

USIS

Unicorn of Smart IoT Service



RPAS On-Smart

Drone Solution

**PRODUCT
INTRODUCTION**

“ Growth history ”

- *SMBA = Small and Medium Business Administration
- *SME = Small and Medium Enterprises
- *ULVA = Ulsan Venture Business Association
- *UMCM = Ulsan Metropolitan City Mayor
- *MOTIE = The Ministry of Trade Industry and Energy
- *CCEI = Center for Creative Economy & Innovation
- *DCMSE = Designated Company for Military Service Exemption

—• 2007 —————• 2008 —————• 2009 —————

08. Technological Innovation type
*SME Selected as a INNO-BIZ

03. Designated as a Global Venture Enterprise in ULSAN

04. Shipbuilding & Marine Fusion IT Technology Project Awarded
Director of * SMBA Commendation

—• 2014 —————• 2015 —————• 2016 —————

06. Designated as a Promising Company by Ulsan Techno Park

08. Management Innovation type *SME Confirmation

08. Selected as a Family business by Ulsan *CCEI

10. Selection of drone pilot service provider for drones(~18')

12. Designated as Export Promising *SME

12. Selected as a Promising ICT Company (K-Global 300)

07. Excellent Service Company (Korea Productivity Center)

09. Conclude an agreement with UNIST as Family Business

2004

08. 'CF Information & Communications Ulsan' founded

2005

03. Company attached Research Institute Established
08. Designated as a Venture Enterprise

2011

11. Awarded KOREA IT Innovation Excellence Award
12. USIS Co.,Ltd – Change company's name

2012

07. Selected as a Good Company to work
08. Selected as One of the Top 500 Enterprises to work

2013

03. *ULVA Industry Activation - Awarded *UMCM Commendation
08. KS Q ISO 9001 : 2009 ISO 9001 : Certificated 2008 Management System
09. 14th *SME Technology Innovation Competition - Awarded Minister Prize of *MOTIE
09. Selected as One of the Top 500 Enterprises to work

2017

03. Enterprise Vitality Law Approval - Approved *MOTIE Business Reorganization
10. Selected as *DCMSE (Research Institute)

2018

04. Certificated Software by GS – MiDAS v2.0
08. Signed an MOU with LG U+ – Drone Business
10. Completion of New Building & Moving – Ulsan Techno Industrial Complex
10. Awarded President Medal of Honor

