JETSTREAM 'FLYING TESTBED'

A unique aircraft developed to be flown by pilots or as an Uninhabited Air Vehicle (UAV), the BAE Systems'Jetstream, known as 'The Flying Testbed' is an aerial laboratory that will this year trial a range of new technologies to be developed under the ASTRAEA programme. Including what is believed to be the the world's first autonomous weather avoidance system, in addition to 'sense and avoid' technologies and an autonomous emergency landing system.

HOW IT WORKS

1. Central passenger cabin developed as a test lab with powerful computers. Manned by a Flight Test Observer and System Operators to test different scenarios.
2. Pilot and co-pilot used for take-off and landing only – aircraft flies itself once in controlled airspace.
3. Cockpit-mounted camera acts as 'electronic eye'.
4. Antenna for ground-based and satellite-based communications.
5. Infra-red camera used for autonomous emergency landing system.
6. Aircraft Identification Antenna (ADS-B=Automatic Dependent Surveillance – Broadcast).

JETSTREAM 31 (FLYING TESTBED)

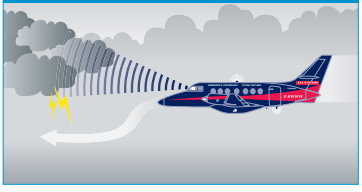
A twin-turboprop airliner with pressurised fuselage – originally designed to carry 16 passengers.

AIR CREW:	2 plus 3 Test personnel
GROUND CREW:	2 (Uninhabited Air Vehicle Commander + Flight Test Observer)
WINGSPAN:	52 feet
LENGTH:	47 feet 2 inches
HEIGHT:	17 feet 5 inches
MAX SPEED:	256 mph
CRUISE SPEED:	195 mph
SERVICE CEILING:	24,000 feet
RANGE:	780 miles

KEY TESTS

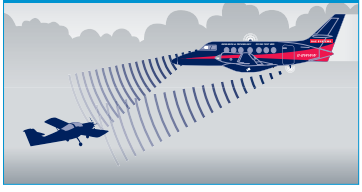
To fly in shared airspace means a UAV must do what is safe – whatever the situation.
Here are just three of the key concepts that the BAE Systems' Jetstream 'Flying Testbed' will trial during a series of flights in controlled airspace this year.

WEATHER AVOIDANCE



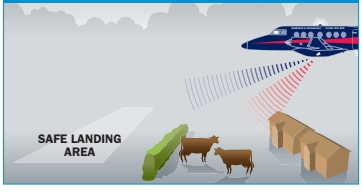
Using an 'electronic eye' mounted in the cockpit linked to computer systems and the 'brains' of the aircraft, the Jetstream will trial what is believed to be the world's first autonomous weather avoidance system. This means recognising cloud types and plotting a course that allows evasive action.

SENSE AND AVOID



Avoiding other air traffic means a UAV needs to 'see' potential hazards. The BAE Systems'Jetstream will trial 'sense and avoid' technology using its Aircraft Identification Antenna to pick up aircraft transponder signals, and will use its 'electronic eye' to pick up 'visual' contact if no signals are being emitted.

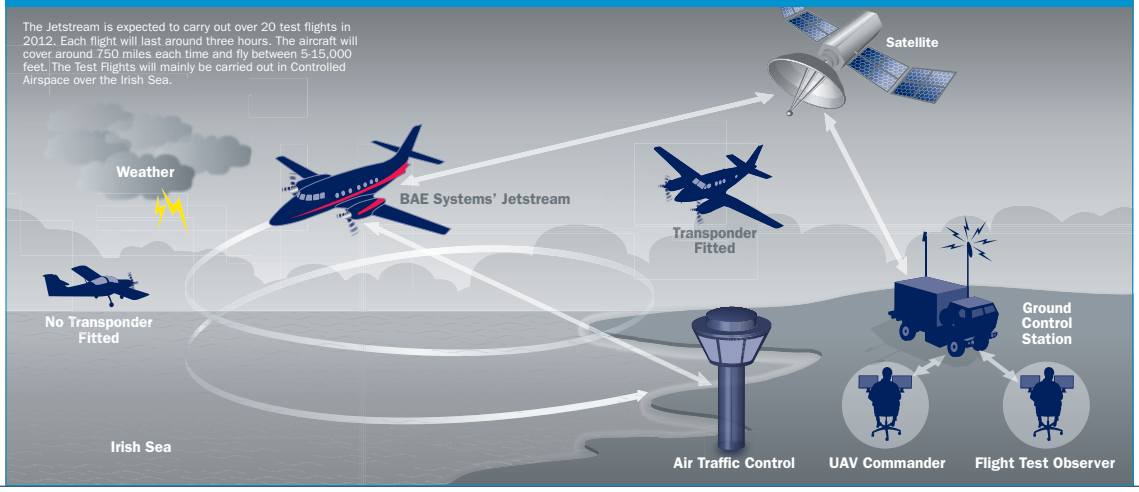
EMERGENCY LANDING



If a UAV needs to make an emergency landing, it is essential it can do so without causing danger. The BAE Systems'Jetstream can test the systems which find safe landing areas by detecting and avoiding life on the ground.

TEST FLIGHTS IN CONTROLLED AIRSPACE

The Jetstream is expected to carry out over 20 test flights in 2012. Each flight will last around three hours. The aircraft will cover around 750 miles each time and fly between 5-15,000 feet. The Test Flights will mainly be carried out in Controlled Airspace over the Irish Sea.



ASTRAEA

ASTRAEA (Autonomous Systems Technology Related Airborne Evaluation & Assessment) is a UK industry-led consortium focusing on the technologies, systems, facilities and procedures that will allow autonomous air vehicles to operate safely and routinely in civil airspace over the United Kingdom. The programme is a collaboration between AOS, BAE Systems, Cobham, EADS Cassidian, QinetiQ, Rolls-Royce, Thales, the Technology Strategy Board, the Welsh Government and Scottish Enterprise. http://www.astraea.aero

BAE SYSTEMS