Agri Drones & Robotics

Manufacturer & Service Provider

Sirang

Sirang is a company to begin a new era in intelligentization of civilian drones and smart agriculture solution, that will be more productive with new technologies.

Vision

Our vision is to become the leader of intelligence civilian drones and smart agriculture solution in the market, a top player in international market and the source of innovation in the smart solution and artificial intelligence.

Mission

Our mission is to promote and teach the function of intelligence civilian drones operation and provide smart agriculture solution operators and farmers with innovative knowledge and technology.

Our Agriculture Drone

Sirang is one of the advanced and innovative drones in the smart agriculture that creates a significant improvement in Agriculture performance. Our drones with artificial intelligence and accurate positioning systems is able to perform many tasks, including spraying, monitoring products and analyzing the health conditions of fields. The features of our drones include high accuracy in Agriculture operations, reduction of chemical consumption, increase in productivity and improvement of products quality.

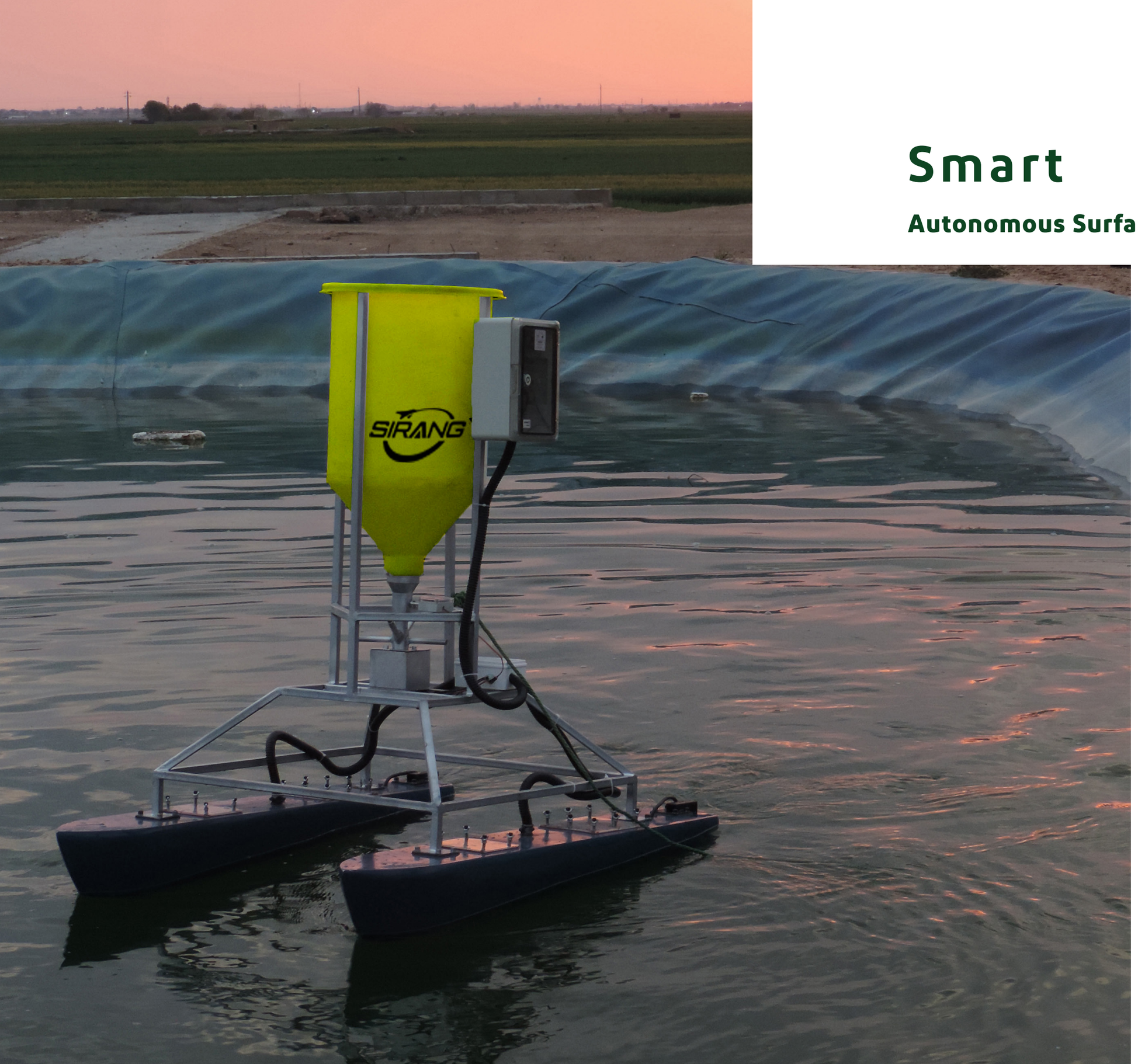
Our agriculture drones, by using advanced technology, has been able to be used as one of the prominent tools in the field of smart Agriculture. Our drones also are able to cover large areas of fields in a short period of time. The special importance of our drone is to improve productivity and reduce environmental pollution and Agriculture costs. Also, they're able to detect potential field problems such as diseases and pests and allow farmers to respond in an optimal and timely manner.

