

PRODUCT BROCHURE



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FOUNDED IN 2017, SKYSYS FOCUSES ON THE FIELD OF DRONE EMPOWERMENT AND IS A FULLY AUTOMATED DRONE OPERATION PROVIDER WITH MATURE COMMERCIAL OPERATIONS IN CHINA, PROVIDING INDUSTRY USERS WITH ARTIFICIAL INTELLIGENCE SOFTWARE PRODUCTS BASED ON DRONE HANGARS AS WELL AS THE CLOUD, REALIZING THE FUNCTIONS OF AUTOMATIC CHARGING, AUTOMATIC SCHEDULING, AUTONOMOUS FLIGHT, AUTOMATIC ACQUISITION AND AI ANALYSIS OF DRONES, MAKING DRONE INSPECTION TRULY "HUMANLESS".



CONTENTS

01	COMPANY OVERVIEW	1
02	INTRODUCTION OF PRODUCT SYSTEM	3
03	DRONE AUTOMATION HARDWARE PRODUCTS	5
	UltraHive Mk4 Pro UAV Dock Station	5
	UltraHive Mk5 UAV Dock Station	7
	MobileHive Mk3 UAV Carrier	9
	UltraHive MkZ eVTOL Dock Station	11
	UltraPad Micro Drone Dock Station	13
	UltraHive MkX Light Drone Charging Dock Station	15
	GroundMast UAV Base Station	17
04	SKYCAB UAV SYSTEM	19
05	DRONE SOFTWARE PRODUCTS	21
	SkyScout UAV Operating System	21
	Skysys Universal Inspector Software	25
	Skysys Electricity Inspector Software	27
	Skysys PV Inspector Software	29



COMPANY OVERVIEW

STAFF SIZE, HONOR PROCESS, COOPERATION UNIT, PATENT PROPERTY RIGHTS

ABOUT SKYSYS

Founded in 2017, Skysys focuses on the field of drone empowerment, providing industry users with artificial intelligence software products based on drone dock stations as well as in the cloud. Skysys is not only the domestic leader in the field of drone automation, but also the first drone automation supplier to export overseas. The product system is divided into four categories: air, ground, cloud and end, including "Skycab" UAV airborne AI module, various UAV dock stations, "SkyScout" UAV cluster operating system, multi-platform human-computer interaction terminal, and a series of image and video processing algorithm modules and UAV onboard payloads, which realize the functions of UAV automatic charging, automatic scheduling, autonomous flight, automatic acquisition and AI analysis. The UAVs are equipped with the following functions: automatic charging, automatic scheduling, autonomous flight, automatic collection and AI analysis, making the UAV inspection truly "unmanned". The company has cooperated with many Fortune 500 companies such as Alibaba and Huawei, and its products have been applied to smart cities, power grid inspection, security emergency, PV inspection and other scenarios. The company has hundreds of intellectual property rights and patents.

COMPANY SCALE

The company currently has more than 150 people, 70% of whom are R&D personnel. The team consists of senior UAV flight control experts, senior embedded development experts, senior big data field experts, and technicians in image recognition and artificial intelligence, with a number of core patents in UAV automatic charging, machine vision, scheduling algorithms, and data processing.

COMPANY HONORS

Skysys, as a national high-tech enterprise, owns more than 100 patents and intellectual property rights, and has won various awards and distinctions at home and abroad. 2020, the company was selected as one of the "Top 50 Global UAV" enterprises; 2021, the company deeply participated in the development of the world's first UAV load interface standard (IEEE1937.1-2020), and was selected as a potential "unicorn" enterprise in Jiangsu Province. In 2020, the company was selected as one of the potential "unicorn" enterprises in Jiangsu Province, etc.

