



The “Viator Series” UAS

Introducing

The Viator Series

Our Newest Line of All-Composite Flying Wing UAS's



The “Viator Series” UAS

The Viator Series

“Now, for the first time since 2001, we have been authorised to offer our second generation portfolio of proven UASs, The Viator Series, to government agencies and aircraft manufacturers globally.”



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The Viator Series

“Viator is the second generation of the first all composite flying wing UAS, the Inventus, developed in 2001 and in service with a number of US government military and civil agencies from 2002”

Defense Nuclear Non-proliferation (DNN), Department of Energy (DOE), Federal Bureau of Investigation (FBI), Department of Homeland Security (DHS), North American Aerospace Defense Command (NORAD), Federal Aviation Administration (FAA), National Security Agency (NSA), National Aeronautics and Space Administration (NASA), U.S. Marine Corps (USMC), U.S. Naval Research Laboratory, U.S. Air Force (USAF), U.S. Army (USA), Joint Theater Air Missile Defense Organization (Joint Integrated Air), Missile Defense Organization (JIAMDO), Naval Air Warfare Center Weapons Division, China Lake, CA (NAWCWD) and 46th Test Wing, Eglin Air Force Base (USAF).



The “Viator Series” UAS

Our UAS Origins

“Born in 2001 – Our All Composite Flying Wing UAS combines elegant design and superior performance in the same spirit of other great aircraft, such as the U2, the SR-71, and the latest arrival, the RQ-170 UAV”





The “Viotor Series” UAS

The Inventus Series

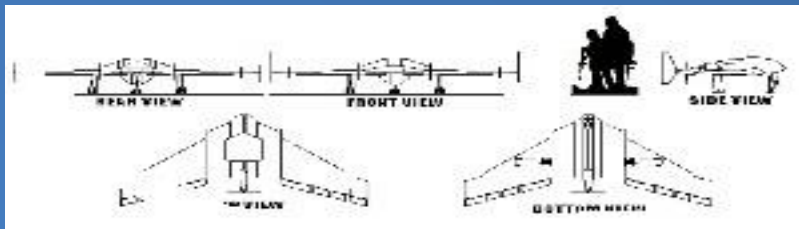
“The Inventus was first in flying wing design, first in all composite, and first in ‘plug and play’ power source, payload, and command & control”



The “Viator Series” UAS

The Viator Series

“The Viator is the most efficient and durable air foil with no fuselage or tail, unlike its commercially available competitors.”





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“The Viator Series is based on a single flying wing design, which supports a fully scalable fleet of twelve standard models, with a wing span from 3 feet to 40 feet, carrying a payload of up to 2,268 pounds, supporting missions up to 24 hours at maximum altitude of 25,000 feet over a distance up to 1,344 nautical miles, but also having a low stall speed of 15 mph to accommodate loitering in a figure 8 or oval pattern over a target area.”

Given certain payload and fuel trade-offs, the Viator 4 through 12 can fly up to 24 hours, bringing it into the Long Endurance UAS category.

The Viator 1 is a hand launched model and is available for special military and civil missions.

The set design of the Viator most notably provides for any custom size needed for specific mission requirements.



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“The Viator is powered by engines using silent electric, petrol and heavy oil motors, with models dependent on the thrust needed for specific missions.”

The silent electric motor was designed in conjunction with the U.S Navy.

The use of heavy oil is particularly advantageous for efficient storage on ships, where heavy oil is a standard fuel.

Optionally, The Viator can be powered by a turbine engine providing speeds up to 300 mph.



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“Viator is highly reliable, strong, and versatile and these features translate easily into high mission success rates, larger payloads, fewer damage possibilities, and variable mission applications.”

The Viator Series is an all composite UAS constructed using a technique called Advanced Carbon Composite Monocoque where the outer skin is the actual airframe, providing exceptional empty airframe to fully loaded ratios and high payload capacity.

The Viator Series is a blended flying wing. It therefore has no separate cylindrical fuselage, tail and wing. For this reason the air frame is strong, thick, compact and light weight. It is unique as it has an empty weight to full weight ratio of one to three.