Our drones are used in spraying, seeding, pollination and fogging operations to prevent gardens from freezing. Each of our drone types help farmers improve farm management, reduce resource wastage and increase productivity.

Our sprayer drones are in various dimention and volmue of pesticides **(10, 15, 16, 20 and 30 liters)**. It is important to choose the right sprayer drone based on Agriculture needs and environmental conditions.

Smart feeding

Autonomous Surface Vehicle feeder



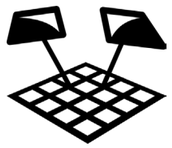
- Ability to integrate with farm management software
- Ability to adjust the feeding in gram per square meter
- Ability to cover the field with the highest efficiency
- Ability to feed by throwing and pouring
- Ability to use with all sizes of pellet food
- Ability to reduce or increase the meal
- The capacity of the food tank is 10 kg
- Strong and corrosion resistant body
- Ability to install monitoring sensors
- Move without stressing the aquatic
- Battery charging with solar energy
- Ability to combine food and air
- Adjustable movement speed
- No need to charge
- Reduction of FCR

AI & Machine Vision

- Target Spraying by Drones
- Detecting Weeds on a Farm
- Larvae Detection and Counting
- Cow Emotion and Hunger Monitoring
- Fish Detection, Classification and Counting
- Distinguishing a sick plant from a healthy one
- Classification and Counting (Ripe or Unripe or maybe Nearly Ripe)
- Smart fire service with fire detection sensor based on machine vision
- Crop type Mapping and Object Classification (Satellite Image Processing)
- Detection objects in high accuracy based on AI with Vision-Based approach
- Intelligent animal counter based on computer vision and artificial intelligence
- Real-time detection of objects with different geometric structures by drones and other monitoring platforms
- Face recognition based on advanced image processing, deep learning and processing face point cloud using single image
- Change detection for soil erosion analysis with photogrammetry-based method in the agriculture industry and environment

