



This solution has to meet performance requirements of a highly mobile force at all locations, including operations at austere forward operating areas worldwide, potentially being hostile, where the aircraft will be receiving ranging and navigation data from the satellite constellation and differential ranging data or corrections from a ground/shipland station via a datalink. This, in turn, will allow the aircraft to terrain-follow, evade threats and then safely land.

In another program, a cost-effective Innovative Global Positioning System (GPS) jamming program called JAMFEST is organized to broaden both the operational and test community's awareness of GPS vulnerabilities. Organized for the first time in May 2004, for the duration of one week, several ground-based, mobile and aerial jamming systems were employed, offering some 30 jamming scenarios to some 12 customers, including multi-service Department of Defense (DoD) organizations, several defense contractors and civil organizations.

At JAMFEST, participants are able to walk, drive or fly through GPS jamming environments to test the effectiveness of advanced anti-jamming technologies while exposed to real-life signal jamming scenarios. For this program, the 74th Test Squadron sets up and characterizes the jamming environment and provides a 'quick look' report stating when jammers are activated and describes the active interference signals.

In support of this program, the 586th Flight Test Squadron characterizes the jamming field using its C-122, to which purpose the aircraft is configured with Canonical Reception Pattern Antenna (CRPA) ports and Fixed Reception Pattern Antenna (FRPA) ports on the top and bottom of the fuselage. For this mission, the C-122 carries 74th TS-owned test equipment designed to collect airborne reference measurements of the GPS jamming environment, flying data-collection sorties that span the airspace and altitudes used by the different systems under test. Part of the equipment installed in the cabin is a rack-mounted Central Inertial Guidance Test Facility (CIGTF) Reference System, consisting of navigation sensors/subsystems and the Data Acquisition System (DAS), the latter performing the primary functions of data collection and real-time control for the Embedded Global Positioning System/Inertial Navigation System (EIG), GPS receiver/receivers, Standard

Six Raytheon (Beech) C-122s were bought by the USAF initially to serve in the operational support airlift role with the Air National Guard. This example is now assigned to the 586th FLTS to undertake navigation/landing equipment tests, principally on behalf of the 74th Test Squadron - the GPS specialist. The empty cabin can quickly be reconfigured with various test loads (right).

Navigation Unit (SNU) INS and Galileo CR-100 Range/Rate Interrogator/Transponders System (RRS). JAMFEST IV took place in the first week of November 2005.

A study is currently being undertaken to fit two pylons underneath the C-122's fuselage (same pylon as used by the AT-38) to enable the aircraft to carry podded test equipment. Over the last seven years, the 586th averaged some 155 hours per year with the C-122, but, as with all aircraft in use, test programme hours can vary significantly with the users' need for test support.

F-15 for test

Until the end of August 2005, a single F-15D Eagle was assigned to the 586th Flight Test Squadron. This specific aircraft was previously an Edwards test plane about to be decommissioned when the 586th managed to convince the 46th Test Wing to acquire it for its test purposes. This was because of its specific operational and representative radar capabilities, and some other capabilities that it possessed.

As a consequence of performing different types of testing, both the Edwards and Eglin test wings have two different instrumentation requirements and, prior to its transfer, the aircraft needed to be de-modified at Edwards AFB. Its instrumentation equipment had to be removed as it was test-specific, but the aircraft retained its Suite 3 software loads, several of the components for the Joint Tactical Information Distribution System (JTIDS) and other upgrades. Each of the 46th Test Wing F-15s is in a test-specific configuration, some having instrumentation capabilities or having been modified for developmental weapon testing. In order to make its F-15 fit for its own tests, the Test Wing at Eglin made its own basic set of modifications, installing its own instrumentation equipment for data collection and real-time monitoring before it was transferred to Holloman.

These are basic modifications allowing test parameter recording of data and/or voice, and data telemetry of parameters to a ground control



room. This particular aircraft also received other test-specific modifications for testing with the Airborne Tower Infrared Measurement System (ATIMS). This is a multi-sensor data collection pod used to determine the operational effectiveness of infrared countermeasures to deny acquisition or detect the seeker head of cruise missile seekers, and can, among other capabilities, evaluate the effectiveness of countermeasures such as flares. At the end of October 2005, the F-15D temporarily returned to Edwards, to perform further tests flying the ATIMS III pod.

Prior to this, at the end of August 2005, the aircraft was flown back to Eglin, as currently the entire fleet of Operational Test and Evaluation (OT&E) and Developmental Test and Evaluation (DT&E) Eagles is based there. Currently the aircraft does not have FDL, and the 586th is working with Eglin to get that modification accomplished as soon as possible, as it is needed to support many of the unit's test/target requirements. In addition, in the February 2006 time frame, this specific aircraft will receive another set of modifications for some upcoming testing. To avoid any misunderstanding, although the aircraft