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The Viator Series

“ The Viator Series carries multiple sensing and photographic payloads”

Sampling of Some Sensors/Devices Available

- High Resolution electro-optical pan-tilt-zoom
- Forward Looking Infra-Red (FLIR) Camera
- Thermal Imaging cameras and devices
- Miniature Imaging Synthetic Aperture Radar (Mini-SAR)
- Biological, Chemical and Radiological sensors
- Hazmat Detection Devices



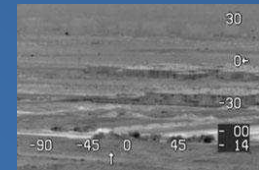
High Resolution PTZ



FLIR Infra-Red



Electro-Optical



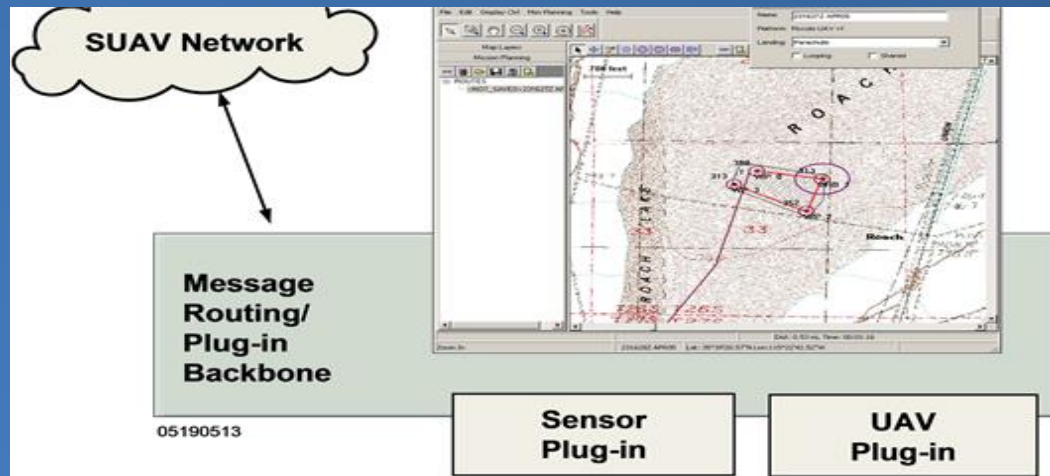
Thermal Imaging



The “Viator Series” UAS

The Viator Series

“Viator’s command & control system is modular and therefore can optionally accommodate the Northrup Grumman command & control system, our own designed and developed command and control system or other third party manufacturer’s systems.”

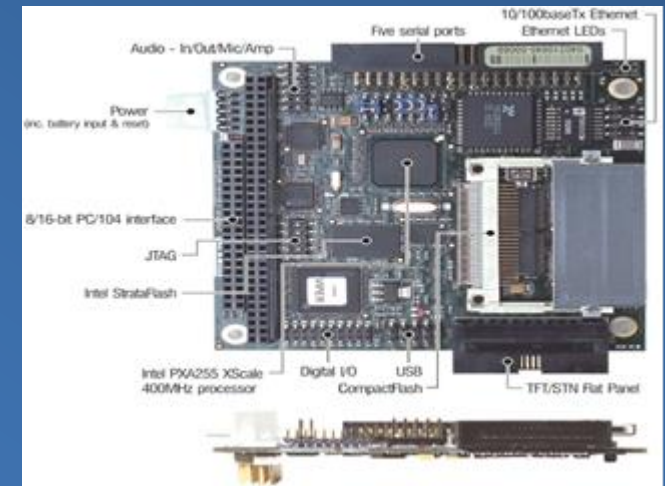
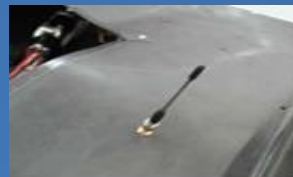




The “Viator Series” UAS

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“Viator’s command and control operate using a line of sight or GPS.”





The “Viator Series” UAS

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“Viator’s data and video links are real time or store and forward.”

Data Link

- Real-time 2-way communications between ground station and UAV mission computer, autopilot and sensors
- COTS 900 MHZ or 1.3GHZ 1 watt spread spectrum IP radio provide range of 60 miles LOS
- Option for software defined IP radio that is JTRS SCA compliant.
- Radio is available in an unclassified but secure mode, or with Type 1 encryption

Video Link

- NTSC video and audio
- Available in L, S, C or X band
- Up to 5W power output
- Range up to 20+ miles depending on power and antenna selection





The “Viator Series” UAS

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“Viator’s recovery systems are comprehensive, including beyond line of sight robust electronics and autonomous routines to protect both the mission and the airframe as compared to its competitors. In highly exceptional situations we can even deploy a parachute”





The “Viator Series” UAS

The Viator Series

“The Viator is perfectly suited to various military roles of the Navy, Air Force, Army, Special Forces and Coast Guard”

- Reconnaissance and surveillance
- Damage assessment & early warning
- Submarine spotting
- Mine detection
- Strike targeting
- Combat support
- Rapid smoke camouflage disbursement
- Offshore oil & gas and fishing rights protection
- Sea lane protection and deterrence



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“The Inventus, the first generation of our UAS’s, has been used in a number of military missions and settings.”