COOPERATION UNIT



COMPANY SNAPSHOT



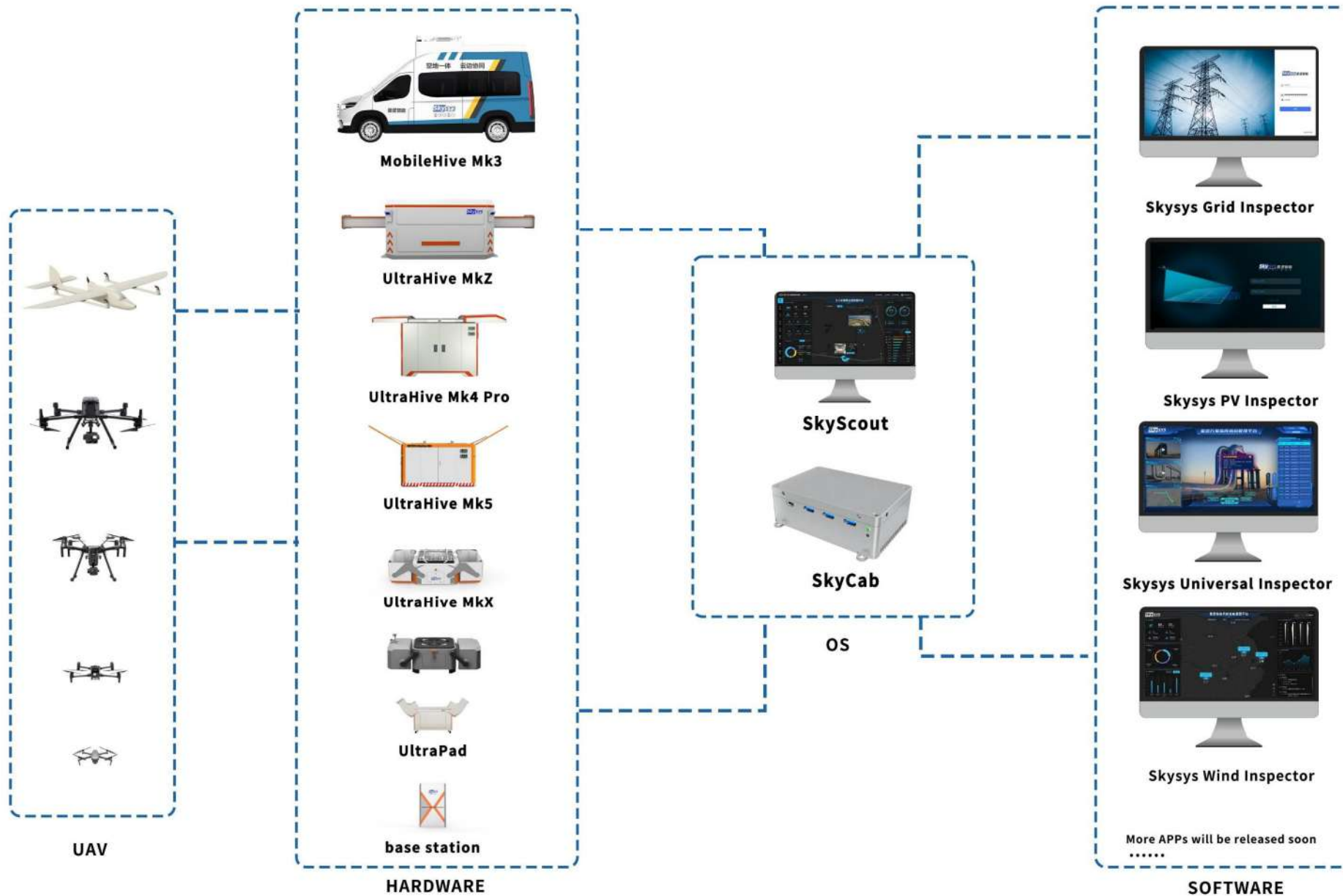
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INTRODUCTION OF PRODUCT SYSTEM

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UltraHive Mk4 Pro UAV Dock Station

Skysys UltraHive Mk4 Pro is a leading all-in-one drone charging and swapping dock station. The onboard kit connects to the drone interface through a quick charging connector, supporting automatic charging and forward compatibility for multiple drone models, allowing customers could adapt drone iterations. Meanwhile, the dock station supports DJI M300RTK automatic charging and automatic power change. The airframe is designed with high-strength stainless steel and magnesium-aluminum alloy frame structure and IP54 level rain and dust-proof standard, which can provide safe and comfortable charging, storage, data exchange and other basic services for drones in the field environment.

 IP54 industrial standard	 High-strength structure material	 Support DJI M300 charging and switching batteries	 24 hours standby
 Remote monitoring	 Support 4G/5G network	 Identification safety	 Multi-Model compatible



CONFIGURE PARAMETERS

Model	Mk4 Pro
Size	2.1m*1.73m*1.6m (closed state)
Weight	790kg
Power Supply	220V mains power
Power Consumption	2300W rated + 350W standby
Installation Method	Cement ground four-point anchoring
Network Condition	100M+
Wind Resistance Level	Class 6
Protection Level	IP54
Single Mission Time	30min
Maximum number of flights per day	10-30 times
Whether to support multi-model charging	Yes
Whether to support multi-model power exchange	Support DJI M300 RTK









APPLICATION SCENES

Suitable Scenarios: public security, emergency, energy, smart city and other scenarios.



UltraHive Mk5 UAV Dock Station

The dock station is certified with IP54 industrial protection rating and features a bloom-open design, which significantly improves the dock-station's wind and rain resistance, making it more suitable for field deployment. The dock station supports automatic charging of multiple models of UAVs and is forward compatible. The dock station as a whole adopts the concept of lightweight functional module integration, each functional kit is processed with special molds, and each module can be transported independently, reducing the weight of the whole machine by 45% and the volume by 37%, saving transportation costs and requiring lower weight bearing on the rooftop.

