



# **Highland Systems**

#### Advanced Integrated Technologies

Highland Systems is an R&D and project management company which specializes in development and implementation of state-of-the-art technology into production. Our highly qualified engineering team comprises of industry professional's from a wide range of defense backgrounds specializing in manufacturing of armored vehicles, submarines, and helicopters.

Highland Systems holds numerous International Patents and IP rights with R&D capabilities encompassing all aspects of innovation, unparalleled technical expertise and advanced technology. We specialize in integrating advanced technologies into our products and use it to enhance and support our manufacturing capabilities, increasing our products efficiency and performance, this enables us to deliver innovative and effective solutions to our customers. We design specialist wheeled and amphibious combat vehicles for military and security applications as well as work in close cooperation with "Stiletto Systems Ltd" in development of advanced small caliber ammunition.





# KRONOS SUBMARINE

MADE IN UAE



#### KRONOS SUBMARINE

KRONOS ARMOURED SUBMARINE MADE IN THE UAE

Kronos Submarine with a futuristic hydrodynamic design, delivers high performance, outstanding efficiency and significantly reduces energy costs when submerged. Driven by our highly skilled design, research and development team, this Hybrid vessel can comfortably accommodate 10 passengers and is suitable for commercial, rescue and combat operations. The submarine features an innovative hull design which significantly reduces fuel consumption, increases maximum speed, and provides superior stability. This brings a whole new concept into production of submarines across the world.





KRONOS ARMOURED SUBMARINE. MADE IN THE UAE

DIMENSIONS	
Width	7432 mm
Length	9025 mm
Height	2089 mm
Carrying Capacity	up to 3000 KG on water
Curb Weight	10000 KG
Seating Capacity	11
PERFORMANCE	
Fuel	Diesel
Max Speed on Water	80 kmph
Max Speed under Water	50 kmph
Working depth	100 meters
Max critical depth	250 meters
Air supply	36 hours

KRONOS ARMOURED SUBMARINE. MADE IN THE UAE

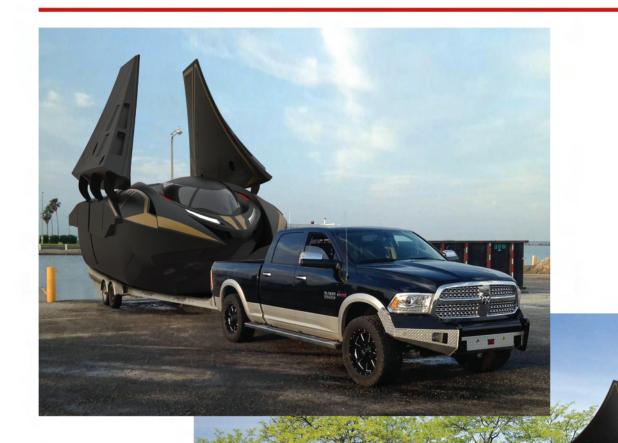
RANGE	
Hybrid Mode	54 hours
Generator Only Mode	18 hours
Battery Only Mode	36 hours
Electric Engine Power	1200 hp/2,400 Nm
PERFORMANCE	
Full Battery Charging Time	1,5 hours
Air refueling	1,5 hours
Engine Type	Electric Engine
Folding wings for transportation	



The interior space of the submarine's cabin. Adaptive lighting. Automated life support system. Air conditioning system.