U.S. Government and Military Ranges, Nevada Test Site, Hazmat Spill, Center, Frenchman Flats, NV, Nellis Range, NV, FBI Academy, Quantico, VA, White Sands Missile Range, NM, Redstone Arsenal, Huntsville, AL, Bolling Air Force Base, District of Columbia, US Army Center for Air Defense, El Paso, TX, and UAV Battle Lab, Creech Air Force Base.



The “Viator Series” UAS

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“The Civil market for UAS’s is beginning to develop throughout the world”

The growth in Asia Pacific, The Gulf, and Africa is coming from the use of UAS’s in the protection of off shore territorial oil and gas assets and protection against piracy in highly congested and contested water ways.

The growth in Europe, the Middle East and Africa is coming from the use of UAS’ s in the support of local policing, and in a variety of protection services sectors, including tanker protection.



The “Viator Series” UAS

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“The Viator is positioned to take advantage of the burgeoning civil market around the World”.

- Aerial survey & mapping
- Flood & disaster assessment
- Air sampling & early warning: Chemical, biological, radiation
- Weather data collection and Environmental monitoring
- Railway, pipeline, power line monitoring
- Commercial security at large installations
- Maritime & Wilderness/Parks Patrols
- Foliage density monitoring
- Search & rescue
- Surveillance of ports, vessels, facilities, and events
- Crop management



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“The major governments and their regulatory agencies throughout the world are expediting the establishment of comprehensive rules regarding the use of UAS’s in civilian air space.”

- The US Senate, in 2011, passed funding for the Federal Aviation Administration. One of the provisions states that the FAA clear the path and set the rules for wider spread use of UAS’s for governmental and commercial purposes.
- The European Commission , in 2011, set the objective of making European industry competitive in the world for the manufacture, export and use of UAS’s and of raising the importance of UAS ‘s for civil use.



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“Inventus, our first generation UAS, has been granted approval by the FAA to fly in civilian air space.”

Inventus is the only UAS to be granted approval to fly in the sensitive Washington DC Corridor. Inventus took part in radar detection missions on behalf of the US Defence Department, Homeland Security, and the FAA in the Corridor.





The “Viator Series” UAS

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“The Viator Series is positioned as a valuable national strategic asset for government and an opportunity to be a major exporter of UAS’s throughout the World”



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“The Viator Series can be manufactured and flying in six months from the time of Agreement.”

Ready for service in a number of settings:

- Military - In Theatre Deployment with multiple services and missions
- Civil - Tanker Protection, Territorial Waters Protection, Policing Support



The “Viator Series” UAS

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“The Viator Series is positioned as a valuable addition to a manufacturer’s existing UAS fleet, filling a critical part of its line.

For those manufacturers without a line of UAS’s, the Viator Series offers a unique opportunity to acquire a fully scalable fleet, with a minimum of twelve airframes, having a wing span from 3 to 40 feet, carrying a payload of up to 2,680 pounds, supporting missions up to 24 hours at maximum altitude of 25,000 feet over a distance up to 1,344 nautical miles.”



The “Viator Series” UAS

Research, Development and Manufacturing Costs

The Viator Series has the lowest cost of Research, Development and Manufacturing of any large portfolio of UAS's.

The entire Viator Series of twelve airframes are scaled from a single fixed design.

The airframes are all-composite and each model is constructed from a single mold.

The range of airframe models meets most military, civil and civilian mission and operational requirements without any changes to the design.

The airframes can carry a large number of different ISR payloads without changes to the design.

Most of the same manufacturing assets and human skill sets can be used across the entire range of models.

Shaping of the air foil and use of different material in the composite weave, to satisfy special mission requirements, can be done quickly and cost effectively without changing the design.

All of these factors minimize materially the cost of R&D and manufacturing and contribute to the Viator being the lowest cost per airframe across the line in the market.



The “Viator Series” UAS

ISR Payload, Command & Control and Propulsion Systems Costs

The Viator Series has the lowest overall cost of employable payloads, Command & Control, and Propulsion Systems.

