

MEHITAMATA LENNUVAHENDID KAUGSEIREKS





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MAIN ACTIVITIES

ELI

ELI MILITARY SIMULATIONS

ELI ENGINEERING

ELI AIRBORN SOLUTIONS



SWAN III



UAV “SWAN III”



UAV research and development program (SWAN I) in Estonia was initiated by the Estonian Defence Forces and delivered by ELI Ltd. The next generation SWAN II offers further enhanced capabilities for surveillance and reconnaissance.

FUNCTIONALITIES of “SWAN III”

border patrol

- aerial photography
- geophysical prospecting
- disaster monitoring
- coast guard services
- day/night reconnaissance
- battlefield monitoring
- target positioning
- artillery spotting
- battlefield damage and casualty assessment



SYSTEM CAPABILITIES



- Real time video from gyro stabilized gimbal
- On board video recorder
- Stabilized digital photo camera
- Fully autonomous flight control including takeoff and landing
- Autonomous mission execution with option to change all parameters during flight
- Ability to select active waypoints and/or change waypoint coordinates and parameters
- Different preprogrammable flight patterns
- Definable actions in case of errors and loss of data link (Return Home, Proceed with Mission, Emergency landing after critical error etc.)
- Multi sensor usage
- Fast and easy takeoff by catapult
- Low noise and weak radar footprint
- Controllable navigation lights



MAIN COMPONENTS OF UAV SYSTEM SWAN III

- 1. Ground segment
 - GCS (Ground Control Station)
 - Catapult for launching the UAV
 - Antenna tracker for video link
- 2. Air segment
 - Air vehicle



AIR VEHICLE “SWAN III”



Weight: 12...15 kg

Length: 190 cm

Wing Span: ca 300 cm

Power: four stroke Aero Engine

Cruise Speed: 100 km/h

Endurance: ca 6 h

Radius: ca 100 km



AIR VEHICLE "SWAN III"



Wingspan	3.075m
Length	1.960m
Weight	12...15kg
Engine	4.0hp 35cc 4 stroke
Video	Gyro stabilized gimbal Video camera IR camera Dual gimbal option
Photo	Gyro stabilized mechanism

	Min	Max
Operational ceiling	150m	2500m
Range	-	150km*
Flight time	-	180min*
Fuel capacity	-	3.0L
Speed	80 km/h	130 km/h*
Wind	-	7 m/s
Datalink range	-	50km*
Videolink range	-	40km*



GIMBAL

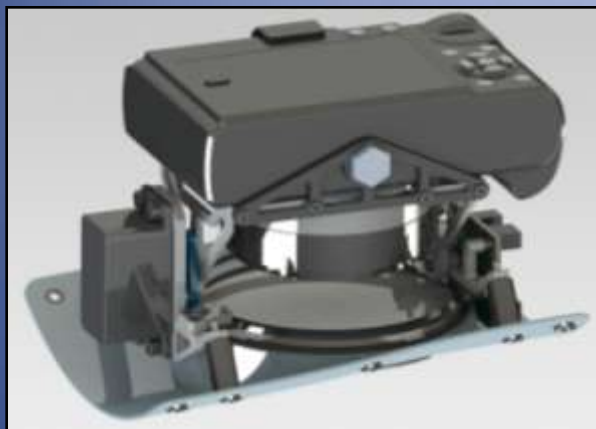


	Video	IR	Photo
Type	FCB-EX20D SONY	TAU 640 FLIR	DMC-GF1C Panasonic
Resolution	PAL 530 TV lines	640x512	12MPix
Zoom	10x opt.	8x digital	-
Sensitivity	0.25lx 1/60s	<50 mK at f/1.0 with FLIR proprietary noise reduction	F2.0 ISO 6400 1/1.6"
Controlling	Gyro + GPS	Gyro + GPS	Gyro
Data storage	>4h	>4h	>2000 images*



Nose-mounted gimbal with color camera or IR camera is used for remote piloting, and for automatic navigation allowing 180 degree operability of the camera in both horizontal and vertical direction

