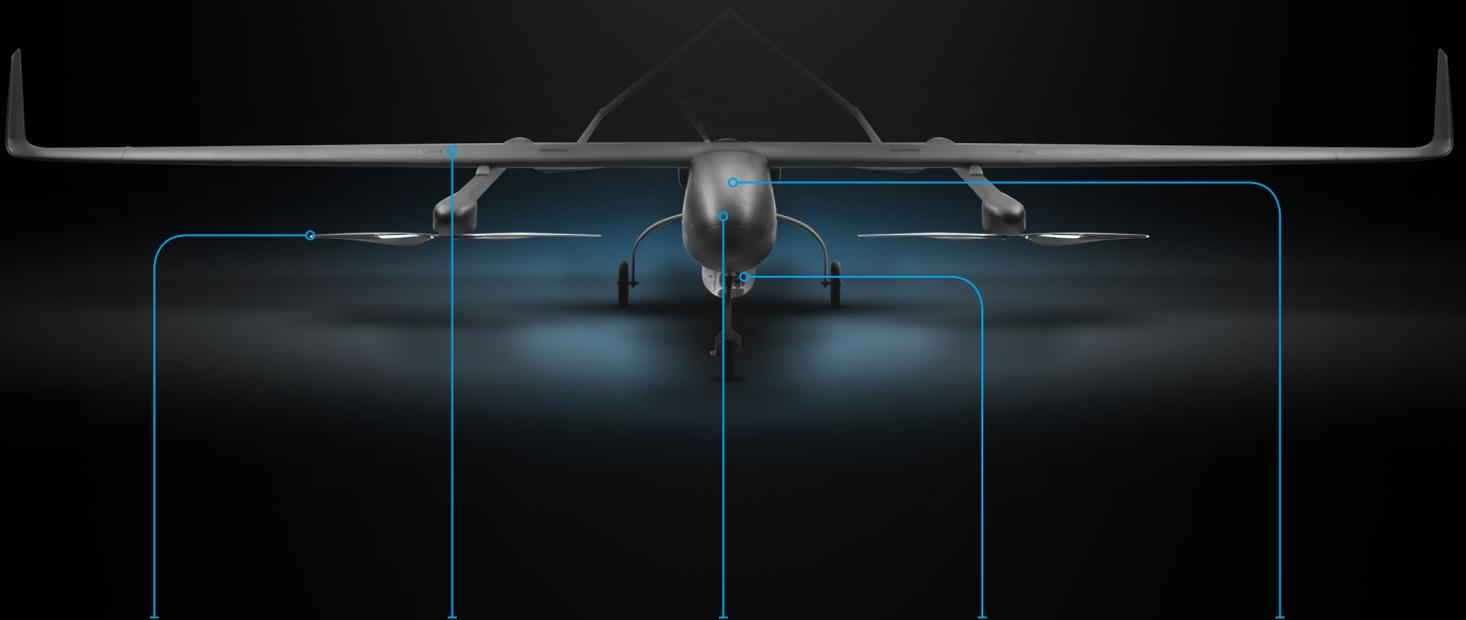


PD-1

Unmanned Aerial System

One stop UAS solution for civil and military applications



10⁺ hrs

Endurance
Продовжителість

10⁺ год



3000m

Service ceiling
Звисотя польоту

3000 м



10kg

Payload
Навантаж.

10 кг



100km

Live Full HD video
Живе Full HD відео

100 км



500⁺km

Operational Range
Діапазон польоту

200⁺ км

THE MOST FLEXIBLE UAV PLATFORM ON THE MARKET

- PD-1 UAV is multipurpose modular fixed-wing UAV with a wide range of options and payloads to fit any mission and operational environment. It is a combat-proven solution that has been officially on service in Ukrainian Armed Forces since 2016 and previously tested for 2 years. During this time, the PD-1 UAS has proved its performance capabilities, anti-jamming features, and overall effectiveness while being able to operate in harsh environment.
- The PD-1 drone is packed with high-end technology, featuring a reliable flight controller, an AES-256-encrypted digital data link, anti-jamming features, inertial navigation unit, navigation lights and much more other features to make drone operations safe and easy.