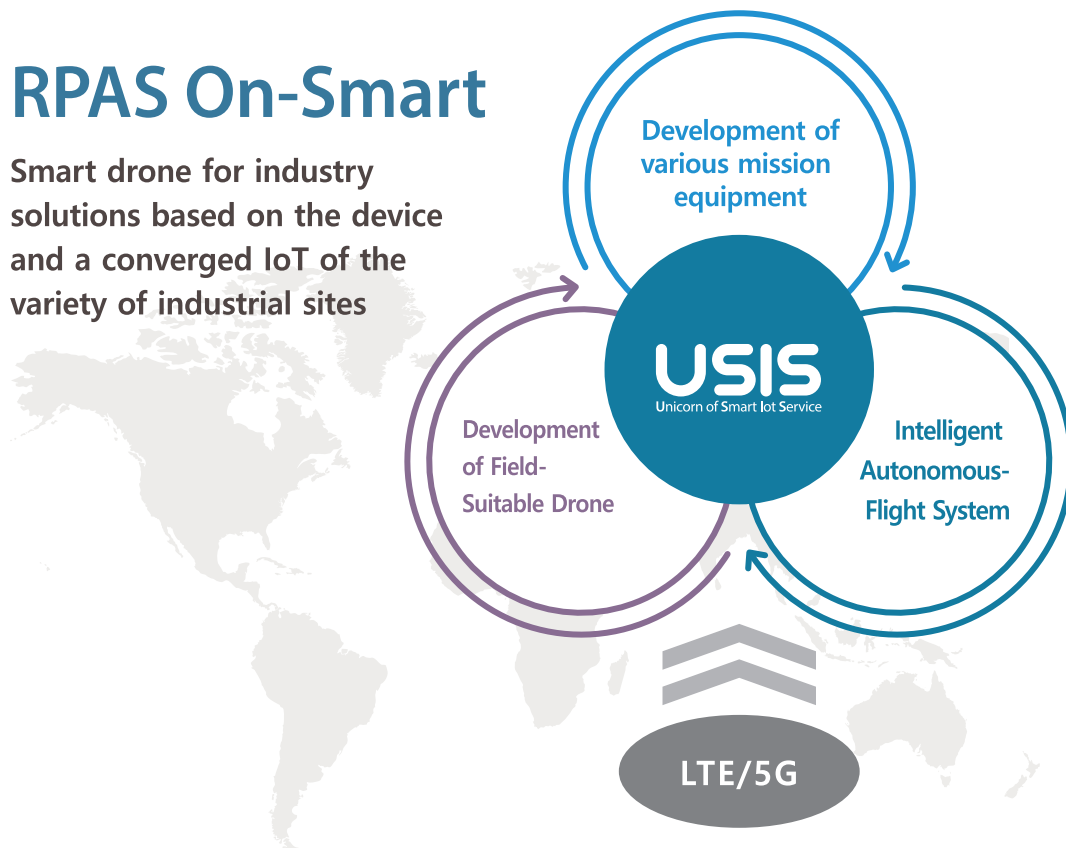
2019

07. Certificated Software by GS – UNIBA
09. Commendation for the chairman of the National Assembly
09. Commendation of the Minister of Public Administration and Security

Solution Overview

RPAS On-Smart

Smart drone for industry solutions based on the device and a converged IoT of the variety of industrial sites



True Industrial Smart Drone Solutions

Unique Evolution of Autonomous Drone Solutions



Solution Configuration

TAEBAEK
Field-compatible
Unmanned vehicle

MIDAS 15년 8000명
Flight Software
development



Required Mission Equipment
Gain scalability
A variety of sensing and technology needs

High-speed wireless communication
Hydrogen fuel cell
On-Device AI
Security module



Drone Design & Application



Drone for Environment



- Real-time VOC concentration monitoring
- Real-time air detecting
- Air Detect Rate Monitoring



Drone for Marine




- Having strong wind resistance to sea and gusty winds
- Buoyancy design


Drone for Fire-fighting




- Performing various fire response missions
- Fireball drop/launch
- Destroy enhanced-glass
- Night duty lights

Main Drone line-up






TB-506A | **TB-504**




Multi Copter - Hexa	Type	Multi Copter - Hexa
70 min.	Fight Time	35 min.
1,620 x 1,720 x 700	Size(mm)	1,220 x 1,260 x 725
72km(20m/s)	Max. Cow	72km(20m/s)
1.5kg	Payload	3kg





Air Detecting/Analysis Module(GDM-101)

- Longest flight among battery-powered drones
- Suitable for long-range reconnaissance flights




- Precision Flying and Precision Hoverling
- Multi-type gas through a variety of mission equipment configurations






TB-305 | **TB-306**




Multi Copter - Hexa	Type	Multi Copter - Hexa
25 min.	Fight Time	25 min.
920 x 785 x 620	Size(mm)	920 x 785 x 620
72km(20m/s)	Max. Cow	72km(20m/s)
2kg	Payload	2kg


- Rapid Maneuver and Reconnaissance
- Drone Suitable for medium/short-range reconnaissance purposes




- Rapid Maneuver and Reconnaissance
- Drone Suitable for medium/short-range reconnaissance purposes

TAEBAEK









TB-503 | **TB-505(A)**



	Multi Copter - Hexa	Type	Multi Copter - Octo
	30 min.	Fight Time	25 min.
	1,620 x 1,720 x 900	Size(mm)	950 x 950 x 685
	72km(20m/s)	Max. Cow	57km(16m/s)
	10kg	Payload	7kg




Transport of marine goods







Launching Device Fire Ball

- Korea's First Drone for Shipment of Marine Goods
- Waterproof and Windproof Design




- Fire initial suppressing drone
- Performing full and individual drop missions







TB-505(B) | **TB-505(C)**



	Multi Copter - Octa	Type	Multi Copter - Octo
	25 min.	Fight Time	25 min.
	950 x 950 x 685	Size(mm)	950 x 950 x 685
	57km(16m/s)	Max. Cow	57km(16m/s)
	7kg	Payload	7kg




Enhanced-glass Destroyer



Lighting

- Enhanced-glass Destroyer Fire Drone
- Direct-destructive and destructive projectile