DIGITAL CAMERA



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DIGITAL CAMERA



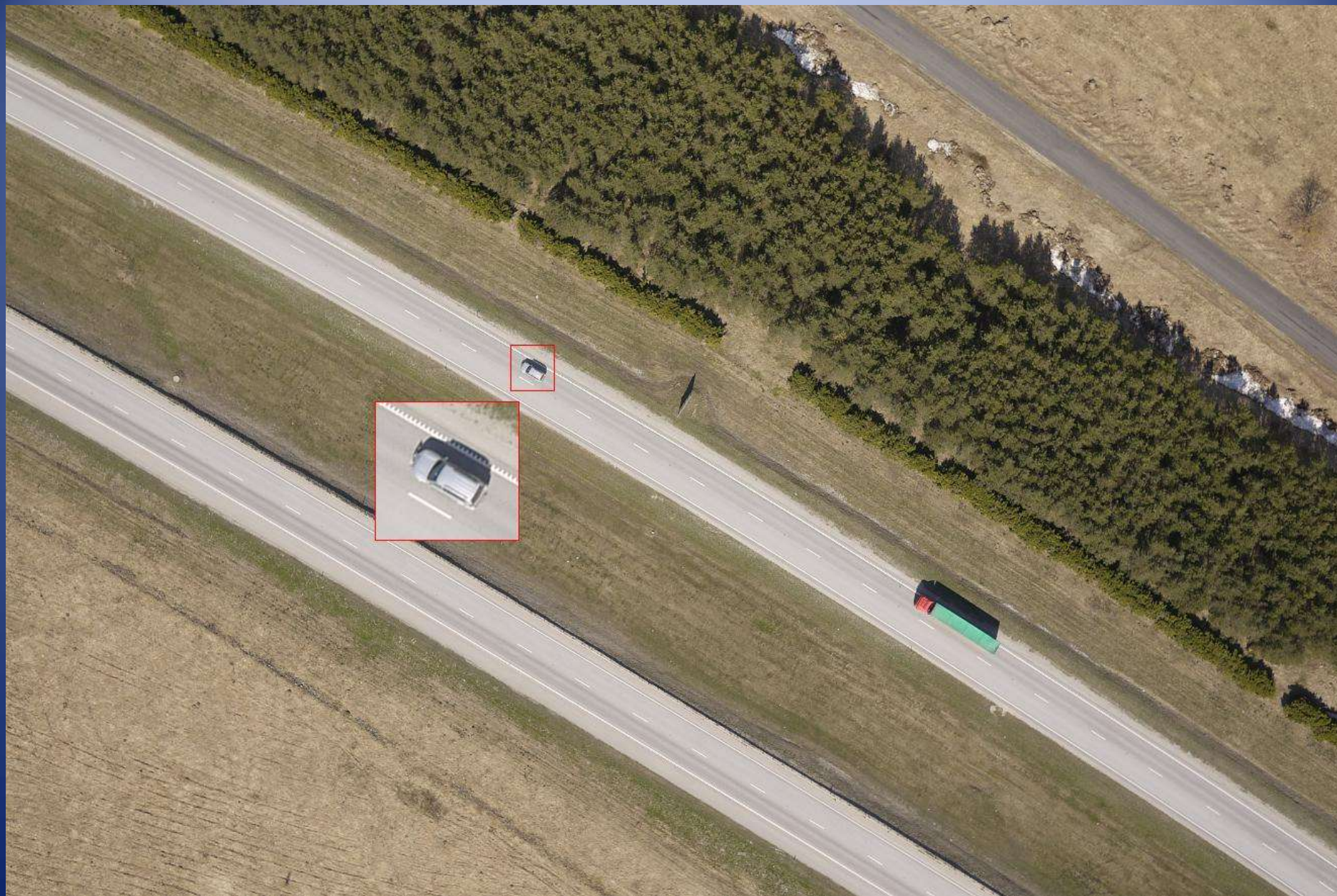














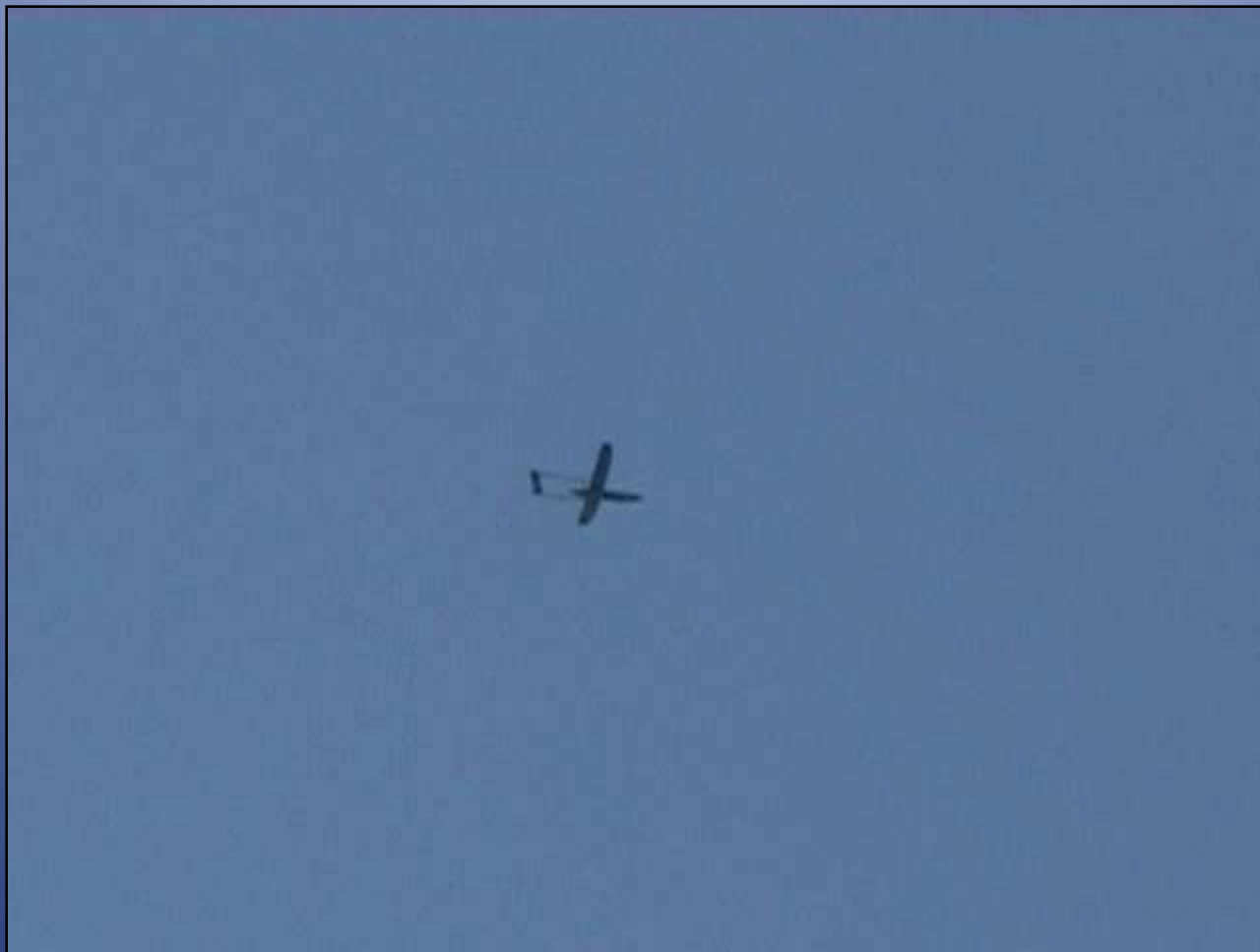
PARACHUTE



PARACHUTE RELEASE SYSTEM



PARACHUTE VIDEO



Parachute video



AIR BAG



AIR BAG VIDEO



TRANSPORT AND STORAGE



MANPAD (MAN PORTABLE GROUND CONTROL SYSTEM)



