

United States of America
FEDERAL COMMUNICATIONS COMMISSION
EXPERIMENTAL
SPECIAL TEMPORARY AUTHORIZATION

EXPERIMENTAL
(Nature of Service)

WA2XEO
(Call Sign)

XD FX
(Class of station)

S-3178-EX-98
(File number)

NAME ORBITAL SCIENCES CORPORATION

experimental low-Earth orbit satellite model no. SS1400; 575 km, 180 deg.
(Location of station)

Special Temporary Authority is hereby granted to operate the radio transmitting apparatus described below:

Frequency (MHz)	Authorized Power (watt)	Emission Designator
18800 - 19300	5 (output)	10M0G1D/50M0G1D
17850	5 (output)	10M0G1D/50M0G1D

Purpose of Operation: Test and development of Ka-band NGSO FSS satellite system (Teledesic).
Contact: Thomas Lee Dawson (703) 397-1037

Special Conditions:

- 1) Satellite shall transmit only to earth stations in Washington state.
- 2) Satellite shall transmit only towards an earth station when the arrival angle at that earth station measured from the horizon is greater than 40 degree above the horizon and the satellite transmitter shall be turned off when this condition is not met (e.g., no beacon or unmodulated transmissions).

This special temporary authorization is granted upon the express condition that it may be terminated by the Commission at any time without advance notice or hearing if in its discretion the need for such action arises. Nothing contained herein shall be construed as a finding by the Commission that the authority herein granted is or will be in the public interest beyond the express terms hereof.

This special temporary authorization shall not vest in the grantee any right to operate the station nor any right in the use of the frequencies designated in the authorization beyond the term hereof, nor in any other manner than authorized herein. Neither the authorization nor the right granted hereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934. This authorization is subject to the right of use of control by the Government of the United States conferred by Section 706 of the Communications Act of 1934.

This authorization effective February 17, 1998 and will expire 3:00 A.M. EST. August 17, 1998



S-3178-EX-98

WZK00

ORIGINAL

January 23, 1998

Magalie Roman Salas
Secretary
Federal Communications Commission
Experimental Radio Services
P.O. Box 358320
Pittsburgh, PA 15251-5315

Re: ORBITAL -- Request for Special Temporary Authority to Operate
an Experimental Ka-Band Satellite Payload

Dear Ms. Salas:

Orbital Sciences Corporation ("ORBITAL") hereby requests special temporary authority ("STA") to operate an experimental Ka-band satellite payload for testing over a period of four (4) weeks, commencing on or about February 4, 1998. ORBITAL is separately filing an application to modify its existing experimental satellite license to include this Ka-band payload on an ongoing basis. Pending grant of that application, ORBITAL needs an STA to allow testing of the payload for insurance purposes.

ORBITAL intends to launch an experimental low-Earth orbiting satellite with a Ka-band payload on or about February 4, 1998. ORBITAL will operate that satellite in cooperation with Teledesic Corporation to conduct a program designed to test the operating characteristics and data communications and position determination capabilities of a Ka-band NGSO FSS satellite through a series of communications and tracking experiments. The Ka-band payload will operate on frequencies already assigned to Teledesic for its satellite constellation. Since the insurance policy on the payload covers only those anomalies identified within four weeks of launch, ORBITAL must have an STA to allow thorough testing of the payload within that time frame.

In accordance with Section 5.56 of the Commission's Rules, 47 C.F.R. § 5.56, ORBITAL provides the following information in support of its application:

Magalie Roman Salas
January 23, 1998
Page 2

Name and Address:

Orbital Sciences Corporation
21700 Atlantic Boulevard
Dulles, VA 20166

Need for Special Action:

As discussed above, the requested STA will enable ORBITAL and Teledesic to conduct a battery of tests upon a satellite payload in order to identify any anomalies within the period required under the applicable insurance policy.

Purpose of Operation:

To test a Ka-band satellite payload to identify operational anomalies.

Time and Date of Proposed Operation:

ORBITAL expects to commence testing immediately after launch of that satellite payload, which is currently scheduled to take place on or about February 4, 1998, and to continue testing for four weeks.

Class of Station, Call Sign, and Nature of Service:

The proposed station is a payload operating on Ka-band frequencies, call sign ~~WA2XGO~~, to provide Fixed Satellite Service from a low-Earth orbiting satellite.

WA2XGO

Location of Proposed Operation:

ORBITAL will operate its satellite in low-Earth orbit.

Equipment to Be Used:

ORBITAL will use an experimental space station, Model No. SS1400, which it will manufacture.

*575 km, 0 eccentricity, 180° inclination;
1030 ascending, 5970 pass*

Magalie Roman Salas
January 23, 1998
Page 3

Frequencies:



The Ka-band payload will transmit on downlink frequencies in the range from 18.8-19.3 GHz, receive on uplink frequencies from 28.6-29.1 GHz, and perform certain TT&C functions at the 17.85 MHz frequency.

(p. 1/23/98)

Power:

The maximum P.F. output power at the transmitter terminals will be 5 W.

Type of Emission:

The emission designators will be 10M0G1D and 50M0G1D with a maximum speed of 2.048 Mbps.

Overall Height of Antenna Structure:

Not applicable.

ORBITAL hereby certifies that no party to this application is subject to a denial of federal benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. • 853a. ORBITAL also waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise.

For the foregoing reasons, ORBITAL respectfully requests special temporary authority to operate its experimental Ka-band satellite payload on a low-Earth orbiting satellite for testing over a period of four (4) weeks.