 <p>Multi-Model charging</p>	 <p>IKEA STYLE transportation and installation</p>	 <p>Light weight and user-friendly</p>	 <p>IP54 industrial standard</p>
 <p>Support 4G/5G network</p>	 <p>Automatic charging</p>	 <p>Remote Monitoring</p>	 <p>Authentication</p>

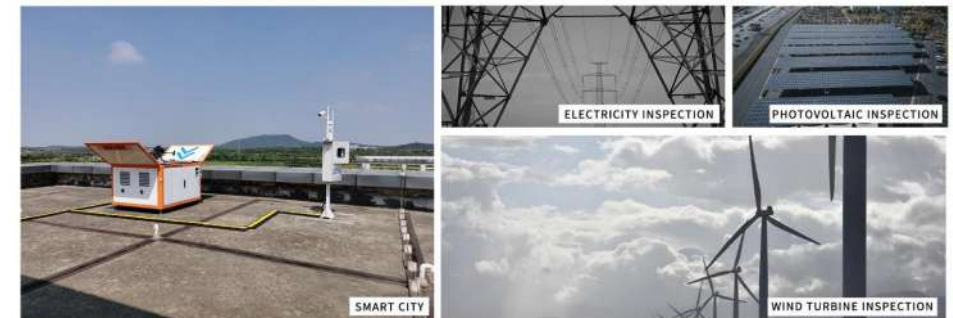


CONFIGURE PARAMETERS

Model	Mk5
Size	1.9m*1.7m*1.2m (closed state)
Weight	460kg
Power Supply	220V mains power
Power Consumption	1500W rated +260W standby
Meteorological Monitoring	Wind speed, Wind direction, Rainfall, temperature, Humidity, Air pressure
Network Conditions	100M+
Installation Method	Cement ground four-point anchoring
Wind Resistance Level	Class 6
Protection Level	IP54
Single Operation Time	30min
Maximum Daily Flight Frequency	10 times +
Whether to support night landing	Yes

APPLICATION SCENARIOS

Applies to smart city, energy and other normal inspection application scenarios, especially suitable for deployment scenarios such as rooftop with low gravity.



MobileHive Mk3 UAV Carrier

MobileHive Mk3 supports three types of power supply, its flexible characteristics make it more suitable for a variety of application scenarios, it can realize point-line surface integration inspection and create a 5-minute attendance circle.

			
Air-Ground integrated perspective	Flexible deployment	Route planning online	Multi-Model charging
			
Big Data analysis	Remote monitoring	Visual Control terminal	4G/5G netlink



CONFIGURE PARAMETERS

Model	Mk3
Size	5940mm*2735mm*3300mm
Displacement	2.0T
Driver's License Requirement	C1
Gasoline Generator	3KW
Mode of operation	Automatic
Emission Standard	VI
Landing Platform Size	1.35m*1.35m
Utility Interface	220V 16A special vehicle charging interface
System Composition	Mobile aircraft carrier, DJI M300+Tendu on-board module
Control System Composition	Aircraft control system, business management system, image recognition system, control system
Vehicle Configuration	Main and passenger airbags, ESP, front/rear radar, back-up camera, front/rear fog lights, multi-function steering wheel, 10.1-inch high-definition touch screen, Smart Link system, cell phone mapping, 4.2-inch multi-function LCD instrument, 8-way adjustable main driver's seat, auto-off headlights, etc.

APPLICATION SCENE

Suitable Scenarios: border patrol, pipeline patrol, river and lake patrol, etc.



UltraHive MkZ eVTOL Dock Station

UltraHive MkZ fully automatic generalized drone airport is adapted to multi-model eVTOL and large multi-rotor drones, with AGV patrol trolley to realize vertical take-off and landing of drones, automatic charging, and provide safe and reliable storage space for drones. The UAV airport is suitable for a variety of UAV industry application scenarios such as grid inspection, river inspection and road inspection management.

 Fully automatic charging	 Lightweight design	 Multi-Model compatibility	 AGV Precise transportation teeking
 120S+5MIN on standby	 Real-time status monitoring	 Remote dispatch	 Fully automated hosting



CONFIGURE PARAMETERS

Model	MkZ
Size	Dock station: 2.2m*2.3m*1.2m AGV trolley: 1.1m*1.2m*0.25m
Weight	≤900kg (including AGV part)
Power Supply	220V mains power
Power Consumption	3500W peak + 750W standby
Meteorological Monitoring	Wind speed, wind direction, rainfall, temperature, humidity, (air pressure)
Network Conditions	4G/5G/RF box
Protection Level	IP54
Single Operation Time	120mins-180mins




APPLICATION SCENARIO

Applies to long line inspection, mine inspection, etc. Especially suitable for the application scenario that requires long time operation of UAV.