# KRONOS SUBMARINE

Folding wings for transportation







# STORM

ARMOURED HYBRID AMPHIBIOUS MPV

MADE IN UAE

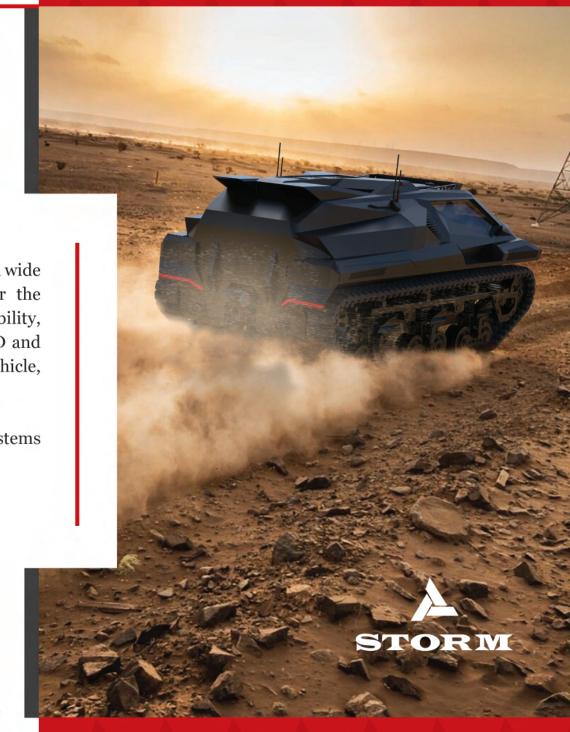


## STORM MPV

# STORM ARMOURED VEHICLES MADE IN THE UAE

STORM is a Multi-Role Armoured Vehicle, designed for use in a wide range of specialist military and civil applications. Built for the harshest environments, the vehicle offers exceptional mobility, reliability and provides the latest technologies in ballistic, IED and mine blast protection. Due to the versatile nature of the vehicle, STORM also offers the user surface amphibious capabilities.

All STORM vehicles can be configured with remote control systems allowing for autonomous operations.





STORM ARMOURED VEHICLES. MADE IN THE UAE

DIMENSIONS	
Width	2875 mm
Length	5895 mm
Height	2455 mm
Carrying Capacity	up to 2500 KG on water
Curb Weight	10000 KG
Seating Capacity	10
PERFORMANCE	
Fuel	Diesel
Max Forward Speed	142 kmph
Max Reverse Speed	50 kmph
Max Speed on Water	35 kmph
Surmountable Rise Up To	75%
Armouring Level	STANAG 4569 Level 3

STORM ARMOURED VEHICLES. MADE IN THE UAE

RANGE	
Hybrid Mode	18-36 hours
Generator Only Mode	8,5 hours
Battery Only Mode With Speed 80-90 km / hour	7 hours
With Speed 100-140 km / hour Battery Operating Time	2,5 hours
On water	8 hours
Electric Engine Power	2500 hp
PERFORMANCE	
Overcome Moat	2 m
Overcome Vertical Rise (step)	up to 1,5 m
Minimum Turning Radius	on place
Full Battery Charging Time	3 hours
Ground Clearance	50 cm
Engine Type	4,400 Nm





#### PHANTOM MPY





MADE IN UAE

#### PHANTOM MPV

#### MADE IN THE UAE

Phantom MPV is a highly mobile B6 Armored Vehicle which is capable of operating across a wide range of the harshest terrains, with exceptional off-road mobility, high performance and provides the latest technologies in ballistic, IED and mine blast protection. The Phantom Vehicle can be configured for a variety of military and government specific operations and customized to accommodate a range of user specific equipment.







PHANTOM MPV. MADE IN THE UAE

DIMENSIONS	
Width	2300 mm
Length	5300 mm
Height	2200 mm
Torque	1200 Nm
Curb Weight	6000 KG
Seating Capacity	6
PERFOMANCE	
Fuel	Diesel/Electrical
Land Speed	Max 160 kmph
Climb	75 %
Vehicle Clearance	40 cm
Battery Power	70 kw

PHANTOM MPV. MADE IN THE UAE

RANGE	
Hybrid Mode	18 hours
Generator Only Mode	8.5 hours
Battery Only Mode	3.5 hours
With speed 140-150 km/hour battery operating time	1.5 hours
Engine Type	1600 hp
Ground Clearance	40 cm
PERFOMANCE	
Generator	220-380 V/40 kW
Battery Power	70 kW
Armoring Level	CEN/B6











MADE IN UAE

#### **BUGGY HUNTER MK-200**

#### MADE IN THE UAE

Buggy Hunter MK-200 is a 4-person, multi-purpose tactical vehicle designed to cany troops to challenging theatres of operation. This versatile Armored Vehicle offers superior protection and exceptional mobility, making it ideal for high-risk areas. The Buggy Hunter MK-200 has superior features, including technical configuration and a powerful diesel engine making it a reliable vehicle for multipurpose operations.





