretty much anywhere
- Fully automatic operations, including takeoff, flight plan execution and auto landing
- Shall have “Coming Home” option: When activated, the drone (if drone goes out of range) automatically returns to the starting position.
- Ability to record GPS coordinates for every photo (to geo-reference the images)
- Shall be able to control the drone via RC remote control, tablet PC, GMS, Inmarsat C or other linking technologies
- The drone shall have on-board mounted payloads consisting of processor board, GPS antenna, wireless camera at the least
- The drone flight shall be controlled through ground control station. The mission parameter required for flight control shall be provided by ground control station to the flight controller.
- On board mounted GPS transmitter/receiver should provide the current location to the processor board for flight control as well as it should be communicated to ground control station to monitor flight trajectory on the display.
- Wireless camera shall be mounted on drone. The system shall be able to stream the image/video through on board video transmitter to video receiver connected to command/control device at ground.
- Perform day and night time videography with high resolution camera (14MP or more) and prepare high definition videos with the layer of information embedded in the video
- Perform day and night time aerial photography using high resolution daylight camera (14MP or more) with geo-tagging (RTK GPS), high precision, and photogrammetric aerial camera.
- Long range fixed wing drones shall be able to acquire GPS location from satellites.

## 4.5 DATA

Software packages – mapping/modeling etc. should be specified in detail including data storage capacity options.

## 5 ACADEMY SPECIFICS

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Develop UAS academy that will be ran and owned by the Bahamas Government to train and develop UAS pilots, operators, drone repairmen, service men and maintainers. The Academy must meet FAA and Civil Aviation Authority rules, regulations and guidelines. The Academy must be regional oriented for UAS Training for all MONS sectors in The Bahamas and throughout the region. Hence the institution will serve not only nationally but internationally as well inviting partner nations to enroll their service men and women for training.

## 6 TRAINING OF PERSONNEL:

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Bidders will be expected to provide training at their own facilities and/or at the Defence Force Base in specialist training, piloting, ground service, repair and maintenance if required.

Bidders should detail what facilities they have available at their disposal for demonstrations/training ensuring that optional programs are to be included. Training should cover both drone handling and maintenance repair, and all support systems. Preference will be given to those bidders who have dedicated facilities in this regard.

Re-current training after the first 2 years of operation should be included and proposals in this respect tabled for initial consideration. The cost to be shown as an option. The total cost of this must be included in the Financing arrangements.

## 7 PROPOSAL RECOMMENDATIONS:

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All Consultants are free to recommend options in their proposal submission based on the specification and requirements proposed. The drones provided in this proposal will be managed from various locations in the country manned by the various MONS agencies in addition to RBDF ships. The land based sites, must be FAA and Civil Aviation Approved UAS stations for servicing, maintenance and operation of the drones. As a part of the solution these requirements will be determined by the contracted company. In addition the contracted company will assist and support the MONs in meeting these standards. The project will provide immediate access to drones and skilled pilots for service as needed while Bahamian pilots are being trained to pilot drones in the near future. Payload considerations can be detailed in the proposal but must cover HD cameras for daytime, nighttime, thermal and IR.

## 8 CONTENT PROPOSAL

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Submission to this RFP must include the following:

Provide basic information to indicate expertise and experience in this area and capacity to carry out project if chosen by indicating the following in their application:

- Company Profile – describing the nature of business, field of expertise, licenses, certifications and accreditations. The company must be FAA certified and it is preferred that the company has a minimum of five (5) years of experience in the UAS industry.
- Business licenses – Registration Papers, Tax Payment Certification, etc
- Track Record – list of at least three projects (clients) that are similar as those stated in this proposal, indicating description of contract scope, contract duration, contract value, contract references;
- Technical proposal must be provided not exceeding more than twenty pages. This proposal should necessitate an overview of the proposed solution as well as resumes of all key personnel performing the work. In addition to, the technical proposal should provide a proposed schedule and milestones as applicable.
- Proposals must be signed by a representative that is authorized to act on behalf of the Bidder's Company.
- Standard set of terms and conditions if any should be submitted with the proposal.
- Bidders must be able to supply the entire package; partial offers will not be accepted.
- Selected company for solution will be required to sign a nondisclosure agreement drafted by the Government of The Bahamas outlining a reasonable time frame in which information is expected to be kept confidential after the completion of the project.