Photogrammetry & Robotics

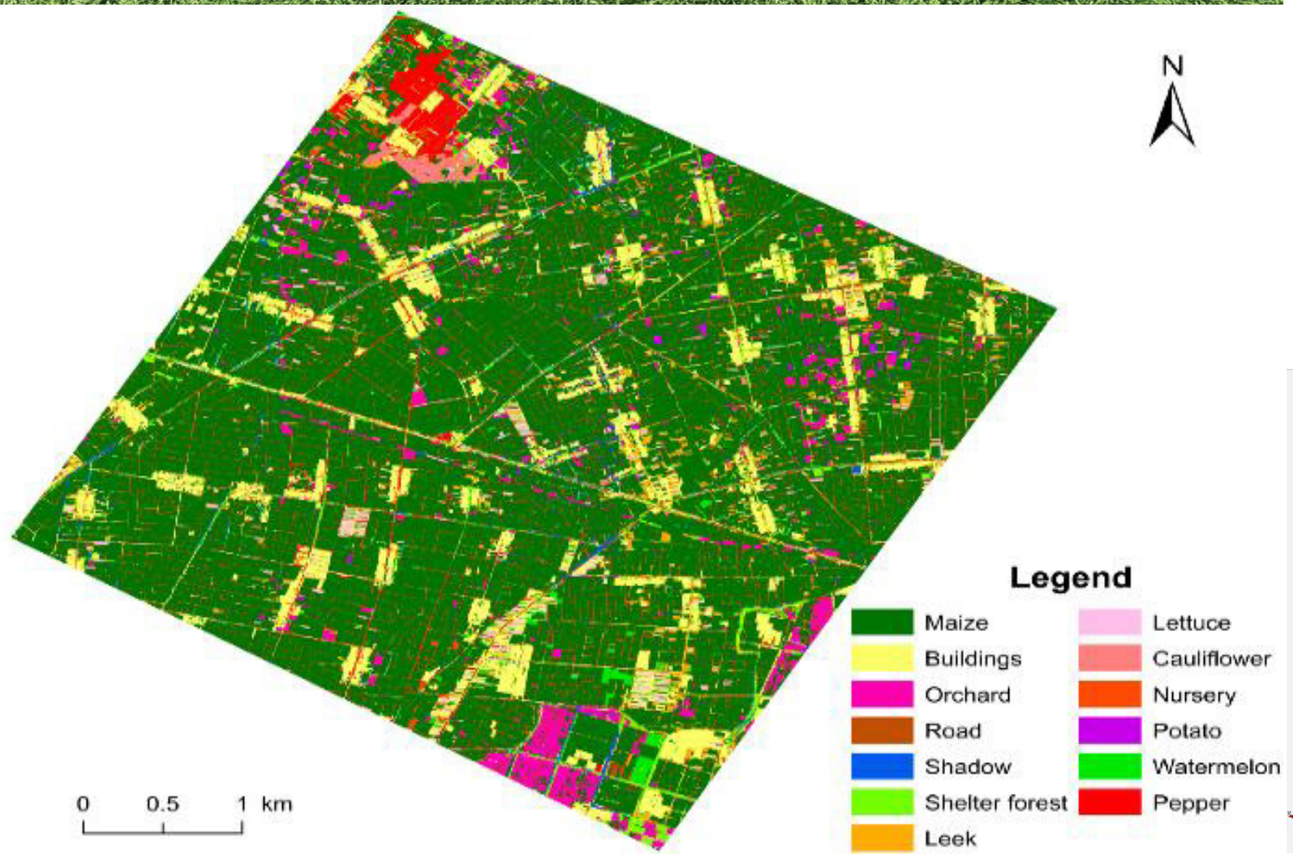
photogrammetry

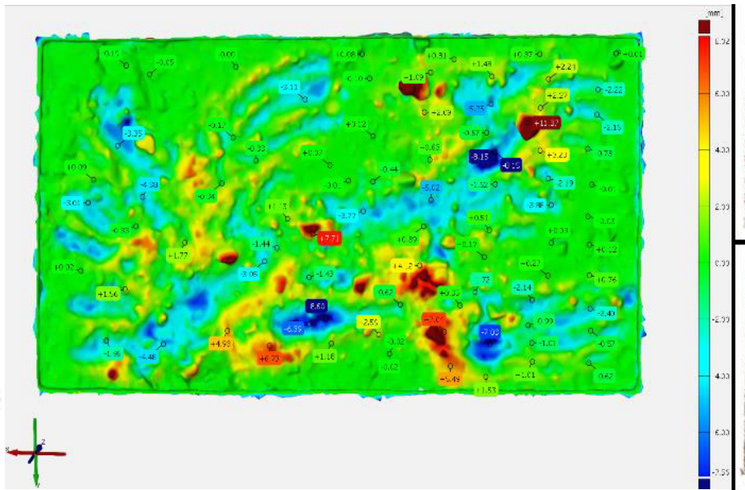


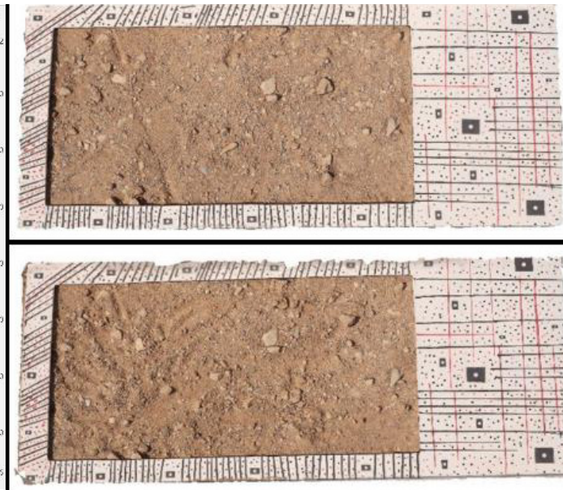
- Modeling of industrial parts and reverse engineering
- Preparation of topographic map using photogrammetry
- Preparing a 3D model of complications with a single image
- Identification of land changes and unauthorized constructions
- Volume calculations for open pit mine monitoring applications
- 3D modeling of cities to prepare large-scale maps with UAV photogrammetry
- Separation of agricultural products using satellite image processing and data analysis
- 3D as-built modeling of religious, ancient monuments and other sites with the combination of short-range photogrammetry and UAV