Rapidly customize you UAV platform on-the-go wherever you are



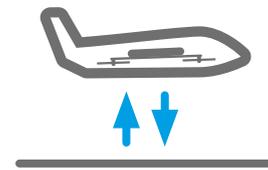
PD-1 drone with conventional takeoff and landing

20 min



PD-1 catapult launch and parachute recovery

20 min



PD-1 VTOL drone

Different payloads



ISTAR payloads



Radio repeater



Cell phone IMSI catcher



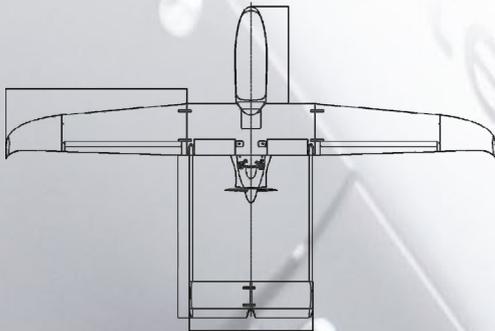
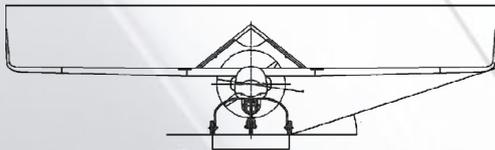
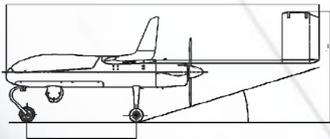
Package delivery



SAR

Advantages

- Choose platform and payloads that you need now and get upgrades as you grow PD-1 multi-purpose platform can be quickly adjusted to current mission right in the field
- Combat-proven solution which is on service in Ukrainian Army
- Advanced anti-jamming and encryption technologies
- Ready for land and maritime operations
- Cost-effective — reduce operational, training, servicing costs by using PD-1 unified UAV platform
- Industry-leading 2 months lead-time
- ITAR-free product
- We can offer technology transfer and start drone production line and service center in your country!



MTOW	40 kg
Max payload	10 kg with full fuel tank
Wingspan	4 m
Length	2.5 m
Propulsion system	4-stroke
Takeoff method	Runway/catapult/VTOL
Endurance	10+ hours
Service ceiling	3000 m
Cruise speed	25 m/s
Stall speed	16 m/s
Takeoff run	100 m (fully loaded)

Flight controller is compliant with D0178 & D0254 standards.

Catapult launch and parachute recovery

PD-1 UAS can be equipped with pneumatic catapult launcher and parachute recovery system. This upgrade simplifies takeoff and landing procedures.



Package delivery system

PD-1 UAV can be equipped with a package delivery system. It can carry up to 7 kg of payload in one piece or in separate containers, which can be dropped with parachutes.

Container size and shape could be customized according to specific applications.

Applications:

- Fast supplies and ammunition delivery to military units. Container holds more than 500 NATO standard .223 cartridges;
- Deliver medications to remote areas; Container holds four P650 UN3373 packages;
- Coast guard. Carry two self-inflating lifesaving buoys to help people in need;
- And much more

UAGU/Class 6.2/16/S/SP-319508

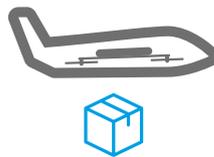
Produced by Team Sky AS Sweden
Phone: +46 8 7024460 Email: info@team-sky.se

The PD-1 VTOL conversion kit is able to convert any existing PD-1 drone to vertical take off and landing fixed-wing drone by adding extra four electric motors. Wing span is increased to 5 meters and flight time remains the same for 10 hours with 10 kg of payload and a full tank of fuel. The system offers a fully automatic takeoff and landing in order to minimize human error during those complicated procedures. Furthermore, PD-1 VTOL allows for easy maritime and can takeoff and land on the deck of the ship.

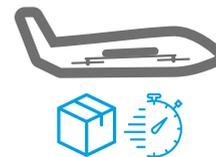
Features



Fully automatic
takeoff and landing



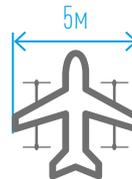
7 kg
payload capacity



Up to 10 hours flight time
with a full load



Fully automatic
flight by route



5 meters
wing-span

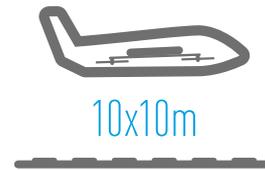
VTOL system advantages



Easy and safe automatic takeoff
and landing



Simplify the training process, minimize the
human factor and have safer operations
due to the high level of automation.



