WORLD RECORD FLIGHT DURATION FOR REMOTELY CONTROLLED UAV
80 hours - December 5-8, 2014
Orion is a medium-altitude persistent Unmanned Aircraft System (UAS) with unmatched endurance, range, mission capacity, affordability and rapid fielding of new technologies. The combination of mission capability and flexibility enables the warfighter to quickly adapt to new challenges and dynamic conditions, breaking paradigms for persistent operations and enabling missions never before possible. System affordability ensures these new technologies are achieved without putting additional strain on the nation’s budget.

### Mission Flexibility and Rapid Deployment of New Capabilities
Accommodation for mission payloads on the Orion UAS is analogous to an airborne ISR ‘truck,’ with the ability to deploy over 2,600 lbs of payload, 11kW of dedicated payload power (expandable to 22kW), over 146 cubic feet of internal installation volume not including pods, flexible payload mounting provisions, and large external surface areas available for installation of antenna. Typical UAS require design modification for new mission configurations, which can lead to costly block or variant solutions that can take years of development, integration and test before reaching the field. On the Orion platform, sensors and weapons can be rapidly removed, reloaded, replaced and integrated based on the prioritized tasks and missions in as little as 24 hours.

**FORWARD PAYLOAD BAY**
- Max payload mass: 950 lbs
- Volume: 100 ft³
- Power: 5.4kW (10.8 kW optional)
- Field of view: Forward horizon, nadir, zenith

**AVIONICS BAY**
- Max payload mass: 200 lbs
- Volume: 20 ft³
- Power: 5.4kW (10.8 kW optional)
- Field of view: Left/right horizon

**AFT PAYLOAD BAY**
- Max payload mass: 850 lbs
- Volume: 26 ft³
- Power: 5.4kW (10.8 kW optional)
- Field of view: Aft horizon, nadir

**WING HARDPOINTS**
- Max payload: 1,200 lbs
- Volume: 21 ft³ (Standard Pod)
- Power: 5.4kW (10.8 kW optional)
- Field of view: Forward, aft, nadir
**Persistent Operation from Remote Locations**

The Orion UAS combines a highly efficient aerodynamic design with lightweight construction and efficient heavy fuel propulsion enabling over five times the endurance and range of current ISR platforms. This game changing persistence enables a single aircraft to perform a continuous five day mission while carrying over 1,000 lbs of mission payloads, allowing the warfighter to drastically extend the area of coverage. A single Orion UAS can perform two days of persistent surveillance when operating from bases over 3,000 miles away from the target of interest.

**Affordability for the Warfighter**

Orion’s revolutionary persistence allows the platform to spend more time over the target of interest, drastically reducing the time required to transit to and from target locations. This increase in mission availability lowers the amount of aircraft, personnel, fuel, maintenance, and support logistics needed to perform mission sets, cutting operational costs to less than one third of what is achievable using currently deployed assets. The increased range allows operation from regional bases safely removed from forward basing, further lowering the security, logistical support and fuel delivery costs. This allows us to pull our soldiers out of harm’s way and enables operations in regions not feasible with today’s UAS.

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**RANGE/TIME ON STATION**

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<th>RANGE</th>
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<tr>
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Strategic and Tactical Operations Generous payload accommodations and optimized flight profile make the Orion UAS ideal for deploying ISR sensors ranging from today’s state of the art Full Motion Video (FMV), Signals Intelligence (SIGINT) and Synthetic Aperture Radar (SAR), to tomorrow’s sensor technologies including Wide Area Airborne Surveillance (WAAS), hyperspectral imaging, Dismount Moving Target Indication (DMTI), network hubs and foliage penetration radars. Accommodations for increased onboard processing will enable Orion to generate more relevant information for the warfighter and alleviate bottlenecks in bandwidth by supporting multi-intelligence sensor fusion and enhanced processing, exploitation and dissemination (PED) of mission data. A radius of operation exceeding 4,000 miles will allow access to areas previously prohibitive for persistent operations, including geopolitical hotspots in the Middle East and Asia, anti-piracy along the coast of Africa, drug traffic monitoring deep into Central and South America, and emergency response to remote island nations.

An Asset to National Defense The Orion UAS empowers the warfighter and emergency responders to quickly adapt to rapidly evolving global challenges and opens up a new realm of possibilities for persistent mission sets including wide area ISR, ad-hoc communication networks and relay, ballistic missile defense (BMD), maritime domain awareness, disaster relief and persistent strike. Orion open architecture will assure interoperability with other systems, drive affordability of mission upgrades, and lower the time from conception to operational deployment of new capabilities. Orion is an ideal model for several of the new DoD acquisition efficiency initiatives to add capability without increasing costs, below:

- Require open system architectures
- Mandate affordability as a requirement
- Incentivize innovation in industry
- Involve dynamic small businesses in key roles in defense acquisition
- Restore competition, affordability and productivity in defense spending
Orion Air Vehicle:
- Gross Take-off Weight: 11,200 lbs
- Useful Payload Weight: 2,600 lbs
- Useful Payload Space: 146+ ft³
- Dedicated Payload Power: 11kW (22 kW Option)
- Propulsion: Dual FAA certified heavy-fuel engines
- Reliability: Triplex avionics for reliable operation

Orion Performance:
- Endurance: 120 hours with 1,000 lb payload
- Mission Radius: 4,000 miles with 24 hours on-station
- Ferry Range: 15,000 miles
- Operating Ceiling: 30,000 ft
- Speed: 67-85 knots cruise, 120 knots dash

Orion Payload Options:
- Multi-Spectral Full Motion Video (FMV)
- Wide Area Airborne Surveillance (WAAS)
- SAR/Dismount Moving Target Indication (DMTI)
- Hyperspectral Video and Imaging
- LOS and BLOS Communications Relay
- Signals Intelligence (SIGINT)
- Maritime Domain Awareness radars
- Foliage Penetration (FOPEN) radars
- Onboard Processing, Exploitation, and Dissemination (PED)
Aurora Flight Sciences is a leader in the development and manufacturing of advanced unmanned systems and aerospace vehicles.

We are headquartered in Manassas, VA and operate production plants in Bridgeport, WV and Columbus, MS. Aurora also has Research and Development Centers in Cambridge, MA and Mountain View, CA.