UltraPad Micro Drone Dock Station

UltraPad Micro Drone Smart Dock Station is suitable for DJI Mavic 2 Enterprise Advanced Industry Advance and forward compatible, providing automatic charging, recovery takeoff and landing, safe and reliable storage space for drones. The dock station is suitable for many UAV industry applications, such as construction sites, utility poles and towers, rooftop platforms, substations, industrial parks, and many other applications. The dock station is light in size, stable and reliable, with low operational risk and high safety.

			
≥IP54 industrial standard	Lightweight and compact	Remote control	All-Weather operation
			
Autonomous cruise	Automatic charging	Multi-Network support	Multi-Model compatibility



CONFIGURE PARAMETERS

Model	UltraPad
Size	1.0m*1.0m*0.9m (closed state)
Weight	80kg
Power Supply	220V mains power
Power Consumption	400W rated
Meteorological Monitoring	wind speed, wind direction, rainfall, temperature, humidity, air pressure
Installation Method	Cement ground four-point anchoring
Temperature Control Method	Industrial air conditioning
Protection Level	IP54
Working Temperature	-20°C-40°C

APPLICATION SCENARIOS

SUITABLE SCENARIOS: GRID INSPECTION, SMART CITY,ETC.



03 DRONE AUTOMATION HARDWARE PRODUCTS

UltraHive MkX Light Drone Charging Dock Station

UltraHive MkX Light Drone Charging Dock Station

UltraHive MkX is the flagship UAV charging dock station of Skysys Intelligence, based on the senior R&D team of Skysys intelligent technology that has been deeply involved in the industry for many years, with the features of light weight, flexible deployment and fast take-off and landing, which can meet the needs of users more. At the same time, it fundamentally reduces the cost of use for end users with a very high cost performance ratio.

产品特点



Light weight and small size



Flexible deployment



Fast take off and Landing



Lower power consumption



High cost performance



Protection class



CONFIGURE PARAMETERS

Model	MkX
Size	1100*1280*1200mm
Weight	180KG (including RF base station)
Power Consumption	500W rated +250W standby
Power Supply	220V mains power
Protection Level	IP55
Meteorological Monitoring	wind speed, wind direction, temperature, humidity, rainfall
Working Environment Temperature	-20°C-40°C
Installation Method	Cement ground four-point anchoring

APPLICATION SCENARIOS

Suitable Scenario: Smart city, energy inspection .



GroundMast UAV Base Station

The product is composed of intelligent base station and dispatching platform, which is an intelligent terminal product that can automate UAV inspection tasks. Users can plan route tasks through the cloud-based dispatching platform, and realize automatic takeoff and landing of UAVs, autonomous inspection, photo/video return, and automatic report generation through the intelligent base station. The product has no physical form of fixed dock station, and the workflow is done through manual placement of drones and battery replacement. For customers without fixed hangar needs, it greatly reduces the cost and makes deployment more flexible.

PROTECTION GRADE

The main body is sealed and designed to achieve IP55 protection grade, which can adapt to the harsh deployment environment.

ECONOMICAL AND PRACTICAL

Compared to fixed installation UAV automatic hangars and UAV mobile carriers, simple dock stations are lightweight, flexible in deployment and have lower investment costs.

SIMPLE OPERATION

The site deployment conditions are simple, requiring only power and network supply. In the whole process operation, only manual placement of the UAV to the landing and take-off point is required, and then the flight mission can be issued through the dispatching system.

FLEXIBLE DEPLOYMENT

This product adopts the base station method, no volume and weight of the physical form of the hangar, the deployment only requires the installation of the base station, the deployment method, and scenarios more flexible.



CONFIGURE PARAMETERS

Model	Simple hangar
Size	225*540*900mm
Weight	35KG (including air conditioner)
Material	stainless steel, aluminum alloy
Working Temperature	-20 - 45 °C
Accessory	Weather fixing bracket, base counterweight (optional)
Mounting Method	Flooring, wall hanging, etc.
Protection Grade	IP55
Power	240W
Power Supply	mains power
Network	4G/5G
Meteorology	Wind speed, wind direction, temperature, humidity, rainfall

APPLICATION SCENARIOS

Suitable Scenarios: smart city, energy class and other normal inspection application scenarios, especially suitable for deployment scenarios such as rooftop with low gravity.



SkyCab UAV System







SkyCab UAV computing terminal is a UAV autopilot and identification module. It is equivalent to the "brain" of the drone, with powerful edge computing capability, and is a powerful support for the "cloud-side" collaborative and efficient working mode, with $\pm 5\text{CM}$ visual landing accuracy and over 20,000 times of safe takeoff and landing verification, bringing more intelligence to the drone. working ability.