Robotics

- Intelligent control of drones using NLP natural language processing
- Designing, controlling and manufacturing all kinds of fruit-picking and spraying robots
- Equip all of agricultural drones, such as spraying and seeding drones, with AI and machine vision







Online service application based on

Drones & Satellite

Sirang Plus is a comprehensive application of Agriculture services based on Agriculture drone. It supports all the needs of farmers including field preparation to harvest and sell the products. Farmers can sell their products at the fairest price in their personal virtual store without intermediaries.

Sirang Plus services based on Drones:

- Present the cultivation program according to the field climate
- Estimation of harvest time through thermal map analysis
- Weather monitoring and Meteorological services
- Access to Agriculture drones and services
- Fertilization and precise area
- spraying and Pest controls
- Warm fogging
- sowing seeds
- Pollination

Our services based on Satellite:

- Evaporation and transpiration map
- Farm management dashboard
- Mapping plant characteristics
- Performance estimation
- Index comparison panel
- Meteorological services
- Soil characteristics map
- Cardinal temperature
- Awareness of pests
- Time series graph
- Weekly reports
- Growth chart
- Phenology

Pollinator Drone

- Height: 30 cm
- Easy maintenance
- Installable on sprayer drones
- Carrying capacity of 300 grams of pollen
- Ability to customize design for major customers
- Beautiful and integrated design to reduce the number of parts
- Increasing the productivity of Agriculture field up to four times
- Ability to adjust the output flow in the range of 20 to 40 gram per minute

Seeding Drone

Seed technology refers to a set of methods that are used to improve the quality, yield and resistance of seeds in Agriculture processes, which include seed coating, seed treatment and seed spraying methods.

- Seed treatment
- Seed spreading module
- Module of seed firing into the soil
- Importance for seedless plant species
- Storage and preservation of seeds module
- Facilitating the rapid reproduction of plants
- Chemical concentrating and coating the seeds
- Resistant seeds to adverse environmental conditions, pests and viruses
- Sowing and spreading seeds on the fields using seeding drones and other module

Remote sensing

Monitoring and Management of Water & Soil

Agriculture field

- Automatic irrigation with scheduling
- Smart irrigation with different sensors
- Mmanagement of pest control tools
- Water consumption management
- Communication with satellite
- Communication with drones
- Weather information
- Soil condition

