ORION|UAS

Tethered drone system for surveillance and communications

Orion Unmanned Aerial System is an advanced tethered drone system providing continuous aerial coverage over large areas for law enforcement, public safety, private security and military uses, asset protection, event security, emergency communications and crisis monitoring.

10+ hours
FLIGHT TIME

80 m
HOVERING ALTITUDE

300 sq.km
DAY HUMAN DETECTION

FULLY AUTOMATED FROM TAKE-OFF TO LANDING

Thanks to a push-button interface and a wholly automated deployment, Orion users don't need any particular piloting skills nor extensive trainings.

RESILIENT MOTORIZATION FOR TRUE ENDURANCE

With its high-grade industrial motors, Orion has been engineered to endure extensive flight times and demanding environments.

FLY FOR DAYS NOT MINUTES

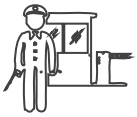
Powered from a ground source and through its patented micro-tether and built with industrial components, Orion is designed for long duration uses.

DAY AND NIGHT VISION X30 DAY OPTICAL ZOOM

Equipped with a gyro-stabilized multi-sensor full HD camera with day-light optical zoom X30 and an infrared camera, Orion is highly qualified for demanding and long staring missions in any day / night weather conditions.

elistair
Innovative Airborne Solutions

LAW ENFORCEMENT
Crowd Control
Traffic Monitoring
Event Control



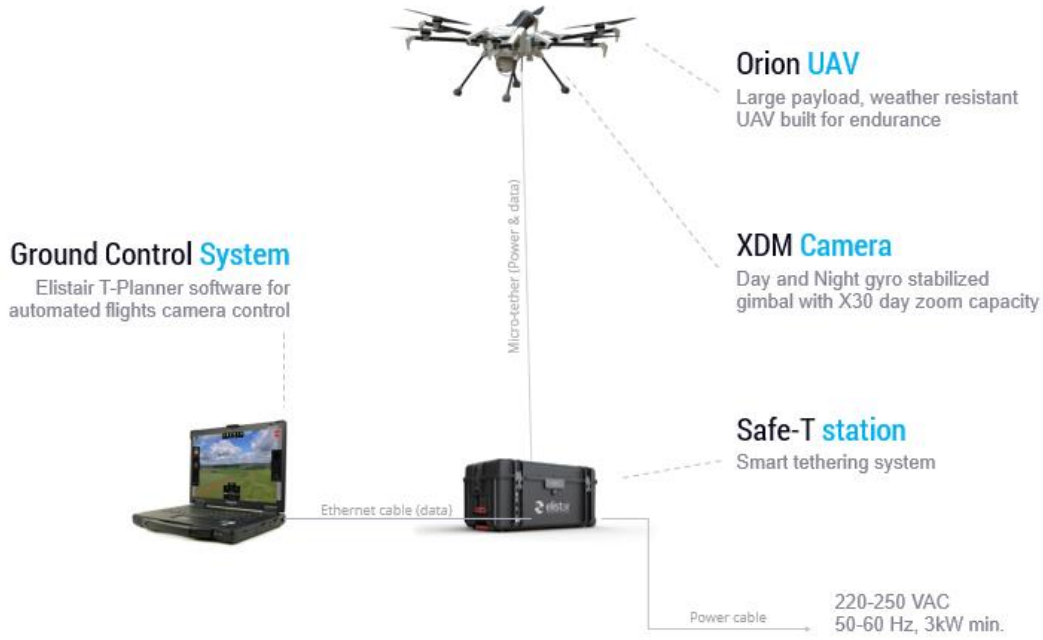
PRIVATE SECURITY
Industrial Crisis Monitoring
Assets Protection
Event Management

MILITARY
Force Protection
Communications Extensions
ISR

DISASTER RECOVERY
Emergency First Responders
Popup Telecommunications
Relief Efforts

ORION Unmanned Aerial System

The Orion UAV is a critical asset for security operations, giving access to a continuous and global aerial view and enabling long, risk-free and efficient surveillance for both night and day uses. This turnkey tethered drone system is designed for persistent tethered flights for national security, public safety and emergency response.



Compact, lightweight and quick to deploy by a single operator, Elistair Orion is especially suited for police forces, public safety entities, firefighters and industrial crisis monitoring. With its unjammable high-speed data connection for both communications and video streams, the Orion drone is perfectly fitted for security uses.

GCS – Ground Control Station with T-PLANNER Software

Orion system is controlled through a rugged Toughbook loaded with Elistair T-Planner software. Connected to Safe-T (Orion ground tether management system) through an ethernet cable, T-Planner is an easy-to-use and intuitive interface enabling the operator to control Orion, the XDM camera and Safe-T.

Simply enter your desired height of flight, and Orion will automatically take-off and reach its desired position. Orion is a push-button surveillance system, requiring no piloting skills to be used. All safety procedures are also automated.