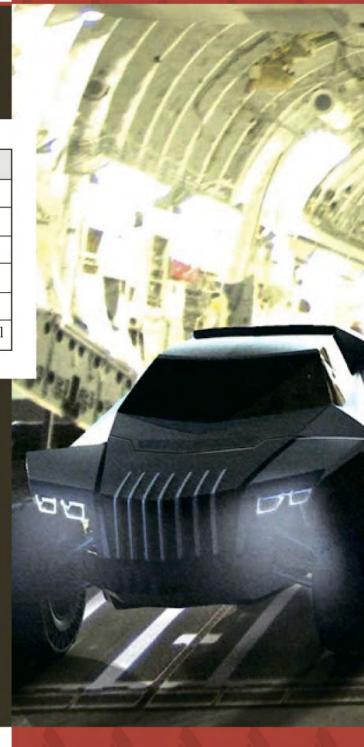
BUGGY HUNTER MK-200. MADE IN THE UAE

DIMENSIONS	
Width	1700 mm
Length	4000 mm
Height	1900 mm
Vehicle Load	700 KG
Curb Weight	2500 KG
Seating Capacity	4
RANGE	
Hybrid Mode	18 hours
Generator Only Mode	8,5 hours
Electric Motor	500 hp/1000 Nm
Vehicle Clearance	50 cm
Battery Power	40 kW
Battery Only Mode	up to 1,5 hours

BUGGY HUNTER MK-200. MADE IN THE UAE

PERFORMANCE	
Overcome Moat	2 m
Overcome Vertical Rise (step)	up to 1,5 m
Minimum Turning Radius	on place
Full Battery Charging Time	3 hours
Ground Clearance	50 cm
Engine Type	diesel/petrol/electrical







# TRIMARAN





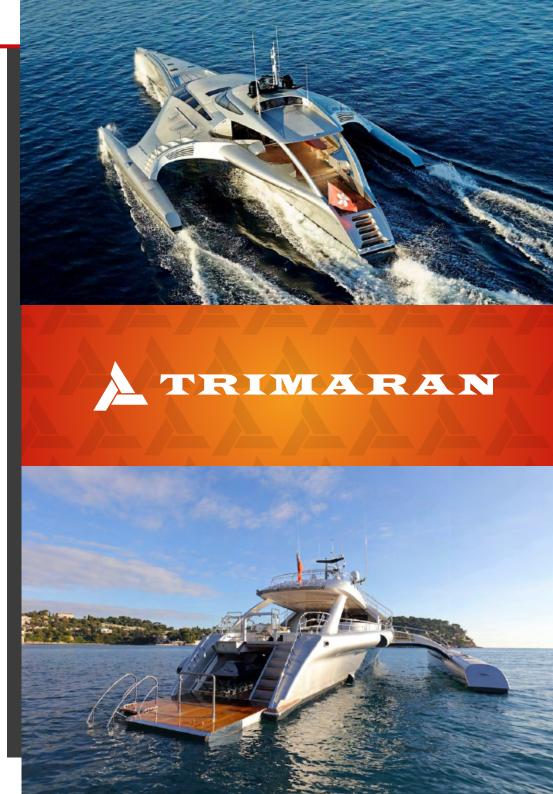
#### **TRIMARAN**

This unique vessel is all about stability, speed and efficiency. Trimaran build allows for 40% less energy use than a conventional mono yacht.

2 x MTU (2.600 HP each) engines allow for a thrilling top speed of 30 knots, and a cruising speed of 24 knot's.

Up to 6 guests are accommodated on board the superyacht, and also has accommodation for 6 crew members including the captain.

DIMENSIONS			VESSEL DETAILS			
Overall length		53.32 m	Туре		Moto	or
Length at water	line	52 m	Hull ty	ре	Trim	aran yacht
Beam		17.44 m	Hull co	nfiguration	semi	-displacement
Draught max.		1.46 m	Numbe	r of decks	2	
Gross tonnage		299	ACCON	IMODATION		
Full load displa	cement	195			6	
MATERIALS			Number of guests Number of crew		6	
			PERFOMANCE & CAPABILI		<u>'                                     </u>	
Hull		GRP	ll PERFO	MANCE & CAPA	ABILIT	TIES
Hull Superstructure		GRP GRP			ABILIT 30.0	
			Max. sp	peed	Т	kn
Superstructure PROPULSION				peed	30.0	kn kn
Superstructure		GRP	Max. sp Cruise : Fuel ca	peed	30.0	kn kn 20 L
Superstructure  PROPULSION  Type  Propellers		GRP	Max. sp Cruise : Fuel ca	peed speed pacity	30.0 24.0 18.72	kn kn 20 L
Superstructure PROPULSION Type		GRP	Max. sp Cruise : Fuel ca	peed speed pacity	30.0 24.0 18.72	kn kn 20 L
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### **TRIMARAN**