All terms and conditions will be subject to negotiation.

- Proposals must be received prior to 11 Jan 2019 to be considered
- Proposals must remain valid for a period of 90 days.
- The Ministry of National Security anticipates selecting at least two individuals or firms to have more in-depth discussions with, and will make an award to one of these “down-selected” individual or firms.



## 9 FINANCIAL PROPOSAL:

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Bidders should arrange for and include in their offer a detailed financing facility that covers 100% of the contract value including but not limited to all the drones, spare parts, training, academy development, warranties, insurance, maintenance, technical support, and expenses of the RBDF for various inspection/supervision visits of manufacturers sites and for training purposes.

As delivery is to be phased an appropriate loan structure should be offered.

Any bid that is not accompanied by a financing proposal will be considered non-compliant.

## 10 COST BREAKDOWN BY COST COMPONENT

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The costing of all criteria will be placed upfront and presented in stages as follows:

### 10.1 STAGE 1

Pilots and 4 UAVs (Short range) on contract for immediate service on call 24/7 while; the Academy is being setup; FAA and civil aviation requirements are being identified and met; and Bahamian pilots, servicemen, ground crew etc. are being trained (period not to exceed 1 year)

### 10.2 STAGE 2

Training package for pilots of proposed Drones of project (30 pilots 15 ground Station, 8 Maintainers/Technicians).

### 10.3 STAGE 3

Drones for purchase 55 in total (6 short range UAVs, 24 close range VTOL, 20 very low cost close range UAVs, 5 Tethered Drones) The short range UAVs will be populated at sites throughout the Bahamas Namely Inagua, New Providence and Grand Bahamas over a period of two sites per year for the next two years or sooner if practicable. Full maintenance warranty package (2 years minimum) must be included and clearly laid out.

### 10.4 STAGE 4

Proposal for Drone Academy fully ran by the RBDF under the guidance of trained professional in the field until self-sufficient. Full overall costing with breakdowns and timeline should be detailed here along with a Gantt chart display.

The proposal for these solutions must be cost effective, scalable and quantifiable. The proposal should clearly lay out plans that support a centralized management system, for the Ministry of

National Security that will be maintained and managed by, the Royal Bahamas Defence Force, which will also be utilized over other Ministry of National Security agencies.

## 11 PAYMENT TERMS AND CONDITIONS:

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Item	% Payment of Contract Price
Upon Submission and Approval of Mobilization and Work Plan	50%
Upon Approval of Goods Procured	10%
Upon Approval and Installation	20%
Upon Completion, Training and Signoff by the Ministry of National Security	20%

### 11.1 INSPECTION & ACCEPTANCE VISITS

Should there be a need, the RBDF will provide technical representatives present at various times in the roll-out of phases. The successful Bidder will table proposals in this regard and include an appropriate budget for this. Bidders to include for each iteration, the cost air fares, accommodation, local transport and per diem expenses

## 12 ESTIMATED TIME LINES:

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Delivery is to be phased over no longer that a two year period and the RBDF is seeking fixed prices as far as is practically possible. Bidders will detail delivery schedule for each drone, training, academy development, UAS service and maintenance.

## 13 EQUIPMENT WARRANTIES AND MAINTENANCE:

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A long term maintenance and technical support package must be detailed and a Bidders capacity in this regard will form a major factor in the evaluation process.

- Bidders should provide details of their manpower and facilities dedicated to after sales and product support and be able to demonstrate their capacity to provide ‘**whole of life**’ technical assistance.
- Preference will be given to those Bidders that own or have access to repair facilities in the Caribbean to undertake routine maintenance and upkeep work and any repairs or modifications during the warranty period.

- All maintenance manuals and service procedures are to be provided for all the systems on board, with no less than one printed copy per UAV and two printed copies for the base office in addition to an electronic copy.
- Bidder's planned maintenance programs are to be detailed, along with recommended spares and supplies for the initial 2 years. Future packages for time after the initial two years should be priced under separate cover.

