Technical Offer Form

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| **Call for offers: Supply of precision agriculture Drones and related Training**  |

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| Name of Proposing Company / Organization: |  |
| Country of Registration:  |  |
| Name of Contact Person for this Offer: |  |
| Address: |  |
| Phone / Fax: |  |
| Email: |  |

**Selection Criteria**

Successful participants must provide the following:

• Be enrolled in one of the official professional or trade registries at the country of registration. The submitted document preferably, should be submitted in English. However, for the evaluation process those can also be submitted in Arabic. The certified English version will be requested by the successful participant before contract signature).

• Provide a signed statement certifying that the equipment is new and unused.

• Provide a warranty for good operation for at least 1 year for the equipment which is to be supplied and installed.

• Provide proof of their average annual turnover for the last three (3) fiscal years being at least equivalent to the maximum amount of this Call. As supporting documentation, the applicant must provide their official Financial Statements, stamped, and signed by the legal representative of the company. The submitted document preferably, should be submitted in English. However, for the evaluation process those can also be submitted in Arabic.

• Provide a list of projects proving at least five (5) years of experience in the provision of diagnostic equipment and instruments for monitoring and precision surveying, including through unmanned aerial vehicles (UAV) and other smart irrigation equipment, and the related training.

• Have minimum duration of operation of five (5) years. Proof to be provided by the related chamber (date of registration). The submitted document preferably, should be submitted in English. However, for the evaluation process those can also be submitted in Arabic. The certified English version will be requested by the successful participant before contract signature).

* Technical specification leaflets and brochures for the Compliance of the equipment.

Also, the following tables must be filled in:

**Table 1: Drone for Crop Monitoring** - **Technical specifications of the equipment you will offer compared with the required technical specifications**

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| **Item** | **Technical specification** | **Technical specifications of offered equipment** |
| **Drone for Crop Monitoring** |  |
| Functionality and purpose:* Designed for real-time monitoring of crop health and conditions. It should be able to record also images for future treatments.
* Provides actionable insights on water stress, disease and detection, biomass status, and damage from natural disasters.
* Capable of recording and storing high-resolution images for future analysis.

The obtained images should be able to be used for flying control of the spraying drone. | Yes/No Provide Details |
| Drone body and build:* Lightweight of maximum 50 kg, and durable frame made from carbon fiber or equivalent materials.
* Weather-resistant design to operate in diverse environmental conditions (temperature, humidity, light rain). It is required to have a protection grade of minimum IPX4.
 | Yes/No Provide Details |
| Flight specifications:* **Flight Time:** minimum 18 minutes flight time (preferably up to 120 minutes).
* **Flight Range:** Minimum 1 km operational range (longer range preferable).
* **Flight Altitude:** Capable of flying up to 120 meters above ground level for optimal monitoring.
* **Navigation System:** GPS/GLONASS-based navigation with autonomous flight capability and manual override.
* **Obstacle Avoidance:** Basic obstacle detection is required, advanced is optional. (omnidirectional obstacle detection and having radars for obstacle detection).
 | Yes/No Provide Details |
| Monitoring Equipment* High-resolution RGB camera with multi-spectral and thermal imaging capabilities is required: The drone should be equipped with a high-resolution RGB camera for detailed imaging. Additionally, it should have multi-spectral and thermal sensors, for NDVI computation (Normalized Difference Vegetation Index) for vegetation analysis and a high-sensitivity thermal sensor for heat mapping. The multi-spectral and thermal sensors should provide accurate and reliable data across various environmental conditions.
* **Thermal Imaging Camera:** For heat mapping and temperature-based analysis. Detailed info is required.
* **Camera Resolution:** Minimum 12 MP for RGB and 640x512 resolution for thermal imaging.
* **Field of View (FOV):** Wide-angle coverage with adjustable focus.
* **Data Storage:** Internal storage capacity is minimum 32 GB; external SD card compatibility is optional.
* **Image Processing System:** Ability to store images and transmit data for manual or automated spray guidance. Able to provide images for later analysis, integration with spraying drones is preferable.
 | Yes/No Provide Details |
| Power and battery:* **Battery Type:** High-capacity lithium-polymer (LiPo) or lithium-ion (Li-ion). 12 batteries and 4 charging stations are required for continuous functioning.
* **Charging Time:** ≤ 3 hours with fast charging options.
* **Swappable Batteries:** Allows extended operations with quick replacement.
 | Yes/No Provide Details |
| Operational Features:* **Autonomous Flight Modes:** Pre-programmed routes, area mapping, and waypoint navigation.
* **Real-Time Data Transmission:** Live data feed to a control unit, tablet, or mobile device.
* **Data Processing:** Able to provide images for later analysis, integration with spraying drones is optional.
* **Data Accuracy:** Spatial resolution of ≤ 10 cm for detailed monitoring.
* **Weather Monitoring Integration:** Measures local conditions such as temperature and humidity during flights.
* **Emergency Return:** Auto-return to base on low battery or communication loss.
 | Yes/No Provide Details |
| Maintenance and Support:* Easy access to spare parts and servicing.
* User training and comprehensive user manuals.
* Software license: free license for a minimum of 1 year (preferable to have free upgrade software, or provide two years license for free).
 | Yes/No Provide Details |
| Certification of compliance:* CE, FCC, or equivalent international certifications for safety and reliability.
* Compliance with aviation regulations of Lebanon.
 | Yes/No Provide Details |
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**Table 2: Drone for Spraying** - **Technical specifications of the equipment you will offer compared with the required technical specifications**