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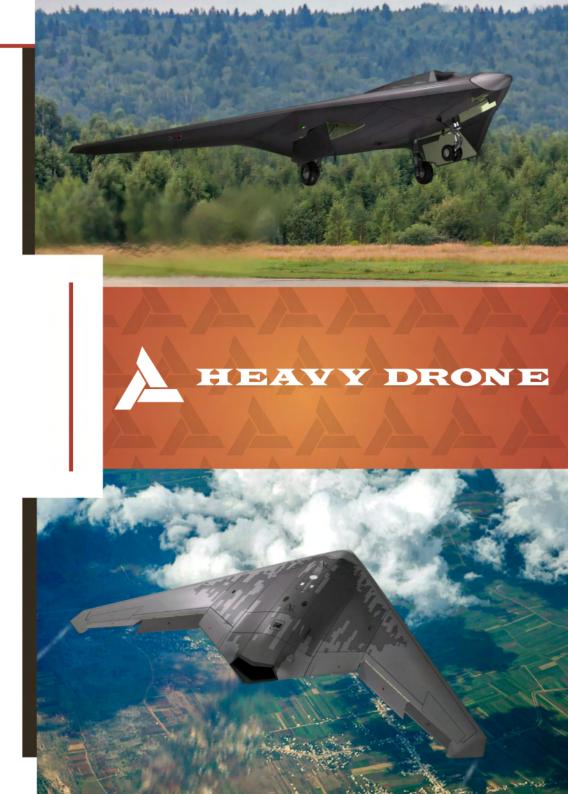
### UAV Heavy Drone

Stealth heavy unmanned combat aerial vehicle. The design is based on the flying-wing scheme and incorporates use of composite materials and stealth coatings, making the drone low-observable in flight.

#### **SPECIFICATIONS**

HEAVY DRONE.

DIMENSIONS	
Length	15100 mm
Wingspan	19100 mm
Combat load	2800 KG
Take-off weight	20000 KG
Maximum speed	1100 kmph
Range of flight	6000 km
Celing	18000 km







## **UAV**

#### Medium Drone

Glider of medium size, normal aerodynamic layout has a straight wing and V-shaped tail. The fuselage has a large elongation, asymmetrical cross section. To reduce weight while maintaining strength indicators, the airframe is made of composite materials.

Wing - centrally located, straight, large elongation with a slight narrowing with advanced mechanization. All the main means of mechanization are controlled by means of an electrical remote control system.

In front of the A-pillar and behind it there are internal volumes for accommodating the payload, mounting for the necessary equipment and its fairings.

The engine is an Austrian Rotax 914 with a power of 86 kW (115 hp), equipped with a turbocharger to increase altitude. Two-bladed propeller with a diameter of 1.9 meters.

Overall length	8 m
Wingspan	16.3 m
Overall high	3.2 m
Take-off wight	1000 kg
Normal payload / combat load mass	60 kg
Maximum payload / combat load	200 kg
Working radius	250 kg
Working range with UAV repeater	300 kg
Flight duration (with a load of 60 kg)	24 hour
Flight altitude	7500 m
Cruising speed	120-200 kmpl

# UAV Light Drone

Designed for remote monitoring, observation in a wide range of weather conditions of the underlying surface, including complex terrain and water surface.

The aircraft is suitable for searching for objects at a considerable distance with an accurate determination of their geographical coordinates.

Effective in conducting large-scale aerial photography of extended objects (for example, oil and gas pipelines, forests, water resources, roads and railways, etc.).

Built according to the aerodynamic scheme "flying wing".

The launch of the UAV is carried out using a pneumatic catapult, landing - by parachute with an automatically filled shock-absorbing cushion.

The apparatus is powered by an internal combustion engine.

Wingspan	1680 mm
Video/radio channel range	50 km/70 km
Take-off wight	16 kg
Flight duration	8 hour
Flight altitude	3000 m
Cruising speed	130-200 kmph
Takeoff	Pneumatic catapult
Landing	Parachute
Engine type	ICE pulling











#### **Unmanned Ground Vehicles**

An unmanned ground vehicle (UGV) is a vehicle that operates while in contact with the ground and without an onboard human presence. UGVs can be used for many applications where it may be inconvenient, dangerous, or impossible to have a human operator present. Generally, the vehicle will have a set of sensors to observe the environment, and will either autonomously make decisions about its behavior or pass the information to a human operator at a different location who will control the vehicle through teleoperation.