SkyCab-M5

Suitable for DJI M300, M210, M30 and other small and medium-sized industrial drones.



产品特点

 <p>IMAGE RECOGNITION REAL-TIME IMAGE PROCESSING FOR REAL-TIME DETECTION IDENTIFICATION AND TRACKING OF UAV INSPECTION TARGETS.</p>	 <p>AUTONOMOUS FLIGHT EMBEDDED 4G/5G MODULE AND UNBUNDLED REMOTE CONTROL TO ACHIEVE ULTRA-LONG-RANGE DRONE AUTONOMOUS FLIGHT.</p>	 <p>AUTOMATIC OBSTACLE AVOIDANCE IT CAN AUTOMATICALLY AVOID OBSTACLES WHEN FLYING TO ENSURE THE SAFETY OF DRONE FLIGHT.</p>
 <p>ENVIRONMENT AWARENESS AUTONOMOUS UAV DIAGNOSTICS, SAFE FLIGHT AND PRECISION LANDING.</p>	 <p>INSTANT POSITIONING FLIGHT LOCALIZATION BASED ON UAV VISION AND RADAR.</p>	 <p>AI COMPUTING CONTROL CUSTOMIZED DEVELOPMENT FOR DIFFERENT INDUSTRY NEEDS.</p>

CONFIGURE PARAMETERS

CONFIGURE PARAMETERS	Specific parameters
	SkyCab-M5
Image processor GPU	384-core NVIDIA VoltaTN GPU with 48 Tensor cores
Central Processing Unit CPU	6-core NVIDIA Carmel ARM®v8.2 64-bit CPU 6MB L2+4MB L3
Computing Power	21TOPS
Deep Learning Accelerator	2 NVIDIA engines
Vision Accelerator	7-channel VLIW vision processor
Memory	8GB/16GB 128-bit LPDDR4× 59.7GB/s
Operating System	Ubuntu
Solid State Storage	128G emmc+ expandable TF card slot
Video Encoding Capability	2x 4K60 4x 4K30 10x 1080p60 22x 1080p30 (H.265) 2x 4K60 4x 4K30 10x 1080p60 20x 1080p30 (H.264)
Video Decoding Capability	2x 8K30 6x 4K60 12x 4K30 22x 1080p60 44x 1080p30 (H.265) 2x 4K60 6x 4K30 10x 1080p60 22x 1080p30 (H.264)
Working Environment	Ambient temperature -25° C to +50° C, relative humidity 5% to 95% (no condensation)
Protection Level	IP55 protection rating
Length, Width and Height	Length 84mm, width 56.5mm, height 30mm
Weight	Approx. 145g (including antenna and basic type bracket)
Wired Network	10/100/1000Base-T adaptive Ethernet port (expandable via OSDK connector)
External Interface	1 each Micro HDMI 2.0, USB3.0, USB2.0 and OTG ports, 3 TTL UART serial ports

SkyScout UAV Operating System

SkyScout operating system has WEB and PAD terminals, supporting the delineation of inspection tasks and issuing them, so that managers in the center can control the drones and dock stations and check the operation situation with the WEB terminal; field personnel can take over the drones manually with the PAD terminal to meet the real-time operation requirements.

CONFIGURE PARAMETERS

Parameters	Whether to support	Parameters	Whether to support
Route Planning	✓	Battery Management	✓
Video Surveillance	✓	Project Management	✓
Mission Management	✓	Real-time data	✓
Mission Scheduling	✓	Full life cycle management of equipment	✓
Remote Control	✓	Media Resource Data Management	✓
dock station Management	✓	User Management	✓
Drone Management	✓	Security Authentication	✓



2×2 FLEXIBLE DEPLOYMENT

The System with 2 modes, 2 types of deployment for 2X2 flexible configuration, whether it is public network access, private network access, or single-site patrol, multi-site transfer of flight, can be selected according to the actual application to meet the diverse needs of enterprises.



Public Deployment

The SkyScout UAV dispatching system deployed in the public cloud for all users in the society is deployed and maintained by Starlogic Intelligence. Users can access the drones and dock station equipment under their authority through the Internet anytime and anywhere using their accounts, which is convenient and fast.



Privatized Deployment

The chess cloud drone dispatching system is deployed in a private network environment on the user's side, and all services are deployed locally in the user's independent server room or government cloud, with exclusive access to services, support for customization, security and reliability.



Checkers Mode

The UAV relies on its own 4G or 5G network access capability to directly access the cloud, thus being able to decouple from the dock station, the UAV's flight range is not restricted and it can take off and land between different dock station sites, so this operation mode is called checkers mode.



Silo Mode

There is a "one-to-one" binding relationship between a single UAV and a single dock station site, and the UAV operates within the radius of the RF coverage of the dock station site and follows the operation mode of "coming from where and going back to where", so this operation mode is called island mode.



