

## DRONE-UNMANNED



# MULTI-ROLE AERIAL PLATFORM SMAP-22 (WEE MIDGEE)<sup>SABRE</sup>



## PRODUCT OVERVIEW

The SMAP-22 is a small 23 kg rotary wing UAV, capable of automatic and autonomous flight.

Launch and recovery can be performed from the ground or from a ship flight deck. The SMAP-WW provides surveillance, reconnaissance with real-time high-definition video.

A high bandwidth, encrypted AES128/256 data link ensures the connection with the ground control station and the drone.



# SMAP-22 (WEE MIDGEE)

## SMAP22

### MAIN TECHNICAL PARAMETERS

Maximum Take-off Weight:	25KG
Rotor Diameter (Foldable):	1.80 Meters
Length:	1.70 Meters
Maximum Flight Ceiling:	2000 Meters ASL, ISA Conditions
Payload:	< 4KG
Endurance at Cruise Speed:	Minimum 3 Hours
Range:	Over 50KM with Auto Track Antenna System
Fuel Tank Volume:	Up To 6 Litres
Propulsion (Thermal Engine With):	<ul style="list-style-type: none"><li>• Ignition System</li><li>• Fuel: Oil-Gasoline Mixture</li><li>• Electric Generator</li><li>• AutoStart System</li></ul>
Optics:	<ul style="list-style-type: none"><li>• Day and Night Vision Camera</li><li>• Zoom 30x</li><li>• Full Stabilization System</li><li>• Target Feature</li><li>• Laser Pointer</li></ul>
Missions:	<ul style="list-style-type: none"><li>• Surveillance and Targets Determination and Allocation</li><li>• Targeting</li><li>• Security Missions</li><li>• Artillery Fire adjustment</li><li>• Assistance in Rescue Missions, Including Emergency Delivery of Medical Materials</li><li>• Detection of Forest and Mountain Fires, Assistance in Floods</li></ul>

# SMAP-22 (WEE MIDGEE)

## SMAP22

N:	Parameter	Basic Version	Enhanced Version	Advanced Version
1	Main Electro Operating System	<b>HD EO/LWIR</b> <ul style="list-style-type: none"><li>• HD Sensor with 30x Continuous Optical Zoom and 1.3°nFOV</li><li>• Flir IR 640x512 Sensor with 50mK Sensitivity</li><li>• 25 mm Thermal Lens with 20° FOV</li><li>• Integrated Onboard Video Processing Unit</li><li>• Electronic Image Stabilisation</li><li>• H.264 Video Encoding</li><li>• IP Video Output in HD for EO and SD for IR</li><li>• Analogue Video Output (PAL or NTSC)</li></ul>	<b>Full HD EO / LWIR with 5x Zoom</b> <ul style="list-style-type: none"><li>• Full HD [1920x1080p] CMOS Sensor with 30x Continuous Optical Zoom and 2.3°nFOV</li><li>• Flir Tau2 IR 640x615 Sensor with 50mK Sensitivity</li><li>• 15-75 mm Thermal Lens with 43.4° to 8.2°nFOV</li><li>• Integrated Onboard Video Processing Unit</li><li>• Electronic Image Stabilisation</li><li>• H.264 Video Encoding</li><li>• IP Video Output in HD for EO and SD for IR</li><li>• IR Sensor Upgrade to Flir Tau2 with Top-of-the-line sensitivity of 30mK instead of Standard 50mK Sensitivity</li></ul>	<b>HD EO / MWIR</b> <ul style="list-style-type: none"><li>• MWIR Sensor:<ul style="list-style-type: none"><li>- 640x512 Pixels 15µ Pitch Cooled Focal Plane Array Operating in the 3-5µm Waveband</li><li>- 15x Continuous IR Zoom at 512p</li><li>- 1.5°nFOV of IR Lens</li><li>- 8600m Human Detectability at Night</li></ul></li><li>• EO Sensor:<ul style="list-style-type: none"><li>- Hitachi Global Shutter HD Sensor</li><li>- 30x Zoom at 720p</li><li>- 1.3°nFOV</li></ul></li><li>• Integrated Onboard Video Processing unit;</li><li>• Electronic image Stabilisation</li><li>• H.264 Video Encoding</li><li>• IP Video Output in HD for EO and SD for IR</li><li>• Analogue Video Output (PAL or NTSC)</li></ul>
2	Laser Range Finder	-	-	✓
3	Laser Pointer	-	✓	✓
4	Automatic Object Tracking and Scene Steering	✓	✓	✓
5	Video Enhancement	-	✓	✓
6	Onboard Recording and Snapshot	-	✓	✓
7	Moving Target Indicator Advanced	-	✓	✓
8	High Precision Geo-Location Incl. INS Module with Dual GPS	-	✓	✓
9	Moving Map Plugin Software	-	-	✓
10	Artillery Fire Adjustment Software	-	-	✓

# THE GRIFFIN

## UNMANNED SURVEILLANCE AND RECONNAISSANCE AERIAL TGfN

### PRODUCT OVERVIEW

The Griffin was designed for the monitoring and aerial surveillance of large areas. It uses radio frequency and/or optronic means (IR/ EO and thermal) installed aboard the aircraft.