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| **Item** | **Technical specification** | **Technical specifications of offered equipment** |
| **Drone for Precise Pesticides Spraying** |  |
| Functionality and purpose:* Designed for precision pesticide application to minimize chemical usage and environmental impact.
* Suitable for agricultural fields of varying sizes and crop types.
* Able to be programmed for precise chemical spraying
 | Yes/No Provide Details |
| Drone body and build:* Lightweight (Maximum 80 kg of an empty drone is accepted) and durable frame constructed from carbon fiber or equivalent materials.
* Weather-resistant design to operate in diverse environmental conditions (temperature, humidity, light rain). It is required to have a protection grade of minimum IPX4.
 | Yes/No Provide Details |
| Flight specifications:* **Flight Time:** up to 30 minutes per charge, depending on payload. (longer period preferable)
* **Flight Range:** Minimum 1 km operational range (longer range is preferable).
* **Flight Altitude:** Capable of flying at least up to 20 meters above ground level.
* **Navigation System:** GPS/GLONASS-based navigation with autonomous flight capability and manual override.
* **Obstacle Detection and Avoidance:** Basic obstacle detection is required (omnidirectional obstacle detection and having radars for obstacle detection).
 | Yes/No Provide Details |
| Spraying System:* **Tank Capacity:** minimum tank capacity of 30 (with adjustable spraying width).
* **Spray Nozzles:** Replaceable nozzles with variable spray widths (6 to 10 m depending on nozzle type).
* **Spray Rate:** Adjustable flow rates to accommodate different pesticides and crop needs (up to 8 l/min).
* **Droplet Size Control:** Ensures uniform droplet size (20–200 microns) for effective coverage.
* **Spray Pump:** High-efficiency pump for consistent spraying pressure.
 | Yes/No Provide Details |
| Power and Battery:* **Battery Type:** High-capacity lithium-polymer (LiPo) or lithium-ion (Li-ion). 9 batteries and 3 chargers are required for continuous functioning.
* **Charging Time:** ≤ 3 hours with fast charging options.
* **Swappable Batteries:** Enables extended operations with quick battery replacement.
 | Yes/No Provide Details |
| Operational Features:* **Autonomous Flight Modes:** Pre-programmed flight paths, area mapping, and waypoint navigation.
* **Real-Time Monitoring:** Live data transmission to a remote-control unit and mobile device.
* **Payload Monitoring:** Real-time tracking of tank levels and spray coverage.
* **Emergency Return:** Auto-return to base on low battery or communication loss.
 | Yes/No Provide Details |
| Maintenance and Support:* Easy access to spare parts and servicing.
* User training and comprehensive user manuals.
* Software license: free license for a minimum of 1 year. Detailed info is required.
 | Yes/No Provide Details |
| Certification and Compliance:* CE, FCC, or equivalent international certifications for safety and operation.
* Compliance with aviation regulations in Lebanon.
 | Yes/No Provide Details |

**Table 3: Additional Specifications**

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| Are all equipment of original industrial products and ready to install. | Yes/No Provide Details |
| guarantee for the equipment for a minimum of one year.  | Yes/No Provide Details |
| Are the sensors / devices equipped with all necessary accessories for installation and operation: protective case, mat(s), support(s), an anchoring system, etc.  | Yes/No Provide Details |
| Are all sensor/device enclosures and accessories resistant to water, dust, and radiations.  | Yes/No Provide Details |
| Is access to raw data (in direct or indirect form) provided for validation of field data. | Yes/No Provide Details |
| Are there Documentation, manual and datasheet of the technical specifications of all the proposed material. | Yes/No Provide Details |
| Is the Documentation / Material available on how the data of the monitoring drone can be used for the management of spraying drone.  | Yes/No Provide Details |