Fish breeding pond

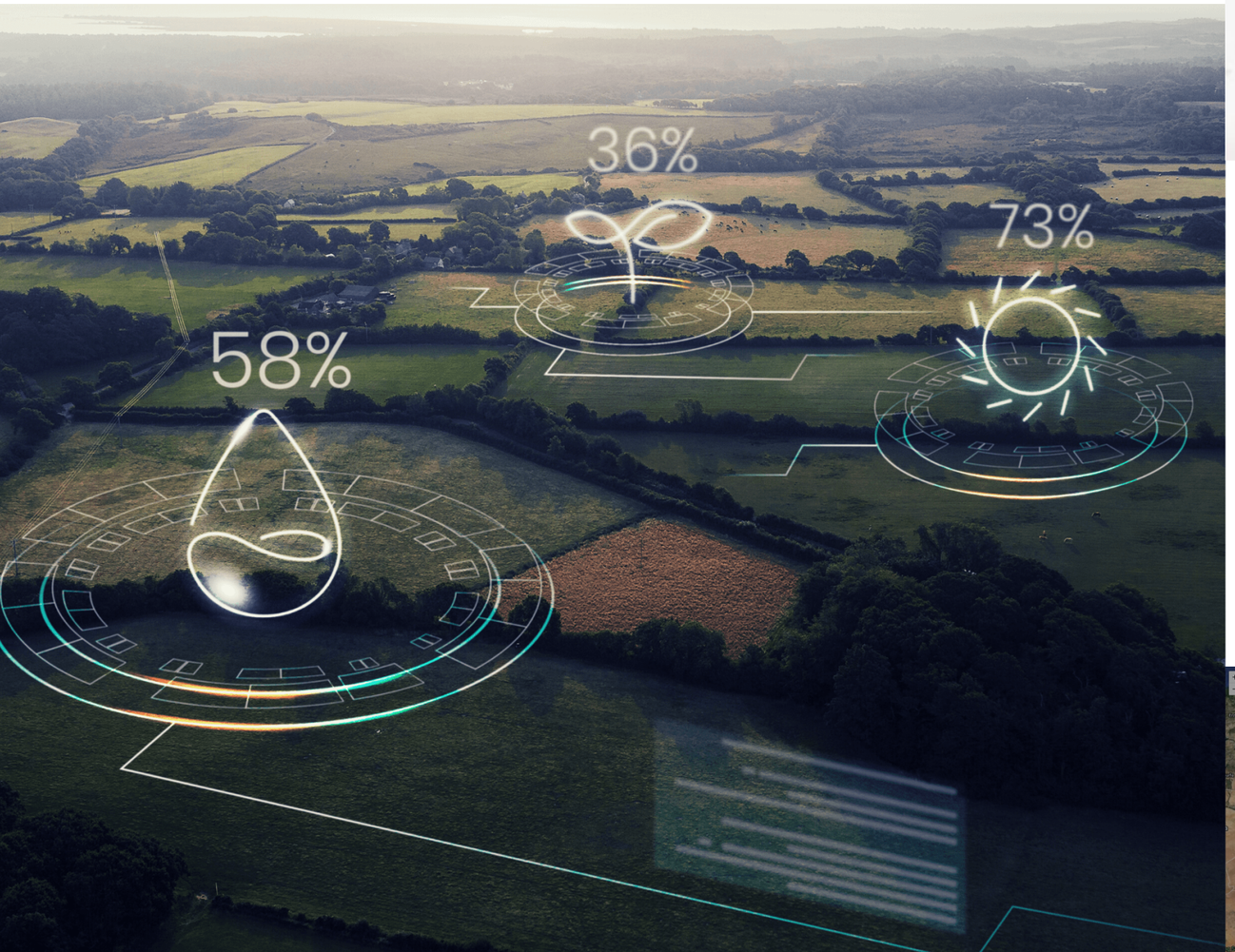
- Management and control of electrical processes of the pool
- Proper water intake management
- Water consumption monitoring

Water reserve

- Management of fair distribution of water to all parts of the agroindustry

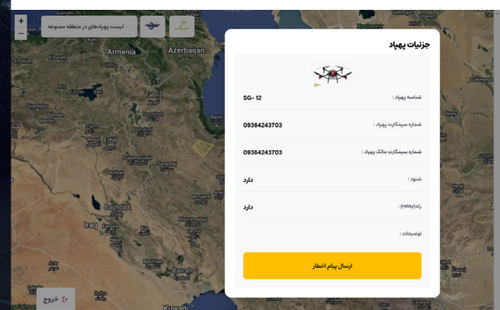
Greenhouse

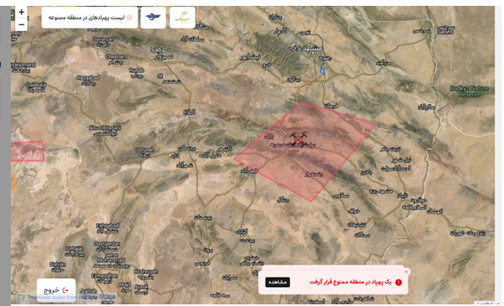
- Automatic management and control of greenhouse processes
- Greenhouse climate management



Drone tracking module

- 256 bitsSecurity level
- Dimensions: 5 x 10 x 1 cm
- Power consumption about 150 mA
- The battery can keep the system on for a week.
- Less than one second delay in send and receive data





IoT based Monitoring and Control System

Smart Green House

Type of online indoor monitors:

1. Single node monitoring; The climate monitoring device components included:
- sets of sensors
- microcontroller board
- a data transmitter to the server