With a fully automatic control system (including stages of launch, flight and landing modes) and supporting most critical weather, the Griffin system is a great fit for various missions.

The system does not need prior field preparation for launching and the UAV has a parachute landing system.



# THE GRIFFIN

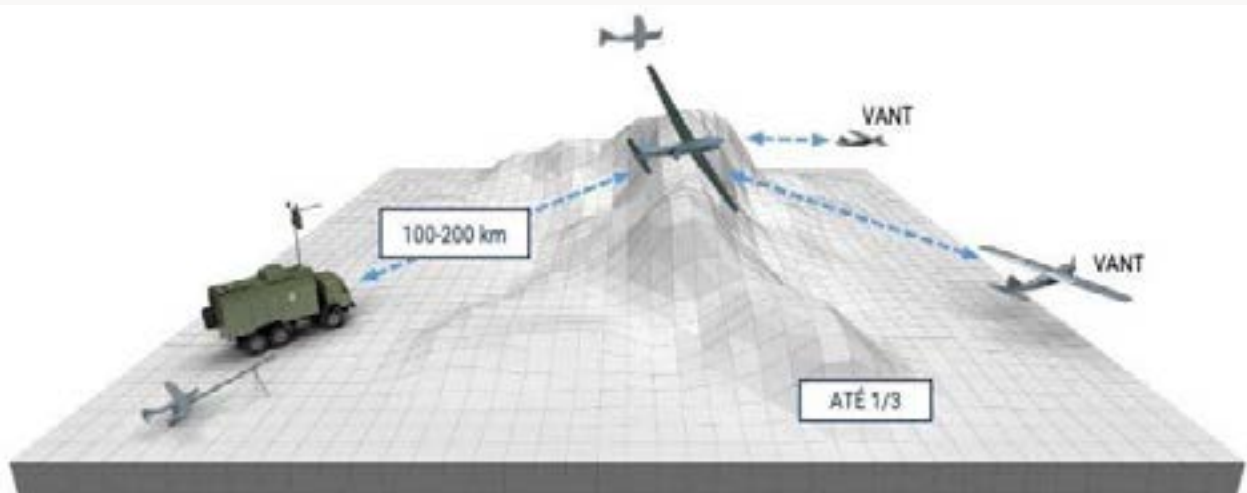
## UNMANNED SURVEILLANCE AND RECONNAISSANCE AERIAL TGFN

### FEATURES

- Weight: 22 kg.
- Up to 5 km ceiling.
- Autonomy: up to 12h/1200km.
- Speed 50-150 km/h.
- Max payload 5kg.
- Measurements: 1.96m x 4m.

#### Distance from Controller

- Up to 200 km (Radio Control).
- 200-500 km (Controlled by Software - Autonomous Flight).
- The distance can be increased by the use of signal repeaters (one Griffin can repeat the signal to other Griffins).
- Data transmissions.
- Inside radio signal (up to 200 km) - Live.
- Outside radio signal (After 200 km).



# THE GRIFFIN

## UNMANNED SURVEILLANCE AND RECONNAISSANCE AERIAL TGFN

### CAPABILITIES

- Aerial monitoring (RGB, thermal or infrared).
- Tracking movement and stationary targets, determining their direction, coordinates and speed.
- Support for Police and Military Operations.
- Topographic survey and development of digital maps.
- Possibility of identifying nearby air traffic within a radius of 220 km and at an altitude of 11,000 metres. ADS-B module.
- Perimeter Measurement.
- Monitoring of VHF/UHF and GSM emissions.
- Search and rescue operations (including maritime).
- Monitoring of wide maritime and forestry areas.
- Reliable in different types of weather.
- Accessible fuel (GAV).
- Fully automatic control system (including stages of launch, flight and landing modes).
- Secure and encrypted data transmission channel (4 channels).
- Curved Weapon Shooting Fix.
- Anti-drone Systems Protection.



# THE GRIFFIN

## UNMANNED SURVEILLANCE AND RECONNAISSANCE AERIAL TGFN

### CAPABILITIES

#### Command Control and Control System

- Range of Radio control up to 200km (2200m of elevation).
- Allows the UAV to be controlled by more than one Ground Control Station (LCE), transferring aircraft control between them.

#### Automatic Pilot (IA)

- Easy handling. Performs automatic course, speed and altitude maintenance.