The sensors, cameras and propulsion systems are all modular and can be inserted in the airframe through a number of all purpose hatches or on top or bottom of the airframe.

The entire Viator Series can accommodate almost all types of off the shelf sensors, cameras and special payloads in its hatches and without changes to the airframe.

The Viator Series can accommodate our own C&C, which has many off the shelf components, or third party C &C without changes to the airframe.

The Viator Series accommodates modular electric, petrol, and heavy oil propeller propulsion systems which can be slotted in the rear of the UAS without any changes to the airframe.

This degree of modularity, flexibility and use of our own C&C or off the shelf payloads and propulsion systems, contributes materially to the overall low cost of the UAS.



The “Viator Series” UAS

Training, Support, Operations, Repair, Maintenance and Transport Costs

The Viator Series delivers the lowest overall operational and support costs.

Training, including flight, command & control, autonomous and LOL operations, ISR operation and propulsion systems, is the same across Viator’s twelve models, significantly minimizing time, costs and personnel numbers, while maximizing highly skilled staff in a growing trend toward all-composite UAS’s.

The operational simplicity of the airframe, plug and play payloads, and C&C requires fewer in-theatre and out-of-theatre operations and support staff, contributing to lower costs for both.

The blended flying wing structure dramatically minimizes damage to normal fuselage, wing and tail structures of typical airframes. The all-composite construction offers an exceptionally strong airframe with minimal damage characteristics. Together, the all composite and blended wing construction contributes to very low repair and maintenance costs.

The Advanced Carbon Composite Monocoque, whereby the outer skin is the actual airframe creates an exceptionally large internal volume, accommodating greater payloads and fuel capacity, in a very compact airframe. As importantly, the compact airframe can be transported to theatre less expensively.



4 of the 12 Standard “Viator Series” UAS Models

	Viator Series		Viator 2		Viator 4		Viator 10		Viator 12	
Wing Span	3 - 40	feet	7	feet	14	feet	35	feet	40	feet
Wing Area	10 - 340	square feet	10	square feet	40	square feet	280	square feet	340	square feet
Height	4 - 24	inches	4	inches	8	inches	20	inches	24	inches
Interior Volume	1.2 - 216	cubic feet	1.2	cubic feet	9.6	cubic feet	150	cubic feet	216	cubic feet
Payload	17 - 1968	pounds	19	pounds	220	pounds	1890	pounds	1968	pounds
Empty Weight	16 - 1472	pounds	16	pounds	80	pounds	980	pounds	1472	pounds
Gross Weight	35 - 3440	pounds	35	pounds	300	pounds	2870	pounds	3440	pounds
Cruise Speed	40 - 82	knots	40	knots	55	knots	60	knots	82	knots
Maximum Speed	104 - 176	knots	104	knots	121	knots	176	knots	176	knots
Climb Rate (Sea Level)	variable	feet per minute	3000	feet per minute	2000	feet per minute	2000	feet per minute	2000	feet per minute
Climb Rate (10,000 ft.)	variable	feet per minute	1500	feet per minute	1400	feet per minute	1400	feet per minute	14000	feet per minute
Time Aloft (Cruise)	12 -22	hours	12	hours	20	hours	21	hours	22	hours
Range	600 - 1344	miles	600	miles	1100	miles	1200	miles	1344	miles
Altitude (MSL)	10,000 - 25,000	feet	12,000	feet	15,000	feet	25,000	feet	25,000	feet
Communication Range (LOS)	25	miles	25	miles	25	miles	25	miles	25	miles
Communication Range (BLOS)	satellite, unlimited	miles	satellite, unlimited	miles	satellite, unlimited	miles	satellite, unlimited	miles	satellite, unlimited	miles
Power Plant	variable		Electric, Mogas, Diesel		Electric, Mogas, Diesel		Turboprop, Mogas, Diesel		Turboprop, Mogas, Diesel	
Launch Method	variable		Catapult		Catapult, Taxi		Taxi		Taxi	
Recovery Method	variable		Belly, Parachute, Net Capture		Belly, Wheel-gear, Net Capture		Wheel-gear, Deck-Arresting Cable		Wheel-gear, Deck - Arresting Cable	



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Further Detailed Information

The following detailed information is available on request:

- Product overview and detailed specifications.
- IP technology transfer overview and detailed specifications
- IP pricing
- Manufacturing and materials costs
- Cost per air frame analysis