Needs less space for takeoff and landing
than standard fixed-wing drone



Easy maritime operations —
can be operated from a ship



Can hover in the air
for limited time

PD-1 surveillance system consists of high-performance EO/IR gimbal, encrypted long-range Full HD video downlink and ground control station. In addition, video from PD-1 can be broadcasted to multiple portable video terminals within range of 50 km.

**FULL HD**

Full HD day-view camera with 30x optical zoom and high-performance thermal camera can detect and track targets on long distances.

**VIDEO
PROCESSING**

Real-time video processing package with digital video stabilization, target tracking and scene lock.

DATA

Data acquisition package with augmented reality, coordinates detection and a lot other great features. It is a perfect solution for ISR, search-and-rescue, military and border control applications. ISR system is compliant with STANAG 4609.

**COST-EFFECTIVE SOLUTION**

- The PD-1 system is at least three times more affordable than similar systems on the market, meaning you get more drones for the same money.
- Reduce costs for trainings, maintenance and fleet operations by using unified drone platform for all your missions.
- Maintenance and service procedures can be moved to clients country and performed by local staff to reduce operational costs as well.

Collect visual information from all your manned and unmanned platforms in one virtual place. System supports stationary PTZ cameras, drones, ground vehicles and other platforms. Offering great features such as mission planning, information processing, reporting and much more, giving you an ability to quickly analyze all information and make right decisions.

Features

- Receive video feeds from stationary cameras, drones and other sources of visual information in one software
- See all sources of visual feed on map
- Control your sources of visual information
- Create object and targets on map
- Add augmented reality to real-time video feed
- Plan your intelligence missions
- Detect, identify and analyze targets
- Record important events
- Quickly analyze aerial video and photo information
- Create reports based on received information
- Log all changes

Advantages



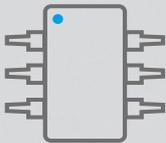
Real-time situational awareness



Mission planning, so you don't miss a thing



Easy to operate interface



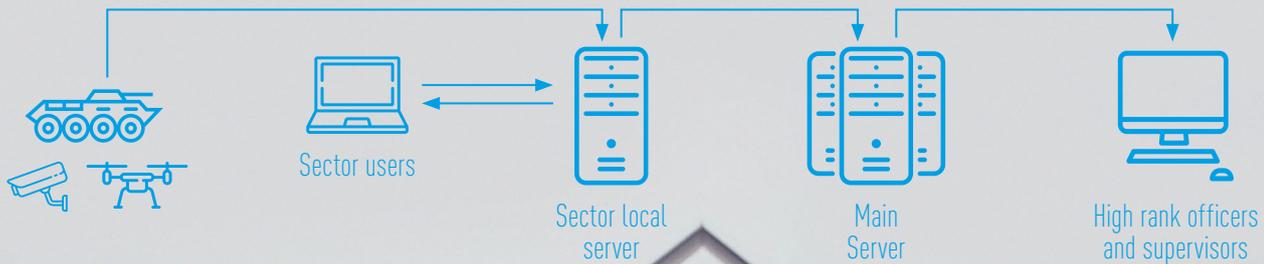
Integration with other systems via API



Tools for video and photo analysis

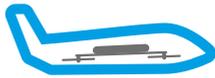


Easy reporting. Create standardized reports



PD-1 platform easily handles ISR missions, artillery fire correction and general support missions. PD-1 UAV equipped with advanced EO/IR payload and stays in the air for up to 10 hours and has operating range of 400 km.

Advantages



Small drone
with low radar signature



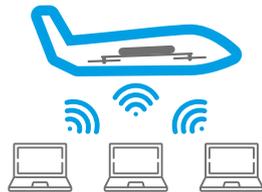
Hard
to detect



Advanced
payloads



Integrations with BMS
and artillery software



Control PD-1 UAV from multiple
ground control stations to increase range
and reduce operation cost



Provide live video from the
drone to multiple groups via
a remote video terminal



Secure encrypted
connection with
anti-jamming features

Recommended system configuration:

- 5 x PD-1 VTOL drones for rapid deployment and redundancy
- 5 x USG-212 gimbals for ISR and artillery correction
- Radio repeater to support troops
- Remote video terminals to support troops and give real-time awareness

Create professional drone intelligence unit to service your ground troops

- Form a special department of professional drone operators to support your troops
- Use one drone unit to service multiple groups of ground troops when needed
- Grant access to real-time intelligence information from the drone directly to ground troops via remote video terminal
- Benefit from drone unit that will be ready for any mission in any environment
- Get maximum results from drone operations due to experienced operators
- Reduce cost and time for training
- Reduce cost and time of operations by using single-unified platform

Get clear view of your border with 24/7 air surveillance. A fleet of PD-1 drones allows for continuous surveillance over specific areas. Motion detection software allows to detect and track objects of interest and eases the work of the payload operator, so as to maximize his effectiveness. Our command and control software allows to plan drone operations and combine video feeds from multiple sources such as stationary cameras, drone and ground vehicles. Remote video terminal allows to receive information from the system in multiple locations.