# THE GRIFFIN

## UNMANNED SURVEILLANCE AND RECONNAISSANCE AERIAL TGfN

### SYSTEM COMPOSITION

- 1 (one) Aircraft.
- 1 (one) Launcher.
- 1 (one) Ground Control Station.
- Operator Case.
- 2 Computers.
- 1 Set of Antennas.
- 1 Payload at the customer's discretion.
- Accessory kits and spare parts.
- Training for 3 operators .
- 1 year of maintenance.
- 1 Generator.
- Operation manuals.

### PAYLOAD OPTIONS

- a) Digital camera.
- b) Day and night gyro-stabilised video camera.
- c) Synthetic Aperture Radar.
- d) Mobile GSM - Cell Phone Monitoring Module (2G, 3G and 4G).
- e) VHF-UHF-radio-technical monitoring module (two aircraft with some configuration required).

Wind conditions for launch and landing	10m/s
Land conditions for launch	any terrain
Land conditions for landing	Any terrain, including water.
Ignition system	Automatic. In case of engine failure, it is possible to activate the ignition at least five times
electrical supply	Small battery
	It has an alternator that powers the propulsion and the payload
aerodynamic performance	On battery failure, the alternator maintains propulsion and vice versa.
	Does not suffer the drag caused by vtol propellers, allowing greater range
Camera	The energy consumption of the aircraft does not influence the cameras

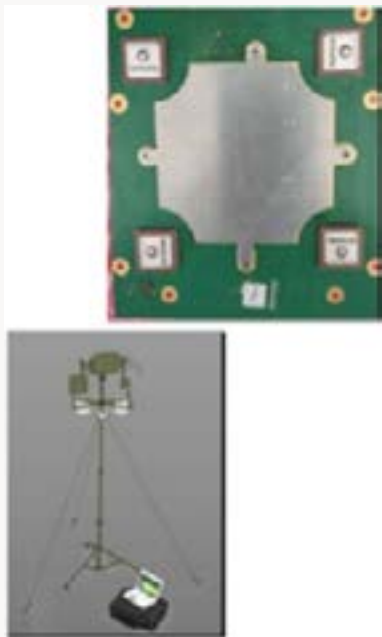


# THE GRIFFIN

## UNMANNED SURVEILLANCE AND RECONNAISSANCE AERIAL TGFN

### MOBILE GSM

Determines the IMEI and IMSI of any 2G, 3G and 4G cell phone within a distance of up to 10 km from the aircraft. It is capable of monitoring (listening), tracking (following the displacement of the issuing cell by registering its IMEI when passing through the terrestrial ERB's), determining the geographic coordinates of the issuing cell, sending SMS and blocking any cell signal in an area of 3.5 km<sup>2</sup>.



### MOBILE LINK

The Mobile Link was designed for the operational team that is being monitored. It is capable of receiving images generated by the UAV camera, as long as it's within 80km of the aircraft.

### SIMAD

The SIMAD (Anti-Drone Mobile System) is a passive system of automatic detection and blocking of the SNS channel (satellite navigation system) and the telemetry channel (radio link). Depending on the configuration, it automatically detects, locates and blocks any drone that invades the 3 km radius dome that the equipment creates when triggered.



