

Thales Avionics, Inc.
Experimental License Modification Request
for
Testing the Thales Advanced Connectivity Terminal, Ka-band
(ACT-A) ESAA over O3b Satellites

Applicant Description

Thales Avionics, Inc. with its InFlyt Experience operations in Melbourne and Orlando, FL and Irvine, CA is a global leader in providing leading-edge, connected inflight entertainment systems and services, including high-speed Internet connectivity, to commercial airlines worldwide. Thales is currently developing and testing a new Advanced Connectivity Terminal, Ka-band (ACT-A) using the ThinKom Ka2517 antenna, that is a key component of Thales's end-to-end inflight connectivity (IFC) service offerings to commercial airlines. Thales's IFC service using the ACT-A will enable airlines to meet the increasing demands of passengers' inflight connectivity needs and provide access to critical, real-time inflight data to improve airline operational efficiencies.

Reasons For Modification Request

On December 12, 2018 OET granted Thales Avionics an experimental authorization valid until October 1, 2020 for ACT-A flight testing in CONUS and US territorial waters, the Gulf of Mexico, Atlantic Ocean, and Caribbean Sea.¹ This grant covers ACT-A communication with AMC-15, AMC-16, Jupiter-1, and Jupiter-2 satellites.

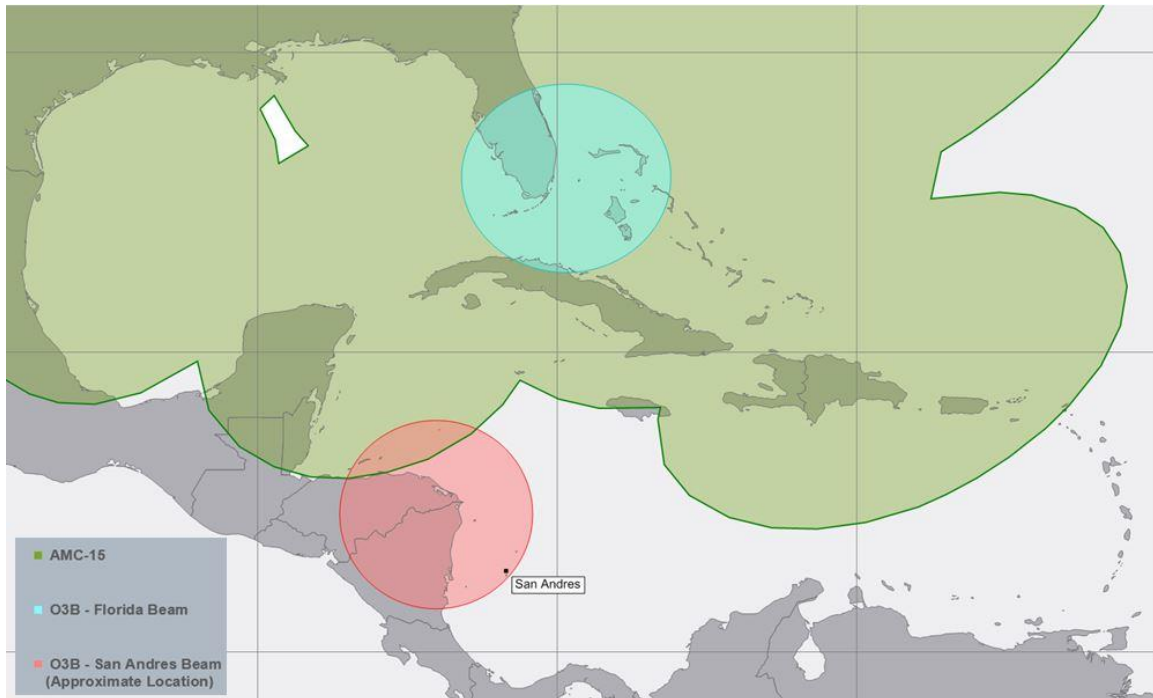
Thales desires to expand the scope of its ACT-A test program to include communication with O3b's medium earth orbit (MEO) satellite constellation. Grant of this request would allow Thales to evaluate ACT-A system capabilities in a hybrid GEO-MEO network and study the complexities associated with provision of aero IFC services in such a network.

Thales therefore seeks to modify the experimental license referenced above by adding O3b (Call Sign S2935) as a Point of Communication, and adding new spectrum, power levels, and emission designators as shown in the Form 442 submitted with this request.

Test Description

Thales intends to conduct both stationary and mobile tests, including terrestrial-only mobile tests using a custom van and flight tests using a test aircraft. The graphic below show the approximate coverage areas of the two O3b spot beams to be used in the tests.

¹ See Call Sign WJ2XSO, File No. 0220-EX-CM-2018, granted December 12, 2018.



The O3b “Florida Beam” will be used mainly for stationary tests to be conducted at Thales HQ lab facilities in Melbourne, FL, and for terrestrial-only mobile tests in the Melbourne area using Thales’s custom van. In addition, the ACT-A may communicate with the Florida Beam during flight tests.

The O3b “San Andres Beam” will be used for flight tests over the Caribbean Sea to allow the ACT-A to test IFC service handovers between GEO (AMC-15) and MEO (O3b) satellites. Flight tests will be conducted using the same US-registered, Gulfstream G3 aircraft (tail number N710CF) leased by Thales for ACT-A flight tests conducted in late 2018 under the active experimental grant referenced above.

Consistent with Thales’s active ACT-A experimental grant, flight tests will operate only in CONUS or above US territorial waters, the Gulf of Mexico, Atlantic Ocean, or Caribbean Sea. The ACT-A will not operate in the airspace or above territorial waters of any foreign country, and all test flights will originate and terminate within CONUS (no takeoffs or landings of the test aircraft will occur in foreign countries).

To ensure non-interference into GSO systems, the ACT-A will operate at reduced power levels when communicating with O3b.

An engineering certification letter from O3b is being submitted as an Exhibit with this request.

Stop Buzzer

The 24/7 stop buzzer contacts for this testing are:

Martin Matura (phone 321-292-0878) or Thales Network Operations Center (phone 407-812-2538; email MOC@us.thalesgroup.com)