The RBDF will have up to 3 representatives available for the customer trials and acceptance processes. Bidders to include costs for air fares, accommodation, local transport and per Diem expenses.

## 14 EVALUATION FACTORS

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The Ministry of National Security will rate proposals based on the following factors, with cost being the most important factor:

1. Responsiveness to the requirements set forth in this Request for Proposal
2. Relevant past performance/experience
3. Samples of work
4. Cost, including an assessment of total cost of ownership
5. Technical expertise/experience of bidder and bidder's staff
6. Partnership with a Bahamian Owned Company in the respective field (not necessary but preferred).

The Ministry of National Security reserves the right to award to the bidder that presents the best value to the Ministry of National Security as determined solely by the Ministry of National Security in its absolute discretion.

## 15 ELIGIBILITY:

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Bidders will be selected in accordance with the policy and procedures set out in the Ministry of National Security.

### 15.1 BID DOCUMENTATION

Bidders should supply:

- Full commercial offer
- Full technical specification of selected UAVs as per requirement with General Specifications for each drone.
- A firm a financing proposal
- FAQs with supporting documentation
- Bid Bond
- Latest Audited Financial Statement

- Customer reference list
- Appropriate literature and other such documentation as Bidder wishes to offer in support of its bid

## 15.2 CLARIFICATIONS

All questions must be tabled in writing not less than 14 days before the closing date for offers.

Clarification on technical aspects of this RFP may be obtained by emailing:

**LT. CDR Carlon Bethell**  
Staff Officer Operations  
Squadron Commanding Officer  
Royal Bahamas Defence Force  
P.O. Box N3733  
Phone: 242 376 9114  
Email: [carlonbethell@rbdg.gov.bs](mailto:carlonbethell@rbdg.gov.bs)

Clarification on Procurement Matters:

**Lisa Adderley**  
Deputy Permanent Secretary (Actg)  
Ministry of National Security  
P.O. Box N-3217  
Charlotte House, Nassau, Bahamas  
Tel. 1(242) 502-3300/29  
Fax. 1(242) 356-6087  
EMAIL: [LISAADDERLEY@BAHAMAS.GOV.BS](mailto:LISAADDERLEY@BAHAMAS.GOV.BS)

## 16 DATA RIGHTS

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All data created, generated compiled, stored or displayed during training or after the program is fully implemented will remain the sole and exclusive property of Ministry of National Security.

Bidders must be able to supply the entire package, partial offers will not be accepted.

All drones need not be constructed by the Bidder however, bidder must prove that they have the experience and technical knowledge base for the drone, which includes operating, maintenance and repairs to ensure maximum standardization and long term whole of life support. Bidders must be able to work with all local aviation authorities obtaining the required permits and approvals to fly safely and legally in Bahamian airspace. They must be FAA certified (or other Quality standard) and submit proposals for drones of proven design, which are currently in operation. Full customer references must be provided detailing drones currently in service. Ideally, bidders should have the same or similar drones operating in the Caribbean.

Bidders must have a minimum of 5 years of experience in the UAS industry.

Where Bidders wish to submit a new, unproven UASs in order to meet the requirements laid out in this request, they should note that performance guarantees will be sought with financial penalties where vessels do not meet the technical specifications, speed, range and or endurance.

## 17 RFP & PROJECT TIMELINES

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The Request for Proposal timeline is as follows:

Request for Proposal Issuance	Nov 2018
Selection of Top Bidders / Notification to Unsuccessful Bidders	Jan 2019
Start of Negotiation	Feb 2019
Contract Award / Notification to Unsuccessful Bidders	Mar 2019
Pilots and initial drone Services by	April 2019
First Iteration of Pilots, support staff and ground crew training	April 2019
Train the trainer training for academy by	June 2019
Drone Academy fully Operational and self-sufficient by	1 July 2020

## 18 SUBMISSION OF RESPONSES TO THIS RFP:

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### 18.1 SUBMISSION GUIDELINES & REQUIREMENTS

The following submission guidelines & requirements apply to this Request for Proposal:

- 1) First and foremost, only qualified individuals or firms with prior experience on projects such as this should submit proposals in response to this Request for Proposal.
- 2) Bidders intent on submitting a proposal should so notify the representative identified on the cover page no later than 31 Dec 2018.