T-Planner intuitive interface features:

- A push-button piloting mode with height control, automatic take-off and landing
- A full control of the camera, with the GCS interface or through an external joystick for more convenient and precise actions
- Standard recording and saving parameters for video and photo
- An access to two levels of health indications icons, simple or in-depth, for a deeper monitoring of Orion

An access to the IP based video stream can be used for an external use of the video feed (streaming, processing, integration into third parties VMS etc…).

XDM – Day & Night surveillance camera

XDM is a gyro-stabilized multi-sensor camera with a Full HD day-light – optical zoom x30 and an infrared camera with a choice of six lenses. XDM can be used in any day/night/weather conditions for demanding observation missions, thanks to its E/O and IR sensors and its zoom x30.

Compact, lightweight and well-stabilized, it is a perfect tool for long staring missions. Its powerful zoom and good stabilization make it a unique tool for tethered drones' surveillance missions.

Combined to long endurance capacities of Elistair tethered drone systems, the XDM gimbal enables à 360, 10h+, aerial, Day/Night vision capacity.

YRIS – Day zoom camera

YRIS is a 3-axis gyro-stabilized day camera featuring a powerful X30 optical zoom.

Designed for surveillance, it is a perfect entry-level solution for static surveillance, while allowing the observer to zoom closely from afar on anything requiring attention. With its 1080p at 30fps video stream, YRIS offers a stable high in the sky with a wide ground coverage. The X30 zoom allows you to remain at a distance with the ability to zoom closely on anything requiring a closer look.

SAFE-T

Tethering Station: Information on the Safe-T tether station can be found in the Safe-T documentation.

TRULY SMART, UNLIMITED POWER

200 Mbs
Fast data transfer
Full Motion Video

Secured and
unjammable
communications

T-monitor
Smart monitoring
function

2.5 kW
Unlimited and secured
power

Automatic 100m
Patented winch
«Plug and Fly»

Multi-drone
compatible:
Inspire, Matrice, etc.

Technical Characteristics

ORION	
Maximum height (cable length)	80m / 260ft
Operation in average wind	35km/h
Operation in gusts of wind	50km/h
Operating Temperature (max and min)	-10 to 40°C
Storage Temperature (max and min)	-10 to 40°C
Enclosure rating	IP32
Drone dimensions (folded)	362 x 424 x 343mm
Drone dimensions (unfolded)	1750 x 1750 x 550mm
Main Body Diameter	0.43m
Wingspan	1.75m
Height to base	0.55m
Empty weight	8,5kg
Total take-off weight (With XDM Camera)	9,7kg
Accuracy of horizontal hover flight	2,5m x hdop
Max. inclination angle of the drone	30°
Max. climbing speed	0,7m/s
Max. descending speed	0,7m/s
Max. flight time	10h
GNSS	GPS, Glonass, Beidou
Energy Backup battery (Wh)	120Wh
Max. charging power of the battery	5A
Powerplant	
Number of motors	6
Maximum motor output power per motor	1000W
Motor KV	300 tr/min /V
Motor Size	55x29mm
Maximum possible ESC voltage	22.2V
Recommended maximum ESC current	40 A continuous, 60A in peaks
ESC signal frequency	600Hz
Average consumption (SAFE-T + ORION) without payload	1300
Average consumption (SAFE-T + ORION) with 2kg payload	1500
Climbing speed	0,5m/s
Propeller dimension	20.4x7.3 inches (515.8x185.1mm)
Helix composition	Polymer
Propeller type	Foldable
Propeller weight	58g
Parachute	
Size	6m²
Weight	650g
Speed of decent at max weight	3.2m/s
Deployment method	Mechanical
Safety Battery	
Voltage	22.2V
Type of battery	LiPo 6S
Capacity	5000mAh
Connectors	XT90
Flight time on battery	2min
Flight Control	
Flight modes	Auto or Manual
GNSS	GPS, GLONASS, Galileo

Emergency RF Link (between GCS and ORION)

RF band	433Mhz
Radio link power	10mW

Radio Remote control link for manual control

RF band	2.4Ghz
Radio link power	100mW

GCS – Ground Control Station

Processer	Intel® Core™ i5 7300U vPro™
Graphics	Intel® HD Graphics 620
Screen	14”HD Active Matrix (TFT) couleur LCD
Protection	Impact protected, magnesium alloy
Battery life	Up to 15 hours
Video stream format (T-PLANNER)	HD 1080p 30i/s
Video latency on T-PLANNER	0,4s
Latency of camera control	0,2s
Maximum recording time	10h

YRIS Camera

Gyro-stabilization	3 axes
Day channel zoom (optical)	X30
EO sensor (day channel)	1/3-inch 3MP capture CMOS
Resolution and frequency (day channel)	1080p, 30i/s

XDM Camera

Gyro-stabilization	2 axes
Day channel zoom (optical)	X30, FOV 63.7° to 2.3°
EO sensor (day channel)	Sony FCB EV7500
Resolution and frequency (day channel)	1080p, 30ips
IR sensor (night channel)	Astrohn / 600x400 pixels
Digital zoom (night channel)	X4

Recommended Generator requirements

Minimum power	3kW
Inverter	Pure sinewave
Eco mode	Deactivated

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