Recommended system configuration:

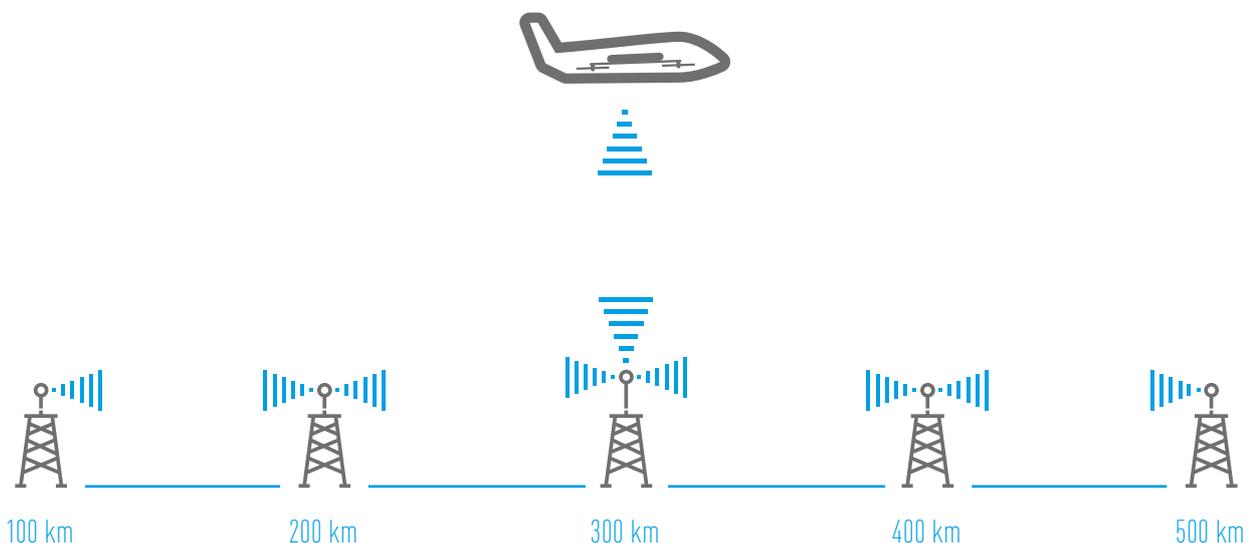
- 3 x PD-1 drones for 24/7 operations
- 3 x USG-212 EO/IR payload
- Command and control software and server
- Remote video terminals to support ground teams
- Motion detection package

Get 24/7 border monitoring solution with mix of stationary rugged cameras and PD-1 drones

- Cover your border with stationary cameras
- Control all cameras from Terminal 2.0 software
- Get instant alert if movement is detected
- Send drones for real-time intelligence and plan your drone fleet missions using Terminal 2.0 software
- Get real-time control over your drone payload and stationary cameras using Terminal 2.0 software
- Record and archive all information, so you can review it later and see all changes
- Provide real-time information to officers on the ground for situational awareness
- Find smugglers and intruders with the IMSI catcher

Control 500+ km of the border with one drone

Automatically switch between ground station during the flight



Use PD-1 VTOL system for fast deployment and response time. Upgraded with movement detection system—specially adjusted for maritime operation—USG-212 gimbal allows you to automatically detect small targets, such as people in the water, fishing boats, jet skies and so on. The PD-1 VTOL conversion kit will allow you to operate the drone from the vessel for rapid response while command and control center will give an advantage of single environment for all your units to get real-time information on the go and to record all videos and events. Additionally, package delivery system will allow you to drop lifesaving buoy.

Recommended system configuration:

- 2 x PD-1 VTOL drones for rapid response
- 2 x USG-212 EO/IR payload
- Command and control software and server
- Remote video terminals to support ground teams
- A Package-dropping system to carry and deliver lifesaving buoy.