- 3) Bidders must list at least 3 projects that are substantially similar to this project as part of their response, including references for each. Examples of work should be provided as well.
- 4) A technical proposal must be provided that is not more than 20 pages. This technical proposal must provide an overview of the proposed solution as well as resumes of all key personnel performing the work. In addition, the technical proposal should provide a proposed schedule and milestones, as applicable.
- 5) A price proposal must be provided that is not more than 5 pages. This price proposal should indicate the overall fixed price for the project as well as hourly rates and an estimated total number of hours, should the Ministry of National Security decide to award a contract on an hourly rate basis.
- 6) Proposals must be signed by a representative that is authorized to commit bidder's company.
- 7) If you have a standard set of terms and conditions, please submit them with your proposal.

**All terms and conditions will be subject to negotiation.**

- a. Proposals must be received prior to 11 January 2019 to be considered.
- b. Proposals must remain valid for a period of 90 days.
- c. The Ministry of National Security anticipates selecting at least two individuals or firms to have more in-depth discussions with, and will make an award to one of these "down-selected" individuals or firms.
- d. The Government reserves the right to accept or reject any or all bids.
- e. All proposals will be considered final. No additions, deletions, corrections or adjustments will be accepted after the time stated for submission has expired
- f. The Government shall not purchase goods or services from any business owing delinquent taxes to the Government of The Bahamas.
- g. Proposals received after the designated time of receipt will be considered as "NO BID" and "VOID".
- h. Incurred Expenses - This RFP does not commit the Government to award a contract. Nor shall the Government be responsible for any cost or expense which may be incurred by the respondent in preparing and submitting the proposal called for in this RPF, or any cost or expense incurred by the respondent prior to the execution of a contract agreement.
- i. Insurance for general liability (including bodily injury and property damage) must be included and detailed.

ALL PROPOSALS ARE TO BE ADDRESSED TO THE FOLLOWING:

**Chairman**

Tenders Board  
Ministry of Finance  
P. O. Box N-3017  
West Bay Street  
Nassau, Bahamas

Proposals should be hand delivered or express mailed to the Tenders Board, Ministry of Finance, West Bay Street or emailed to: TENDERSBOARD@BAHAMAS.GOV.BS

The original, and two (2) copies of the Request Proposal and a copy on CD-ROM or jump drive clearly marked “**Request for Proposal – BAHAMAS UNMANNED AERIAL SYSTEMS (BUAS) SOLUTION**”, must be prepared in English and delivered in a seal envelope no later than 11 January 2019.

Late submissions will not be accepted and will return unopened to the applicant.

Electronic submission will be accepted with digitally signed certificates as an initial proposals however, if consideration is given to the initial proposal, a physically signed original document will be required.

The Tenders Board reserves the right to accept or reject any application received.

## 19 ANNEX A

### 19.1 DRONE AND SERVICES SPEC TABLES

These tables are purely for consideration

Description of Activity	Remuneration Per unit of time	Total Period of Engagement	No. of Personnel	Total Rate
<b>I. Personnel Services</b>				
Services from Home Office				
a. Expertise 1				
b. Expertise 2				
c. Expertise 3				
d. Expertise 4				
<b>II. Out of Pocket Expenses</b>				
1. Travel Cost				
2. Daily Allowance				
3. Communications				
4. Reproduction				
5. Equipment Lease				
6. Other Related Cost				

Deliverables 1 – Supply of Drone (UAS)		Percentage Of total price	Price (Lump Sum, All Inclusive)
Speed control	Auto-throttle		
Take-Off	Manual/Stabilized/		
Auto Landing	Manual/Stabilized/Auto/Drag chute/Net Recovery		
<b>Autonomous</b>			
<b>GPS Positioning</b>			
<b>ADS-B Sensors</b>			
<b>Air Data System</b>			
Dynamic pressure sensor range	0 – 125 mph		
Static pressure – low altitude option	0 – 1 mile		