PRODUCT FEATURES



Remote Control

Control drones and drone dock station clusters without leaving home.



Open Interface

Three levels of open API interfaces.



Hierarchical Management

Hierarchical control of account rights to ensure security of use.



Multi-Mode operation

Support dock station independent, cluster and other operation modes, support UAV pair flight and jump flight.



Public/Private

Network Deployment support public and private network deployment, customized on demand.



AI Analysis

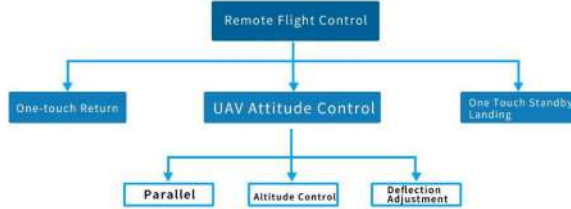
Provide multi-application scenario AI analysis function.

05

DRONE SOFTWARE PRODUCTS

SkyScout UAV Operating System

REMOTE FLIGHT CONTROL



VISUAL ROUTE PLANNING

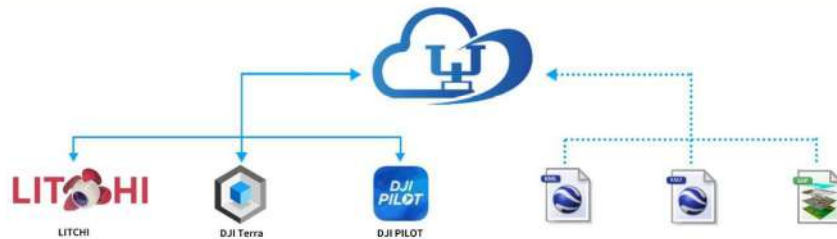
Users can flexibly choose the mission production method according to their needs. SkyScout Base supports manual mission planning through the visual GIS system, as well as importing mission files output by third-party route planning tools, and also supports the import of accurate pointing data generated through pre-flight manual flights to enable accurate re-flight later.



- Customized Layers**
No-fly zone, POL network, Operating range
- Self-Built Maps**
2D self-built tile map, 3D high precision twin model
- Waypoint Action**
Video, Photo, Hover, Tilt, Zoom

STANDARD TASK FILE IMPORT

Supports exporting/importing SkyScout task files by itself, and also supports importing a variety of task files generated by third-party route planning tools. Supports import and display of KML, KMZ, SHP and other standard files, and supports WGS-84 and GCS-02 coordinate system standards.



TASK ASSIGNMENT

ID	NAME	STATUS	START TIME	END TIME	REPEAT	TYPE
1	MISSION 1	COMPLETED	2023-07-10 10:00	2023-07-10 11:00	ONCE	PHOTO
2	MISSION 2	PENDING	2023-07-10 14:00	2023-07-10 15:00	ONCE	PHOTO
3	MISSION 3	PENDING	2023-07-11 09:00	2023-07-11 10:00	ONCE	PHOTO
4	MISSION 4	PENDING	2023-07-11 14:00	2023-07-11 15:00	ONCE	PHOTO
5	MISSION 5	PENDING	2023-07-12 09:00	2023-07-12 10:00	ONCE	PHOTO
6	MISSION 6	PENDING	2023-07-12 14:00	2023-07-12 15:00	ONCE	PHOTO
7	MISSION 7	PENDING	2023-07-13 09:00	2023-07-13 10:00	ONCE	PHOTO
8	MISSION 8	PENDING	2023-07-13 14:00	2023-07-13 15:00	ONCE	PHOTO
9	MISSION 9	PENDING	2023-07-14 09:00	2023-07-14 10:00	ONCE	PHOTO
10	MISSION 10	PENDING	2023-07-14 14:00	2023-07-14 15:00	ONCE	PHOTO
11	MISSION 11	PENDING	2023-07-15 09:00	2023-07-15 10:00	ONCE	PHOTO
12	MISSION 12	PENDING	2023-07-15 14:00	2023-07-15 15:00	ONCE	PHOTO

Support for daily, weekly and monthly planning cycle tasks

Support list type and calendar type scheduling management

Support temporary disable/activate single schedule task

ULTRA-LOW LATENCY HD MAP TRANSMISSION



- End-to-end latency <500ms
- 2K 30fps FPV picture quality
- 4 channels, support the first view, site view, internal peep angle, AI real-time screen processing synchronous playback

VISUALIZATION OF TELEMETRY DATA



05 DRONE SOFTWARE PRODUCTS

Skysys Universal Inspector Software

Skysys Universal Inspector Software

Skysys Universal Inspector is a platform that integrates the full-scene empowerment of drones and takes nearly 100 kinds of intelligent AI algorithms. The emergence of Skysys allows industry drones to get rid of the shackles of a single specific platform, and one machine and one platform can meet the seamless crossing of multiple scenarios.