Respectfully submitted,

Orbital Sciences Corporation

By:

Leonard Atkinson
Communications Group Director

an orig sign.

HALPRIN, TEMPLE, GOODMAN & SUGRUE

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WASHINGTON, D.C. 20005
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THOMAS J. SUGRUE
JOEL BERNSTEIN
J. RANDALL COOK

January 30, 1998

Via Hand Delivery

Mr. Carl Huie
Experimental Licensing Branch
Office of Engineering and Technology
Federal Communications Commission
Room 230
2000 M Street, N.W.
Washington, D.C. 20554

Re: Experimental STA for Orbital Sciences Corporation

Dear Mr. Huie:

The recent request for experimental temporary authority ("STA") filed by Orbital Sciences Corporation ("ORBITAL") contained a typographic mistake. The TT&C frequency was erroneously listed as 17.85 MHz. The correct frequency is 17.85 GHz.

Please call me if you have any questions concerning this experimental STA application. Thank you in advance for your prompt attention to this matter, particularly because of the imminence of the launch.

Sincerely,


Stephen L. Goodman

HALPRIN, TEMPLE, GOODMAN & SUGRUE

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January 26, 1998

Via Hand Delivery

Mr. Carl Huie
Experimental Licensing Branch
Office of Engineering and Technology
Federal Communications Commission
Room 230
2000 M Street, N.W.
Washington, D.C. 20554

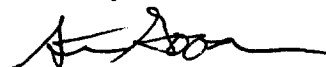
Re: Experimental STA for Orbital Sciences Corporation

Carl
Dear Mr. Huie:

Enclosed please find a copy of a request for experimental special temporary authority ("STA") for Orbital Sciences Corporation ("ORBITAL"). The STA will allow ORBITAL to operate an experimental Ka-band satellite payload for testing over a period of four weeks, commencing with the anticipated launch on or about February 4, 1998. ORBITAL will also submit a regular experimental application to address the period after the initial testing. As explained in the application, the experimental satellite program is intended to provide Teledesic with critical information for the development of its NGSO satellite system. In addition, for your convenience I am also including copies of the related Teledesic experimental applications. The original of all of the applications and fees are being submitted concurrently in Pittsburgh, but I did not want your review to be delayed while the forms made their way down from Pennsylvania.

Please call me if you have any questions concerning these experimental STA applications. Thank you in advance for your prompt attention to this matter, particularly because of the imminence of the launch.

Sincerely,



Stephen L. Goodman

Enclosures

From: Edward Davison <EDAVISON@ntia.doc.gov>
To: J4.J4 (FWRIGHT)
Date: 2/17/98 10:42
Subject: teledesic sta

frank as discussed on the phone (below and attached the same memo)....
if u have questions, please feel free to contact me..
txs...eddie

February 16, 1998

MEMORANDUM

TO: Frank Wright
Office of Engineering and Technology
Federal Communications Commission

FROM: Edward M. Davison
Satellite Program Office

SUBJECT: STA for Orbital Science Corporation (30/20 GHz)

On 5 February 1998, NTIA was informed by the FCC of the Orbital Science Corporation (OSC) request for special temporary authority (STA) to operate an experimental satellite payload in the 28.6-29.1/17.85 and 18.8-19.3 GHz bands (Teledesic package). The launch was scheduled for the first week in February. Footnote US334 states:

In the band 17.8-20.2 GHz, Government space stations and associated earth stations in the fixed-satellite (space-to-Earth) service may be authorized on a primary basis. For a Government geostationary satellite network to operate on a primary basis, the space station shall be located outside the arc measured from East to West, 70 W to 120 W. Coordination between Government fixed-satellite systems and non-Government systems operating in accordance with the United States Table of Frequency Allocations is required.

NTIA is concerned that we were not informed of the OSC request until days before the launch. Appropriate coordination cannot be accomplished in this timeframe. For an experimental license or STA, a period of at least 60 days will normally be required to accomplish proper coordination in this frequency band. We request that the FCC inform non-Government applicants of the importance of submitting license or STA requests or initiating the coordination process with NTIA through the FCC, in a timely manner.

Concerning the proposed STA for Orbital Science Corporation operations in the frequency range 17.8-19.3 GHz, we request the following conditions be included in the STA:

- the operations shall be on an unprotected, non-interference basis;
- a contact point, available 24 hours a day, should be included on the STA

and provided to NTIA in order to resolve any interference problems on a real time basis;

- the earth station locations shall be limited to the state of Washington;
- the satellite shall only transmit towards an earth station when the arrival angle at that earth station measured from the horizon is greater than 40° above the horizon and the satellite transmitter shall be turned off when this condition is not met (e.g., no beacon or unmodulated transmissions).

We have no comments on the proposed operations in the 28.6-29.1 GHz band.

Additionally, NTIA has only been provided with the STA application and not the application for the experimental license. NTIA requests that the application for the experimental license be provided posthaste. Assuming the technical parameters for the experimental license are identical as those for the STA, NTIA anticipates that we will request that the above conditions be placed on that license.

cc: Steve Sharkey, International Bureau, FCC

CC: J3.J3 (SSHARKEY), FCCMAIL.SMTPNLM("jose@teledesic.co...

725-602-6388

ORBCOMM shall only transmit to earth stations in the state of WASH.

Poster: Thomas Lee Dawson
703-397 1037