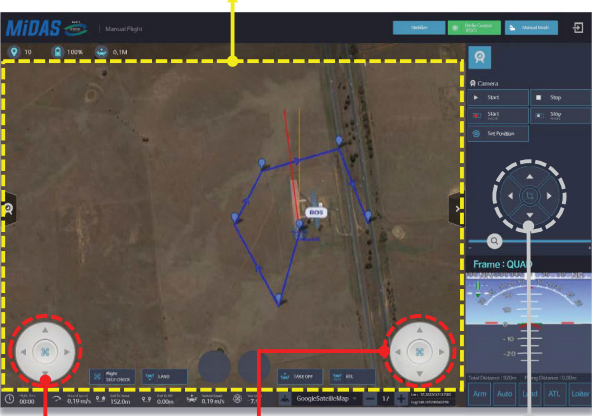
- Lighting drones for night-time firefighting support
- Performing full and individual drop missions

Ground Control System RPS(Remote Pilot Station)

RPS-101	RPS-102	RPS-201
 <p>Weight 5kg Size 428x323x116 Case Fiber Special Plastic Main RF, LTE, Telemetry, Equipment Video Transmit/ Receiver AP/CPU Intel Core-I Memory 4GB Storage SSD OS Android, Windows Time of use 4 hour</p>	 <p>Weight 5kg Size 428x323x116 Case Fiber Special Plastic Main RF, LTE, Telemetry, Equipment Video Transmit/ Receiver AP/CPU Intel Core-I Memory 4GB Storage SSD OS Android, Windows Time of use 8 hour</p>	 <p>Weight 5kg Size 475x365x130 Case Aluminum Main RF, LTE, Telemetry, Equipment Video Transmit/ Receiver AP/CPU Intel Core-I Memory 4GB Storage SSD OS Android, Windows Time of use 4 hour</p>


- Optimized for TAEBAEK and MiDAS operations
- Security-Providing Security with Keys
- Touch-operated UI provided
- Waterproof and dustproof design for safety against pressure and shock
- Convenient portability with integrated design

See a camera images in Real-time



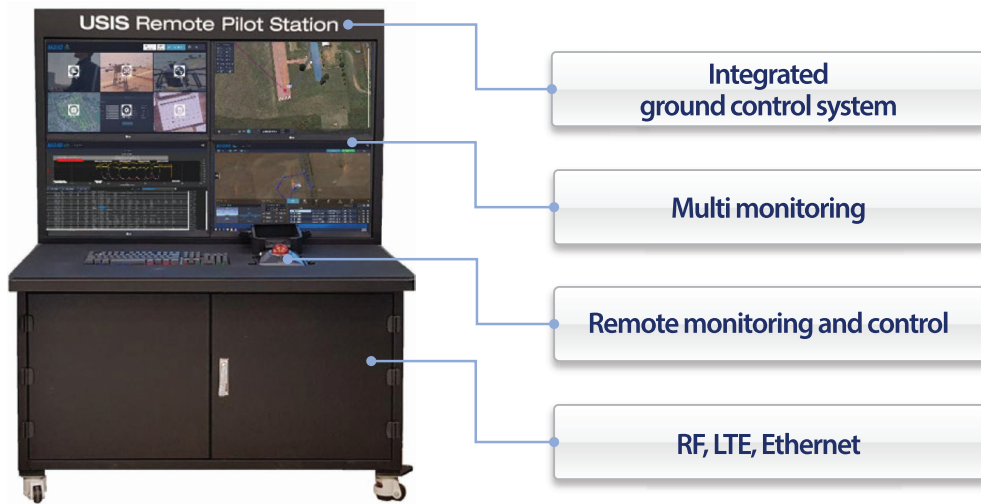
Operation of the front, rear, left, right, top, and bottom of the Drone

- Camera upper/lower, left/right operation
- Other Mission Equipment Control Capabilities



- Providing MiDAS for effective operation of Drone (TAEBAEK) and mounted mission equipment
- Drone control and mission equipment control through MiDAS
- Real-time checking of camera shooting video and location and direction of Drone

Integrated Control System RPS(Remote Pilot Station)



- Integrated control system capable of controlling multiple unmanned aircrafts
- Real-time monitoring of mission performance
- Multi-part display support
- Drone video control
- Drone Autopilot / Mission Control
- Can customize system