Static pressure – high altitude option	<b>0 – 2.5 miles</b>		
<b>Minimum Hardware for Control Computer</b>			
OS	<b>Windows</b>		
Processor	<b>Intel Core i3</b>		
RAM	<b>2 TB</b>		
Hard Drive	<b>1 free Gb Video Card</b>		
OpenGl Ports	<b>1 RS-232 port</b>		
<b>Camera Control</b>			
Protocols	<b>PWM</b>		
Camera Modes	<b>Auto/Manual</b>		
<b>Plane Dimensions</b>			
<u>Length</u>			
Long Range	<b>8ft</b>		
Medium Range	<b>35 inches</b>		
<u>Wing Span</u>			
Long Range	<b>11ft</b>		
Medium Range	<b>34 inches</b>		
Payload Bay			
<b>Weights Empty</b>			
<b>Medium Range</b>	<b>10 lbs</b>		
<b>Maximum Take-Off Weight</b>			
Long Range	<b>50 lbs</b>		
Medium Range	<b>13 lbs</b>		
<b>Weather Proofing</b>			
<b>Flight Time</b>			
Long Range	<b>15 hrs +</b>		
Medium Range	<b>80 mins +</b>		
<b>Typical Cruising speed</b>			
Long Range	<b>19 + m/s</b>		
<b>Max Speed</b>			
Long Range	<b>32+ m/s</b>		
Medium Range	<b>17+ m/s</b>		
<b>Max Distance Travelled</b>			

<b>Long Range</b>	<b>517+ miles</b>		
<b>Medium Range</b>	<b>46+ miles</b>		
<b>Optional Items</b>			
<b>Deliverables 2 Training</b>			
Training for twenty pilots, Twenty Operators, Ten Technicians /Mechanics			
Training manuals			
Operation of control systems of the Drone (UAS+)			
Other related cost			
Installation Fee			
Maintenance Fee:			
Total Amount:		100%	

	<b>Long Range Fixed Wing</b>	<b>Medium Range</b>
<b>Flight Control Specifications</b>		
Speed control	Auto-throttle	Auto-throttle
Take-Off	Manual/Stabilized/catapult launch	Manual/Stabilized
Auto Landing	Manual/Stabilized/Auto/Net Recovery/Dragchute	Manual/Stabilized/Auto Dragchute
<b>Autonomous</b>		
<b>GPS Positioning</b>		
<b>ADS-B Sensors</b>		
<b>Air Data System</b>		
Dynamic pressure sensor range	0 – 125 mph	0 – 125 mph
Static pressure – low altitude option	0 – 1 mile	0 – 1 mile
Static pressure – high altitude option	0 – 2.5 miles	0 – 2.5 miles
<b>Minimum Hardware for Control Computer</b>		
OS	Windows	Windows
Processor	Intel Core i3	Intel Core i3
RAM	2 TB	2 TB
Hard Drive	1 free Gb Video Card	1 free Gb Video Card

OpenGl Ports	1 RS-232 port	1 RS-232 port
<b>Camera Control</b>		
Protocols	PWM	PWM
Camera Modes	Auto/Manual	Auto/Manual
<b>Plane Dimensions</b>		
Length	<b>8 ft</b>	<b>35 inches</b>
Wing Span	<b>11 ft</b>	<b>34 inches</b>
Payload Bay		
<b>Weights Empty</b>		<b>10 lbs</b>
Weight		
Maximum Take-Off Weight	<b>50 lbs</b>	<b>13 lbs</b>
<b>Weather Proofing</b>		
<b>Endurance</b>		
<b>Flight time</b>	<b>15hrs +</b>	<b>80 mins +</b>
<b>Typical Cruising speed</b>	<b>19+ m/s</b>	
<b>Max Speed</b>	<b>32+ m/s</b>	<b>17+ m/s</b>
<b>Max Distance Travelled</b>		
<b>Range</b>	<b>517 miles +</b>	<b>46 miles +</b>
<b>Optional Items</b>		