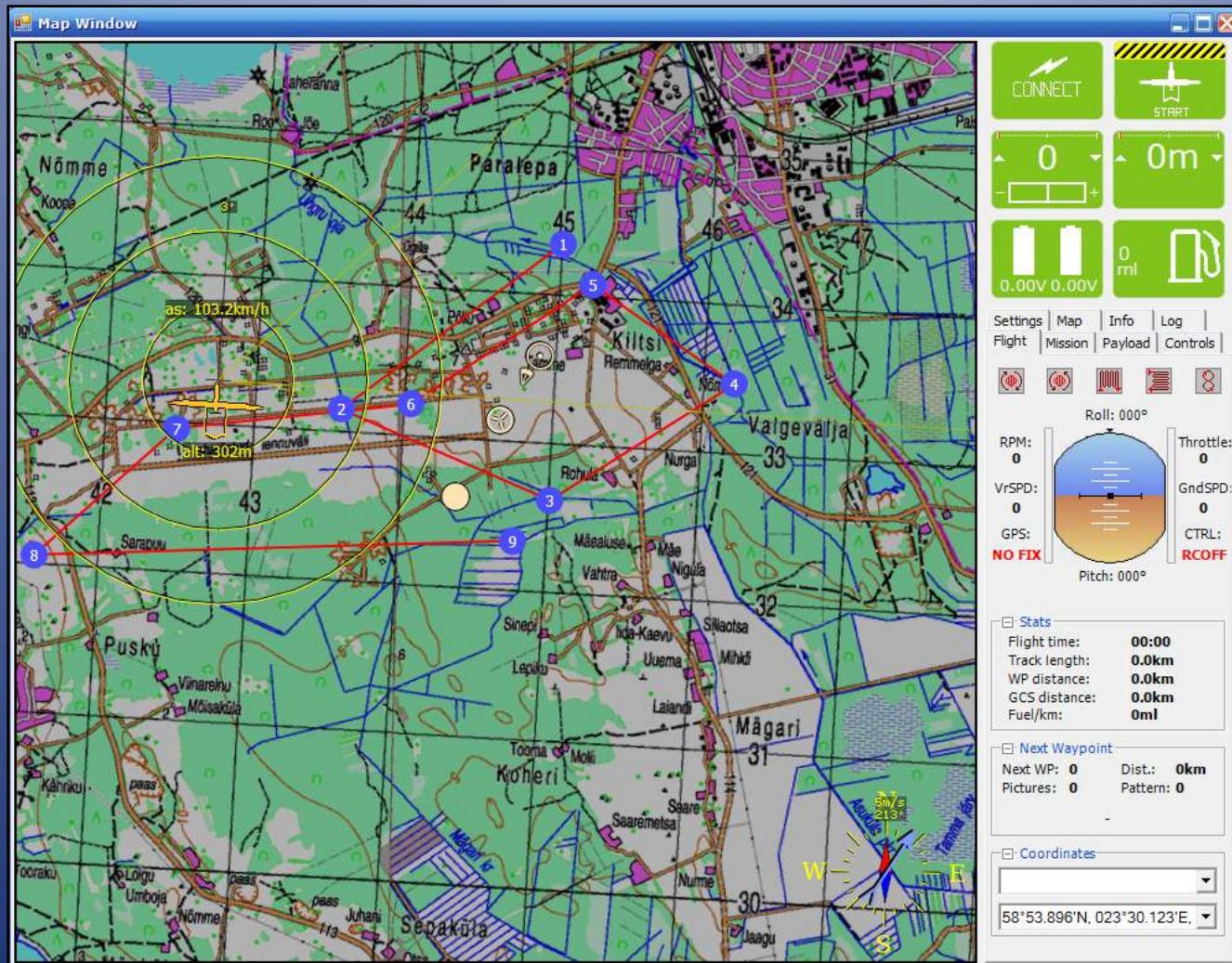
BATTERY CHARGING UNIT



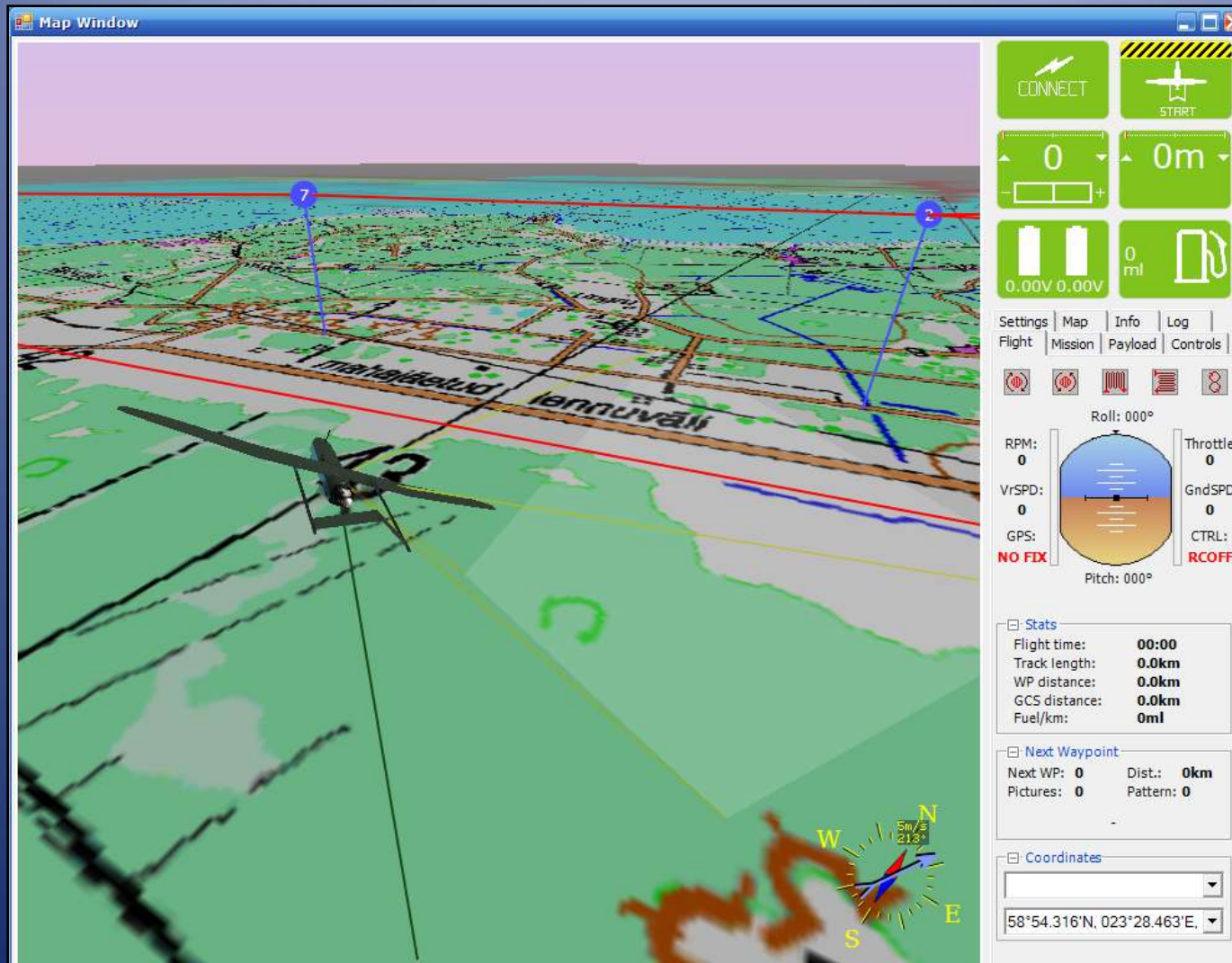
MAN PORTABLE GROUND CONTROL SYSTEM



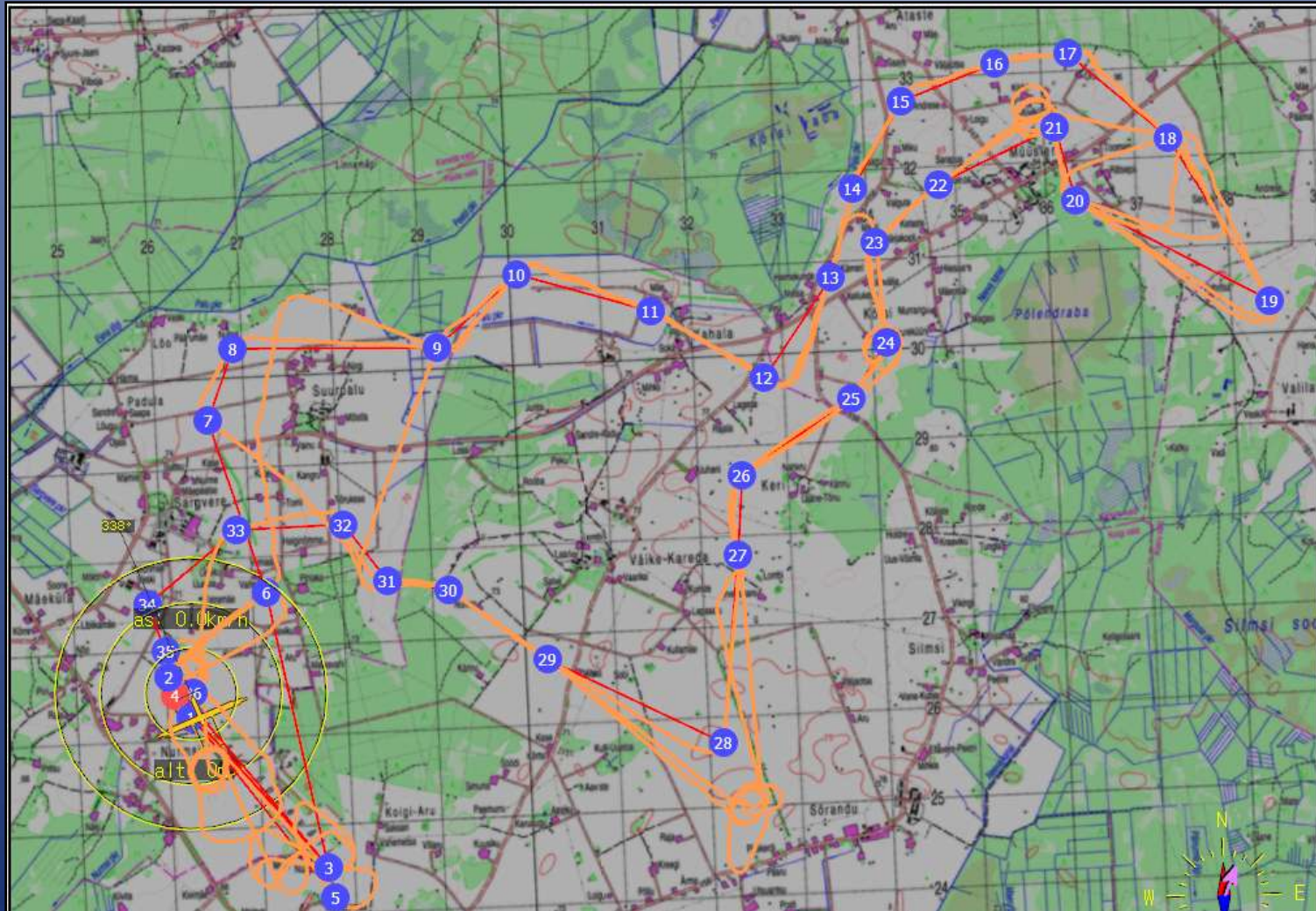
GCS SOFTWARE



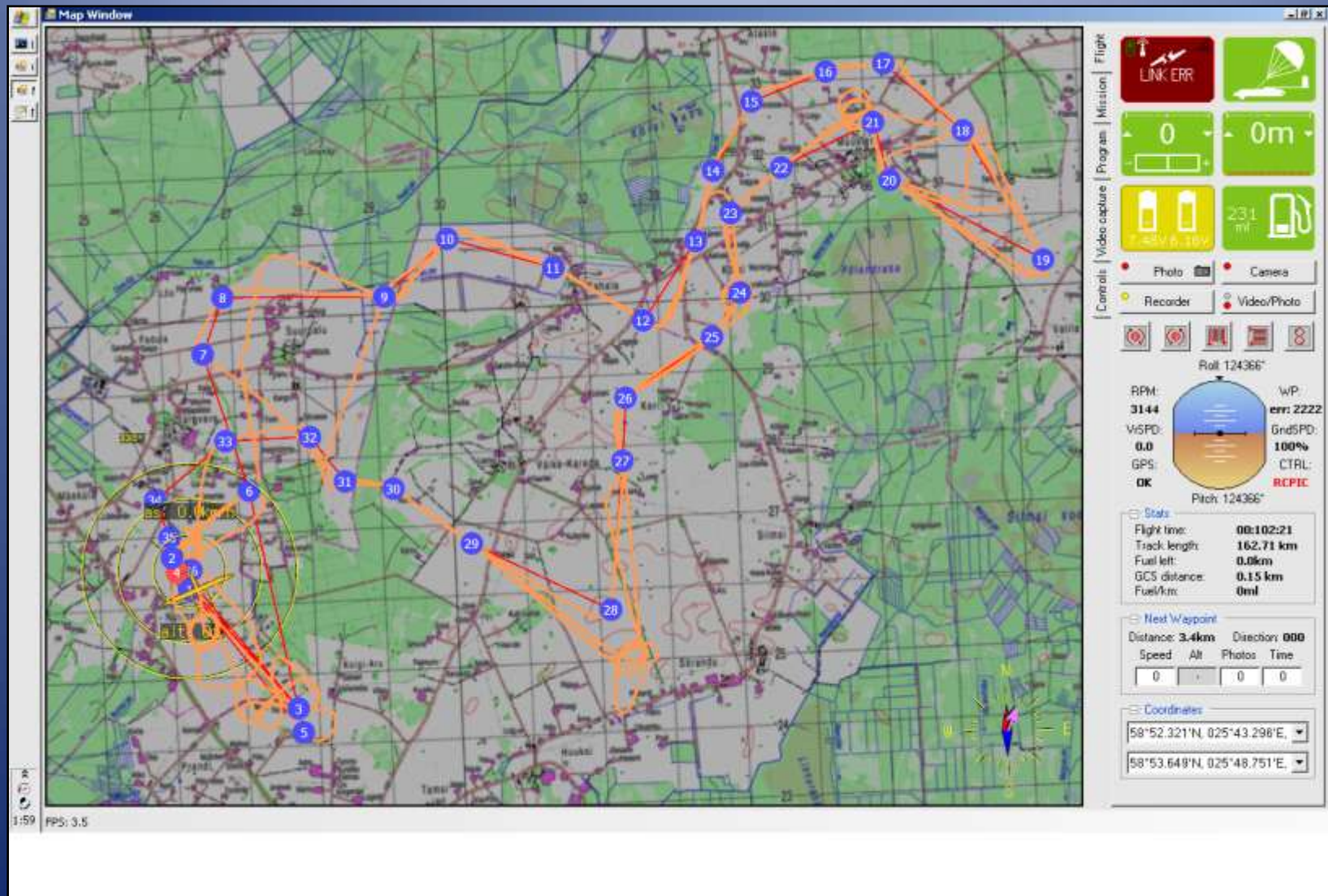
GCS SOFTWARE



GCS Software



VIRTUAL COCKPIT



ANTENNA TRACKER FOR SENDING AND RECEIVING DATA AND VIDEO SIGNALS