PRODUCT FEATURES

- Real-time flight warning
- Early warning pictures and video view
- Digital anagement of s-cenes
- Multi-screen view display
- Cloud AI detection, on-board AI detection
- Inspection scenario classification
- On-demand customization
- Standard API interface
- Algorithm engine management
- Support offline detection



APPLICATION SCENE

Suitable Scenes: border inspection, pipeline inspection, river and lake inspection, etc.



CASE STUDY

1 PROJECT BACKGROUND (SMART CITY)

Shanghai Lingang, China, Smart City Project is currently the world's largest UAV wisdom system cluster, the project covers a large area, and the daily inspection scenarios are more complex, covering coastline inspection, daily pedestrian and vehicular traffic inspection, holiday security protection, etc.

SOLUTION

Users adopted 8 drones and dock stations, with Skysys Universal Inspector software, to deal with multi-scene AI recognition, UAV automatic takeoff and landing to collect data such as human and vehicle traffic, coastline garbage and illegal tents, abnormal behavior, etc., through Star Logic Viva for recognition and analysis, the inspection results are transmitted back to the Lingang Smart City Management Center in real time, and the management personnel for disposal, greatly saving human resources and improved the disposal efficiency.

2 PROJECT BACKGROUND (PETROCHEMICAL PIPELINE)

In order to cooperate with the enterprise's safe, green, high-quality development, transformation and upgrading development, to create a world-class green, low-carbon, smart city-type refining and chemical demonstration enterprises, a petrochemical company in Guangzhou led the organization to study the "5G + smart petrochemical" special project.

SOLUTION

With the help of 5G network, carry out UAV-assisted pipe corridor (pipeline) inspection. By using Skysys Universal Inspector AI intelligent inspection system, based on the set path, the UAV can automatically fly by trajectory, attitude and shooting parameters to obtain high-quality inspection data. With the help of images and images returned by the 5G online camera in real time, it identifies site abnormalities (including temperature abnormalities, gas abnormalities, construction operations, etc.) and automatically generates abnormal records.

3 PROJECT BACKGROUND (CAMPUS SECURITY)

An industrial park in Anhui, China, is currently a large domestic kitchen production park, due to the project covers an area of large, more transport vehicles to and from the production staff, how to quickly inspect the park, and the formation of an intelligent inspection system with emergency protection, is the park security system to be solved the problem.

SOLUTION In this project, two sets of drone automatic inspection systems are landed, and the drones carry out 7*24-hour uninterrupted alternate patrols, through the use of the Skysys Universal Inspector Smart City AI



inspection system, AI identification of abnormal behavior in the park, illegal parking of foreign vehicles, open fire hazards, such as the discovery of security hazards and other behaviors, the drones immediately report the problem to the security center, and security personnel according to the behavior of the target things to drone shouting to drive away, or site exclusion, etc., forming a rapid disposal closed loop.

05 DRONE SOFTWARE PRODUCTS

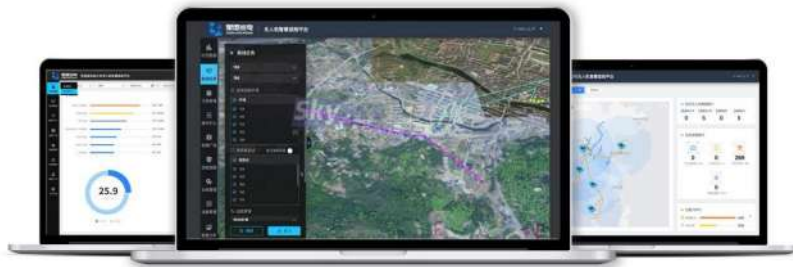
Skysys Electricity Inspector Software

Skysys Electricity Inspector Software

Skysys Grid Inspector is a one-stop smart grid inspection system that integrates substation, distribution network and transmission network inspection into one. Through the high altitude view of the drone to accurately identify the grid defects, to achieve rapid defect elimination management of each line defect information, to achieve accurate and efficient grid inspection.

PRODUCT FEATURES

- Hierarchical presentation of line information
- Defects pinpointed
- Automatic determination of defect level is displayed
- Real-time flight path display
- Refined point cloud route planning
- Provide manual detection and audit mechanism
- Multiple modes of eye-catching interaction
- Defect information 3D view
- Automatic ledger matching



APPLICATION SCENARIO

Suitable Scenario: substation inspection, power supply station inspection, transmission power inspection and other power inspection.