Advantages



Operate from ships
with PD-1 VTOL



Advanced sea motion
detection system



Provide real-time situational awareness
to groups on speed-boats via remote
video termina



Search for
missing people



Provide fast help by dropping self-inflating
lifesaving buoy from the drone



The PD-1 UAV can carry wide range of payloads, including EO/IR payload, radio intelligence unit, radio repeater, IMSI cell phone catcher or other equipment to support you operation. Huge payload compartment and 10 hours endurance with 10 kg payload give a lot opportunities for different applications.

Recommended system configuration:

- 2 x PD-1 drones
- 2 x USG-212 EO/IR payload
- Radio repeater or intelligence unit
- Cell phone IMSI catcher
- Command and control software and server
- Remote video terminals to support ground teams

Advantages



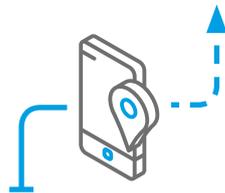
Support your operations with in-depth intelligence



Find people by their cell phones



Precisely detect cell phone location



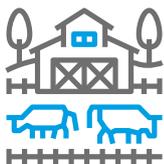
See locations changes and routes of cell phone movement



Support your ground forces by carrying a radio repeater for their radios

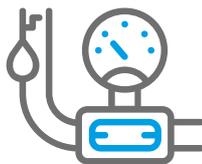
OTHER APPLICATIONS

Thanks to its capabilities, the PD-1 UAS is being used for wide variety of other applications in military, commercial, and civil areas.



AGRICULTURE

Crop health inspections, NDVI inspections, real-time surveillance and much more.



GAS IN OIL

Do real-time pipeline inspections and monitoring with high resolution camera.



MINING

Creating detailed images of the mining locations.



ENERGY

Recoverable energy. Sun battery farm inspections.

The police and law enforcement operations could be supported with “eye in sky” offering real-time situational awareness and reduce time to take important decisions.

Recommended system configuration:

- 2 x PD-1 VTOL drones for operations in urban areas
- 2 x USG-212 EO/IR payload for day and night operations
- Radio repeater or radio intelligence unit
- Cell phone catcher to locate individuals
- Command and control software and server
- Remote video terminals to support ground teams

Advantages



Plan law enforcement operations using real-time information



Rapidly deploy VTOL drone in urban environment



Traffic management



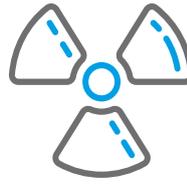
Use cell phone IMSI catcher to find individuals





USG-212 EO/IR gimbal

Perfect for day and night surveillance and reconnaissance, USG-212 EO/IR gimbal includes target tracking, electronic video stabilization, target acquisition features.



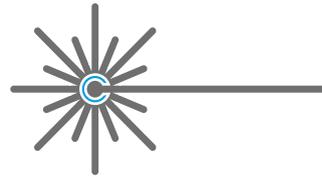
Radiation and air pollution measurement

Remote radiation and air pollution measurements. Measurement of gamma radiation.



USG-211 Full HD gimbal

Full HD EO sensor gimbal that is suitable for applications specific missions where only one sensor is needed.



LIDAR

Allows to take high-resolution images using laser technology.



Aerial photo mapping package

High-resolution photo camera installed on gyro-stabilized gimbal to ensure clear and stable pictures and includes photo-mapping Software.



Radio repeater

Carry the radio repeater to support ground forces and extend coverage range of their radios.



Full HD video link

50 KM Full HD encrypted video link. Features video broadcast option that allows to stream video to multiple ground video terminals in real-time.



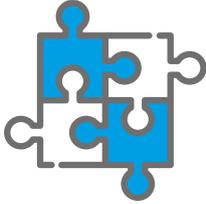
Synthetic Aperture Radar (SAR)

Get real-time information in any weather with Synthetic Aperture Radar.



Cell phone IMSI catcher

Allows to detect and record cell phones ID including IMSI, IMEI, TMSI and detect coordinates of mobile terminals.



Modular design

Modular design of the system allows to quickly add, remove, or replace any on-board equipment, allowing you to customize the system to fulfill any requirements and complete wide range of tasks.



Engine

Reliable 4-stroke engine for more than 10 hours of endurance. Electronic Fuel Injection upgrade is available for maximum endurance (up to 30% fuel economy).



