



# AirStrato, The most amazing air robot in the world

There is a new age for flight. The age of unmanned autonomous flying vehicles. But this new revolution is not for everyone. Few businesses, military and research institutions can afford to purchase a high performance UAV like the Predator for example. Even fewer can get access to a stratospheric flying Global Hawk. The rest have to contend with low performance unmanned aircrafts.

We merged the performance of the former with the affordability of the latter. And here, the revolutionary AirStrato comes into the market. It is an aircraft with the flight ceiling of the Global Hawk, the endurance and the size of the Predator and the payload of the Shadow, at the cost of an expensive car. This will allow small businesses, research institutions and even individuals to benefit from an affordable, high performance aerial robot.

AirStrato is amazing because is electrical powered and is able to fly almost twice as high as a commercial airliner; it can be controlled from any part of the world via satellite or GSM; it can takeoff and land from any remote location; it is very beautiful and affordable.

When ARCA decided to create this aircraft we had only one goal in mind: to create a tool that will expand the human capabilities to explore and discover.

The price range for the AirStrato products is between \$80,000 and \$140,000. Small-scale drones able to carry a small payload currently cover this market segment, possessing limited autonomy, range, speed and flight ceiling.

AirStrato product line is well above these limitations and has performance similar to UAV's on the market in the price ranges between \$500,000 and \$4 million. Although payload capacity is lower compared to these UAV, the flight performance such as flight ceiling and global operation capability is a great plus.

There are two AirStrato models initially available:

## AirStrato Explorer

AirStrato Explorer, available from \$140,000, is a stratospheric flying robot designed to meet your highest expectations of an unmanned aerial vehicle. A flight ceiling of 60,000 ft (18,000 m), 20 hours of endurance and the capability to be controlled via satellite or GSM is far beyond any other civilian unmanned aerial vehicle can provide for this price range.

AirStrato Explorer can take-off and land from any location, no matter how remote.

The Explorer has a take-off weight of 507 lb (230 kg) a wingspan of 52.5 ft (16 m), a length of 23.1 ft (7m) and a maximum speed of 106 mph (170 km/h).



## AirStrato Pioneer

AirStrato Pioneer, available from \$80,000, is a slightly smaller version of the Explorer, designed to perform flights at lower altitudes. A 26,000 ft (8,000 m) flight ceiling, satellite control (with optional satellite communication device), and 12 hours of endurance makes Pioneer a very competitive air robot.

It is more agile than the Explorer and has a higher maximum speed at low altitudes.

The Explorer has a take-off weight of 485 lb (220 kg) a wingspan of 39.4 ft (12 m), a length of 23.1 ft (7m) and a maximum speed of 50 mph (120 km/h).



## Common features

Both the Explorer and Pioneer are built entirely from composite materials, are electrical powered, relying on internal batteries and solar cells. They are also equipped with recovery parachutes, which makes the flight a safe and enjoyable experience.

The AirStrato Explorer and Pioneer are launched into the air with the Accelerator, a pneumatically driven catapult that allows the aircraft to take-off in less than a second, smoothly sliding on the Accelerator. AirStrato is the largest air-robot in the world that is taking-off using a ground-based catapult, which makes it ideal for operations from remote areas and even from ships.

The avionics is the same you would expect a modern manned aircraft to possess. The aircraft is equipped with inertial flight stabilization and a programmable autopilot. The onboard sensors provide navigation and internal equipment status information to the flight computers. The data are then transmitted to the ground-based Interface. The onboard ADS-B system makes AirStrato already capable to operate in the US NextGeneration Air Transportation System. A VHF radio is also installed to allow communication to air traffic control or other aircrafts. The two-way transmission uses internet connection through local GSM and satellite network (as option for the Pioneer). The on-board computers automatically switches between connections if one fails, so there is always at least one connection between the aircraft and the ground pilot. All connections between the UAV and the ground station use Transport Layer Security and are encrypted with the AES 256 standard, that is the best possible encryption for civilian applications. The on-board computer features snapshot algorithm to prevent tampering with system and avionics files. The connection server has a demilitarized zone protection with double firewall and Intrusion Detection and Prevention systems to block hacker intrusion. Also several servers in different locations, in US and EU are available as redundancy, that are ready to takeover the workload in case one ore more servers encounter denial of service attacks.

The AirStrato Explorer and Pioneer applications can include: border protection; both land and sea; disasters monitoring and management; contaminated areas monitoring; remote areas exploration, as arctic areas, ocean, mountains, forests, deserts; rescue missions; military reconnaissance; oil pipes and power lines monitoring; communication relay; high atmosphere scientific research; meteorology; auto and maritime traffic control; TV and cinema; internet delivery network over remote areas; or just flying for entertainment.

[AirStrato. Watch the video](#)



[The vision behind AirStrato. Watch the video](#)



## Preorders for AirStrato

Both products are currently under tests and are available for preorder at 20% price reduction for Explorer and 15% for Pioneer respectively, until production is started. Production is estimated to commence in March 2015 for Pioneer and in August 2015 for Explorer.

## About ARCA

ARCA is a for-profit aerospace corporation established in Las Cruces, New Mexico. ARCA SPACE main objective is the exploration of space. In order to reach this objective, ARCA builds and launches the most cost effective space vehicles.

In 15 years of activity we used technologies already existent, in an innovative way that allows access to space by reducing financial constraints. We strongly believe that the future of mankind is linked to the exploration of space.

We have the capability to mobilize hundreds of people from various civilian and military institutions (Navy, Air Force, Civilian Aviation, etc) and to closely work with them in order to achieve the proposed objectives. We built and launched a series of aerospace vehicles that made ARCA one of the most well known organizations involved in the development of private space flight.

ARCA SPACE achievements:

2004 - During the \$10 million, Ansari X Prize Competition, ARCA launched the first rocket, Demonstrator 2B.

2006 - ARCA built the world's largest solar balloon that lifted into the stratosphere the crew capsule of Stabilo, a manned suborbital vehicle created after the end of Ansari X Prize Competition.

2007 - The Stabilo program continued, this time with an even larger solar balloon lifting the complete Stabilo vehicle into the stratosphere.

2008 - ARCA joined the \$30 million Google Lunar X Prize Competition.

2010 - Helen rocket was launched at 120,000 ft, the event representing the first powered flight in the Google Lunar X Prize Competition. The rocket was transported into the stratosphere with the help of a helium balloon.

2012 - Haas rockets series was introduced, consisting of Haas 2B and 2C, a suborbital respectively orbital rocket launchers. The development of these launchers is currently our main activity.

2013 - The European Space Agency (ESA) awarded ARCA with a contract to test the parachutes system for the ExoMars spacecraft that will be launched to Mars in 2016.

2014 - AirStrato "The most amazing air robot in the world" performed the first flight at the beginning of this year.

For more details about AirStrato products go to [www.airstrato.com](http://www.airstrato.com)

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