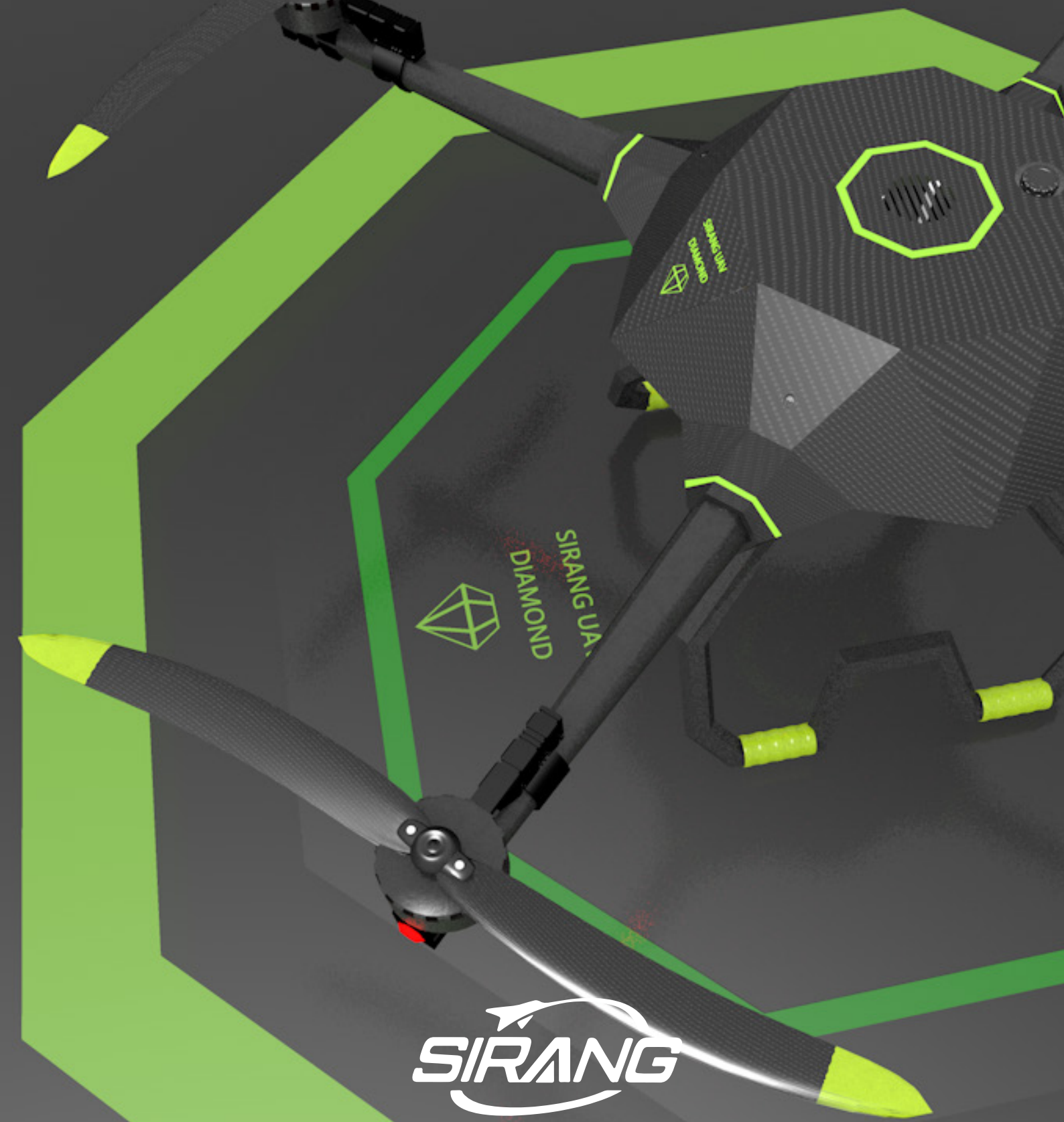
According to the needs of the greenhouse owner, this device has the ability to measure the following parameters using appropriate sensors:
- Humidity inside the greenhouse
- The temperature inside the greenhouse
- The intensity of sunlight inside the greenhouse

2. Multi node monitoring

Monitoring several halls together with one transmitter and several sets of sensors in different halls

Our reason to develope the Smart Green House:

1. The Global Water Crisis
2. Poor ability to control suitable conditions for indoor cultivation environment: as a result, causing the growth of pests and diseases and the use of poisons and fungicides in the greenhouse.
3. Severe sudden damage to the greenhouse, as a result of not knowing about critical conditions



SIRANG

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