Fully composite airframe

PD-1 airframe is fully made out of composite materials using latest technologies. It is lightweight and durable.



On-board generator

150 W on-board generator allows you to recharge main batteries during the flight and power up all equipment on-board.



Low radar visibility

Because of PD-1 fully composite airframe and absence of large metal parts, it is hard to detect and track the UAV with radars and anti-aircraft systems.



Remote engine start

Engine can be started remotely by a drone operator and even automatically restarted during the flight by flight controller.

FULL AUTO

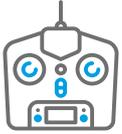
Fully autonomous flight

Preprogrammed flight route, payload control, automatic return to start point, and more features available for autonomous operations.



Fuel tank

12-liter fuel tank. Maximum fuel reserve for maximum autonomy.



Operate UAV via multiple Ground Control Stations

PD-1 UAV can be controlled by multiple authorized Ground Control Stations during the flight. Additionally, video and other intelligence information can be streamed to multiple GCS or portable terminals at the same time. This allows to extend operation range and allow multiple groups of UAV/payload operators to receive real-time data from the aerial vehicle.



Catapult launch

PD-1 can be launched with heavy-duty pneumatic catapult launcher.



Parachute recovery

Drone can be equipped with parachute recovery system with airbag to make impact softer. It can be used as main recovery method or as an emergency option. Parachute landing could be done in fully automatic mode.



Engine sensors

Internal temperature, outside temperature, engine temperature, fuel level, and RPM sensors come as standard equipment and give you detailed real-time information about your PD-1.



Navigation lights

Navigation lights comes as standard equipment with PD-1.



Anti-jamming and security features

PD-1 was originally designed for military operations. Data links and navigation system has anti-jamming features and AES 256 encryption. Drone can automatically return to the launch point in case of GNSS and control signals jamming.



Advanced options

We offer wide variety of military-grade options to Law Enforcement and Armed Forces users. Including Mil-Std data links, active anti-jam antennas, satellite data links and much more. Please contact us for more information regarding those options.



PD-1 UAV Specifications

Maximum takeoff weight	40 kg
Empty weight	22 kg (with undrainable fuel)
Payload weight	10 kg
Flight time with 4-stroke engine	10+ hours
Flight time with EFL upgrade	Up to 15 hours
Practical ceiling	3000 m
Speed range	70–140 km/h
Cruise speed	95 km/h
Stall speed	50 km/h
Fuel	A-95 mixed with oil
Deployment time	15 min
Launch	Runway, catapult, VTOL
Recovery	Runway, parachute, VTOL
Navigation	GNSS, inertial navigation unit



Dimensions

Full length	2540 mm
Height	990 mm
Chassis track	670 mm
Chassis wheelbase	880 mm
Main wheel size	150x31 mm
Nose wheel size	127x31 mm
Wing area	1/17 m ²
Wingspan	4000 mm
Mean wing chord	392 mm
Tip wing chord	300 mm
Root wing chord	420 mm
Aileron area	2x0.06 m
Flaps area	2x0.055 m ²
Fuselage max width	266 mm
Fuselage max height	284 mm
Full projection area of V-tail on horizontal plane	0.278 m ²
Full projection area of V-tail on vertical plane	0,123 m ²



Communications

Telemetry radio link Range	80 km
Encryption	AES256



Video downlink

Range	50 km
Format	Full HD 1080p
Encryption	AES128
Navigation	GNSS, inertial navigation unit

We offer simple process to start your own drone company and decide how far you want to be involved in development and production process.

Stage 1



SETUP TIME:
6 MONTHS

Production of the PD-1 unmanned aerial system and subsystems from semi knocked-down kits.

Stage 2



SETUP TIME:
STAGE 1 + 6 MONTHS

PD-1 airframe production from completely knocked-down kits.

Stage 3



SETUP TIME:
STAGE 2 + 6 MONTHS

Avionics, electronics and payloads production from semi knocked-down kits.



Service and maintenance

PD-1 modular platform can be easily serviced in the field. All parts can be replaced and be used interchangeably to provide continuous operations without interruptions for repairs and maintenance. Servicing and maintenance procedures can be done at client's country to reduce time and costs.



Quickly replace all modules
in the field



Fast delivery of spare parts
from our warehouse



Provide local service and maintenance to save time and money



All modules are
ITAR free



UKRSPEC _systems

PD-1

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DUNN SYSTEMS