Overall length	3 m
Overall width	1 m
Overall high	0.7 m
Load capacity	100 kg

Type	Platform
Type of drive	Crawler trolley
Engine	Electrical
Operating time	6 hour





# RE-EQUIPMENT





### **RE-EQUIPMENT**

Re-equipment of any existing medium and heavy armored vehicles, tanks, infantry fighting vehicles, etc.

Replacement of the standard engine with a hybrid power plant.

#### Advantages:

- Significantly increases the power of the vehicles
- Increasing the maximum speed up to 40%
- Increased mobility and maneuverability by 80%
- The volume of the fuel tank is reduced by 80%
- Fire risk reduced by 80%
- The efficiency of the electric motor is 96.67 %, the heat generated is only 3.33%
- Increase the power reserve by 2 times
- The silence movement mode appears only on electric traction.
- Mimnimize chance of detecting the vehicles
- The electric generator makes it possible to have a power plant in the field to repair the machine.
- Significantly reduces the fire hazard of the vehicle.
- Problems with dust and underwater crossings of vehicles are reduced.

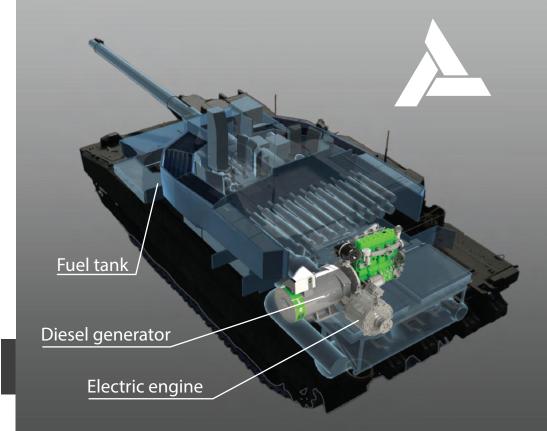
Instant movement without pre-starting and warming up the engine.

There are no analogues of this system.

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#### RE-EQUIPMENT



#### RE-EQUIPMENT



#### Compare table of engines

	MTU MT-883 V-12	Electric propulsion
Engine power, HP	1630	2928
Highway speed, km/h	71	80
Highway range, km	550	800
Power density, HP/T	27,5	53,63
Maximum torque, Nm	5000	7680
Rated speed, R.P.M.	2500	3000
Engine weight, Kg	1800	400



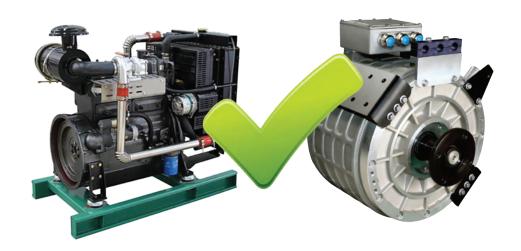
The structure of an electric motor is much simpler than an internal combustion engine, this significantly increases the life of the engine. There is no need to change oil and filters, the service interval is significantly increased.

The electric propulsion system is fireproof, unlike the internal combustion engine. Even if the batteries are damaged, they do not ignite.

Higher energy efficiency (efficiency of electric motors 96.67%) significantly reduces cabin heating, which reduces the load on the air conditioning system, crew and additional equipment.

The electric propulsion system is almost silent, which reduces the chance of detection and also makes the crew's stay inside much more comfortable.

On board a diesel generator is a power plant, you can power a field camp and perform any work in the desert





One of the main advantages of electric power is the ability to provide power to auxiliary systems (such as radar, guidance systems, air conditioning) silently. If the vehicle does not move, it does not make any noise, but at the same time, all equipment continues to function fully.

Ground combat vehicles with electric transmission will have better mobility and handling characteristics due to higher torque both at peak and at low RPM.

The volume of high-tech equipment on modern vehicles is increasing exponentially, which requires a constant increase in the power of the on-board network. In this regard, the installation of powerful batteries and generators on board military vehicles is inevitable, and the transition to electric motors is the most logical.

It is also possible to provide remote radio control of equipment.



Heating of the power plant strongly unmasks armored vehicles in the thermal range





# Advantages of replacing the internal combustion engine with an electric motor



Noise level is reduced from 130 to 55 dB



No overheating in the sun in the desert. With stands temperatures up to  $+70~{\rm degrees}~{\rm C}$ 



Easier to maintain, no need to replace engine oil, sand does not clog filters



Weight is reduced by 2 tons



Higher maneuverability increases by 80%



More power reserve increases by 40%

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