Detail Item	Spec
Weight(Kg)	127
Size(mm)	1,180 X 771 X 1,485
Communication	RF, LTE, Ethernet
Configuration	H/W : 24inch LCD Monitor x 4, Server PC, UPS S/W : MiDAS 2.0, Manager(Delivery Progress) Windows 10 Pro

Autonomous Flight System

MiDAS(Mission Driven Autopilot System)

 GS First Class 1, Autonomous Flight System



Point Name Settings
Set distance between points

POINT	Latitude	Longitude	Altitude	Hovering time	Sequence
TAKEOFF	-35.3632612	149.1652369	30	0	X
P-2 [182m]	-35.3648359	149.1646922	30	0	X
P-3 [219m]	-35.3631122	149.1635227	30	0	X
P-4 [143m]	-35.3619661	149.1642416	30	0	X
P-5 [194m]	-35.3614848	149.1642416	30	0	X

Control Panel: Frame: QUAD, Arm, Auto, Land, ATL, Loiter, Flying Distance: 0.00m, Total Distance: 1920m, Altitude: 152.0m, Speed: 0.00m/s, Heading: -7.5°

Point Latitude | Point Longitude | Altitude setting | Hovering time | Point Sequence Adjustment

Missions

- Lamp Mission
- Drop Mission
- Camera Mission
- Destroy Mission
- Gas Mission



- Establishment of Flight Planning Using Way-Point
- Touch-type Way-Point setting
- Adjustable altitude between points
- Automatic point-to-point distance identification



Mobile Landing Station

MLS

- Assist in carrying out missions in mountainous or coastal areas that are inaccessible
- Long-term mission support in pipelines, power lines, industrial facilities that require periodic management
- Supports functions such as remote reconnaissance, broadcasting, etc. assignment and management
- Ability to charge, store, take-off and land through automatic or manual commands
- Easy storage and operation of Drone



Precision Landing System

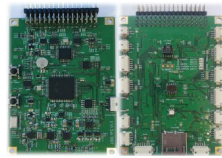
Automatic Charging System

Remote Monitoring and Control

IP43, UPS, LTE/5G

Hardware & Firmware

Black Bird(Flight Controller)

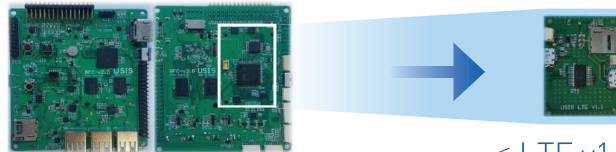


BB-101

IMU



Black Bird(Flight Controller)



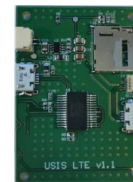
BB-201

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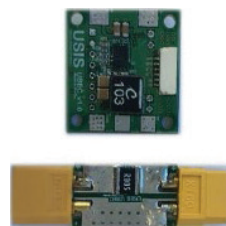
LTE v1.0



LTE v1.1



BEC



UGI



Application field

Port Facilities



- Belt line highway management, that breaking yards
- Corrosion of pipeline in oil port, monitoring for leaks
- Monitoring of Port Security Facilities and Monitoring of Marine Structures

Fire Site



- Quickly identify fire direction, size, surrounding structure, etc
- Broadcast video from Drone to Fire Headquarters
- Fire Headquarters-Site-Fire Site-Fire Site Support
- Minimize damage with fast, accurate initial response

Fishery Facilities



- Checking and managing the amount of fish farm facilities
- Red tide monitoring, research movement of jellyfish
- Land Pollutants Incoming Surveillance
- A crackdown on illegal fishing boats

Decay Site



- Identifying the status of collapsed structures and monitoring the surrounding site
- Location of isolated survivors with IR-Cameras
- Support recovery response decision making with field 3D modeling

Coastal / Oceanic



- Shoreline, depth survey
- Monitoring of coastal erosion and changes in topographic maps
- Maritime search and rescue

Chemical accident Site



- Rapid leakage chemical detection with Drone combined sensor
- Monitoring of the spread range of hazardous substances
- On-premise standby find causes chemicals to capture and analysis

USIS

Unicorn of Smart IoT Service

All Together - Change / Challenge / Champion

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