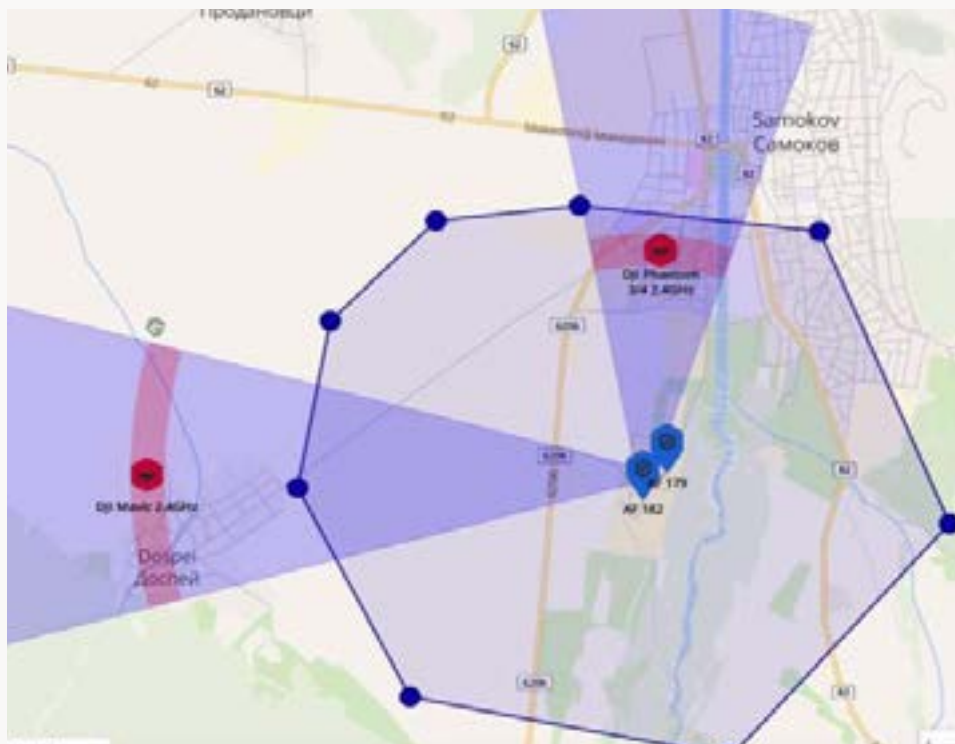
# UNIVERSAL ANTI-DRONE SYSTEM

## UADS1022

### PRODUCT OVERVIEW

Sarkar Tactical drone RF detection and jamming system. Our UADS 10-22 possesses flexible architecture, the ability to deploy easily in any area, and network connectivity.

Detection is based on the radio frequency detection of the uplink and downlink frequencies of the communication channels between the drone and drone remote control station.



# UNIVERSAL ANTI-DRONE SYSTEM

UADS1022

TECHNICAL SPECIFICATIONS

Composition of the System:	<ul style="list-style-type: none"><li>• Drone detection sensor - RF detector</li><li>• Jamming System</li><li>• Operator work station (PC or laptop)</li><li>• Command and control software</li><li>• Operation for integration for other sensors and systems</li></ul>
Installation:	<ul style="list-style-type: none"><li>• Option for stationary and mobile installations (including operation during vehicle movement)</li><li>• Minimum instillation time for stationary and mobile variants</li></ul>
Type of RF Sensor:	<ul style="list-style-type: none"><li>• Fully passive sensor</li></ul>
Drone Detection Range:	<ul style="list-style-type: none"><li>• Up to 8 KM independently from drone size</li><li>• Possibility for detection of the drone operator position</li><li>• Possibility of the drone tracking after detection</li></ul>
Avaiable Drone Identification Information:	<ul style="list-style-type: none"><li>• Type (model) of the drone</li><li>• Drone ID</li><li>• Time for the first and last detection</li><li>• distance in KM</li><li>• Geographic coordinates</li><li>• Communication protocol</li></ul>
Frequency Bands for Detection and Jamming:	<ul style="list-style-type: none"><li>• 433 MHz</li><li>• 915 MHz</li><li>• All types of navigation satallites band-widths</li><li>• 2400-2500 MHz</li><li>• 5800 MHz</li><li>• Option for other frequency bands</li></ul>
RF Frequency Detection Zone:	<ul style="list-style-type: none"><li>• 360°</li></ul>

# UNIVERSAL ANTI-DRONE SYSTEM

ADS1022

PRODUCT OVERVIEW

RF Detection Method Advantages:	<ul style="list-style-type: none"><li>• Long detection range in 360° simultaneously for unlimited number of the drones</li><li>• Fully passive (no any RF transmissions) device</li><li>• Detection and targeting of the drone/ drones with different speed and altitude of flying</li><li>• Possibility for detection of the pilot/s allocation and drone/drones home position</li><li>• Guaranteed detection in any weather conditions during the day and night</li><li>• Extremely low consumption</li><li>• Low size and weight (total &lt; 45 kg)</li><li>• Technically and Cost effective solution</li><li>• RF Sensor is working without pan-tilt devices and rotating parts</li><li>• Detection and targeting of the drone/ drones is without operator intervention</li><li>• Detection and targeting of the drone/ drones with different speed and altitude of</li></ul>
Jamming System Output RF Power:	<ul style="list-style-type: none"><li>• Dependant on end user requirements</li></ul>
Type of Jamming System Antennas:	<ul style="list-style-type: none"><li>• Directional and/or omnidirectional antennas</li></ul>
Jamming Distance:	<ul style="list-style-type: none"><li>• Up to 6 KM for all type drones</li></ul>
System Parts Installation:	<ul style="list-style-type: none"><li>• Two Peli type breifcases</li><li>• Total weight of entire system &lt; 45 KG</li></ul>
System Design:	<ul style="list-style-type: none"><li>• According to military standards</li></ul>

# UNIVERSAL ANTI-DRONE

## UADS1022

### RF SIGNALS DETECTED BY UADS

#### Uplink Signals:

Signals for the drone remote control which can be Wi-Fi, Bluetooth or own signals - most often FHSS (Frequency-hopping spread spectrum).

#### Downlink Signals

Telemetry signals from the drone.  
Video data (analogue PAL/NTSC, Wi-Fi or own protocols)