ANTENNA TRACKER VIDEO



CATAPULT LAUNCHER



CATAPULT LAUNCHER VIDEO



UAV SWAN III



CATAPULT VIDEO



DIRECTION FINDING SYSTEM FOR TRACKING



ELIX4 MULTIRORTOR



ELIX4 MULTIRORTOR



ELIX4 MULTIRORTOR

EliKopter X4 Specifications

Dimensions packed	370x210x80
Dimensions	470x470x80
Take off weight	2.5 kg
Autopilot	
Motors	MK3638 or similar
Motor controllers	BL-Ctrl V2.0

	Min	Max	Comments
Operational ceiling	-	500 m	AMSL
Range	-	10 km	Dependant on data and video link configuration
Flight time	-	0.5 h	Dependant on flight profiles and payload
Battery capacity	-	10 Ah	Standard LiPo battery
Speed	-	-	Adjustable in flight
Wind	-	-	Measured on ground
Datalink power	1 W	-	-
Videolink Power	0.5 W	2 W	Adjustable output



ELIX4 MULTIRORTOR



	Video	IR	Photo
Type	FCB-EX20D	FLIR Quark or TAU	On demand
Resolution	PAL 530 TV lines	640x512	-
Zoom	10x optical	4x digital	-
Sensitivity	0.25 lx @ 1/60 s	<50 mK, spectral band 7.5-13.5 μm	-
Stabilization	1 axis Tilt	1 axis Tilt	-
Optional onboard storage	>4 h	>4 h	-

ELIX4 MULTIRORTOR



THANK YOU FOR LISTENING.