CASE STUDY

1 A PLACE IN WENZHOU, ZHEJIANG, CHINA (SUBSTATION, TRANSMISSION AND DISTRIBUTION)

The terrain of a certain place in Wenzhou, Zhejiang Province, China, is volatile and complex, resulting in a large altitude difference in the overall transmission network, making the traditional human inspection to experience "trekking" type of work, which invariably increases the work intensity of personnel, and frequent high maintenance also makes inspection more difficult, which is not conducive to personal safety protection.

SOLUTION

Deploy multiple Skysys UAV dock-stations along the line for regular inspection of substations and transmission and distribution, enhance the range and inspection radius of UAVs through jump flight operations to meet the needs of long line inspection. Combined with the fully automatic A-inspection software of Skysys Grid Inspector UAV, the UAV transmits the image data of the towers to the background of the management center in real time, helping the operation and maintenance personnel to discover and repair the defects or faults of the towers as early as possible, significantly reducing the human management resources and improving the overall inspection efficiency.



2 A PLACE IN SHANGHAI, CHINA (SUBSTATION, TRANSMISSION AND DISTRIBUTION)

The continuous supply of electricity is an important part to ensure the rapid and stable development of regional economy and normal operation of people's livelihood, but the problem of large deployment range of power grid and long along the line restricts the efficiency of daily inspection by operation and maintenance personnel, and if a fault arises, it is difficult to realize early warning and timely repair, in order to break this passive situation, a place in Shanghai, China introduces Skysys Grid Inspector system to realize the stable transmission of electricity.



SOLUTION

By deploying multiple UAV dock-stations to provide a platform for automatic charging, accurate landing, data storage and exchange, and jump flight operations for UAVs, Skysys Grid Inspector AI algorithms are used to finely inspect the towers, automatically detect insulator defects, intelligently analyze possible hidden dangers and upload them to the background for staff reference, realize point-to-point accurate research and judgment, and let O&M staff walk ahead of faults.

Skysys PV Inspector Software

Skysys PV Inspector is a fully automated drone inspection software developed for PV operation and maintenance, focusing on improving the efficiency of drone PV inspection and providing A defect identification, big data analysis, 3D station modeling, defect elimination and re-inspection to complete the PV intelligent operation and maintenance closed loop, which can help customers realize the refinement of PV station operation and maintenance and whole life cycle management.

PRODUCT FEATURES



Faulty component icon statistics, query

Skysys PV Inspector dual measurement based on visible light and infrared thermal imaging gives statistics of fused defects and fault query.



Dual Light Analysis

Dual fusion of the defect information and location information detected in both images for more reliable detection and more accurate positioning.



Earth-Like Flight

It can visually display the effective flight range of the route in the map, verify the reliable safety of the planned route, and allow the UAV to maintain a constant height difference between the UAV and the target feature by setting a fixed height with the known 3D terrain during the operation, which greatly improves the inspection efficiency.



Faulty component big data management, trend analysis

The PV panel defects are categorized and displayed with statistics, and based on multiple dimensions such as time and location information, big data management and analysis are performed to predict future trends and make recommendations.



Defect Location

Skysys PV Inspector locates the detected PV panel defects and sends the location information to the monitoring and dispatch center.



Fault Navigation

The mobile APP allows you to view the distribution of defects, the severity of defects, and the positioning of equipment to accurately locate faulty components, making it easy for O&M staff to accurately lock the location of defective panels.

APPLICATION SCENARIOS: water PV station, mountain PV station, rooftop PV station, etc.



CASE STUDY

1 PROJECT BACKGROUND

A place in Zhejiang, China, with sufficient light, has distributed rooftop PV as the development feature, making full use of the geopolitical advantages and resources to create a vast area of distributed rooftop PV area. However, due to the large field station, inspection personnel often need to work at high heights, there is a large security risk, and inspection efficiency is also difficult to ensure that there are large security risks.



SOLUTION

Using the Skysys PV Inspector AI inspection system, we modeled the site, divided the PV site area, marked each PV panel ID, and realized intelligent management. Through the drone to carry out daily inspection and review of defects, and the inspection results generated report uploaded to the operation and maintenance management center, the overall inspection effect has been effectively improved.

2 PROJECT BACKGROUND

A place in Chongming, Shanghai, China, has created a new tourism card of green ecological development with "photovoltaic power generation + Lake crab culture", which has been reported by many media for many times. However, due to the large distribution area of the centralized photovoltaic field station, and multiple photovoltaic panels released on the lake, resulting in further difficulties in inspection, how to efficiently carry out the daily inspection and maintenance of the centralized photovoltaic panels has become a problem to be solved.

SOLUTION

Using Skysys PV Inspector, we model the field station, divide the area of the PV field station and mark each PV panel ID to realize intelligent management. Through drones to carry out daily inspection and defect elimination review, and will generate inspection results to report upload operation and maintenance management center, the overall inspection efficiency increased by 300%.

