FCC 405 **FEDERAL COMMUNICATIONS COMMISSION**
Washington, D.C. 20554

Approved by OMB 3060-0093 Expires 03/31/94

Est. Avg. Burden Hours Per Response: 2.25 Hrs.

FCC USE ONLY

APPLICATION FOR RENEWAL OF RADIO STATION LICENSE IN SPECIFIED SERVICES

(Specified Services - FCC Rules Parts 5, 21, 22, 23 and 25)

Read Instructions and Notice on Back Before Completing

File Number	Call Sign
3783-EX-R-94	
Service	**Class of Station**

1. Name of Applicant (must be identical with that shown on current authorization)
COMSAT Corporation

Call Sign or Other FCC Identifier (if applicable)
KA2XHN

2. Mailing Street Address or P.O. Box, City, State and ZIP Code of Applicant
6560 Rock Spring Drive, Bethesda, Maryland 20817

3. Identify Rulepart under which this filing is made
Part 5

4. Fee Data. Refer to 47 CFR Section 1.1105 or to appropriate Fee Filing Guide for information.

(a) Fee Type Code	(b) Fee Multiple, if required	(c) Fee Due for Fee Type Code in 4(a)	**FCC Use Only**
EAE		$ 45.00	

5. Application is for renewal of license in exact conformity with the existing license as specified below:

(a) File Number	(b) Date Issued	(c) Call Sign	(d) Location
4081-EX-ML-94	March 18, 1994	KA2XHN	See condition (1) of current license

(e) Nature of Service	(f) Class of Station	(g) Expiration Date
Experimental	TT TX & MO	January 1, 1995

6. Note any changes such as discontinuance of use of a frequency, or of a type of emission or of a transmitter which have been made since the last application covering this station was filed:

None

Items 7(a) and (b) apply to Part 21 licensees only.

7(a) Has there been removal of equipment or alteration of facilities so as to render the station not operational?
If "YES," when: _____ ☐ YES ☒ NO

(b) If this is a Multipoint Distribution Service (MDS) station, is there an ownership interest in, control by, affiliation with, or leasing arrangement with a cable television company? N/A ☐ YES ☐ NO

8. Applicant represents that there has been no change in applicant's organization and that there has been no transfer of control or changes in the applicant's relation to the station, or financial responsibility; that applicant's most recent application or report embodying this information, as identified below, is to be considered as a part of this application, and the truth of the statements therein contained is hereby reaffirmed. Note here any further exceptions, not already covered in question 6 or 7.

File No. **Date**

None

9. Would a Commission grant of this application come within 47 CFR 1.1307, such that it may have a significant environmental impact? ☐ YES ☒ NO
If "YES," attach as Exhibit No. _____ an Environmental Assessment required by 47 CFR 1.1311.
If "NO," explain briefly why not.

10. Certification

a. Applicant 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, and requests a station license in accordance with this application. Applicant acknowledges that all attached exhibits are a material part hereof.
b. The undersigned, individually and for the applicant, hereby certifies that the statements made in this application are true, complete and correct to the best of the signer's knowledge and belief, and are made in good faith.

Date	Name of Applicant (must correspond with Item 1)	Title of Applicant (if any)
10-26-94	COMSAT Corporation	Vice President and General Manager, COMSAT World Systems

Signature: Rebecca Bowden

Designate Appropriate Classification
☐ INDIV. APPL. ☐ MEM. OF PART. ☐ OFFICER & MEM. OF THE APPLICANT'S ASSOC. ☒ AUTH. REPR. OF CORP. ☐ OFFICIAL OF GOVT. ENTITY

Willful false statements made on this form are punishable by fine and/or imprisonment (U.S. Code, Title 18, Section 1001), and/or revocation of any station license or construction permit (U.S. Code, Title 47, Section 312(a)(1)), and/or forfeiture (U.S. Code, Title 47, Section 503).

REPORT ON TESTING OF WIDEBAND MOBILE SERVICES UNDER PART V EXPERIMENTAL AUTHORITY

Pursuant to its current experimental authorization, CWS is in the process of conducting three major wideband mobile (WBM) tests involving the transmission of voice and data signals at C- and Ku-band frequencies via INTELSAT satellites in the Atlantic Ocean region to and from seagoing vessels. The purpose of these tests is to determine the technical and commercial feasibility of providing various WBM services via INTELSAT.[1] The services being provided are generally of a type which could not be offered via INMARSAT, due to bandwidth limitations inherent in L-band satellite networks. Experience to date with these experiments has been positive, both in terms of satisfying mobile communications requirements and with regard to the technical feasibility of using C- and Ku-band frequencies for mobile applications.

One of the experiments now underway is called Project Athena II. For this test, the Navy is using various INTELSAT satellites and beam configurations to provide 1.544 Mbps full-duplex, digital communications services to the USS George Washington, an aircraft carrier assigned to the Atlantic Ocean fleet. Shipboard earth stations for this test are being provided by Maritime Telecommunications Network, a partnership of Crescomm and SeaTel.

The high bandwidth communications being provided to the George Washington have allowed the provision of a variety of services. Specific applications include:

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[1] It should be noted that the overall purpose of all of the wideband mobile experiments of CWS and others is to help provide a basis upon which the Commission can proceed with the NPRM requested by Crescomm in 1991 (RM-7912). CWS has supported that Petition and believes that the Commission should proceed expeditiously with issuance of the NPRM.

- full-time availability of a ship-to-shore and shore-to-ship T-1 carrier

- an average of 240 video images transmitted per week

- an average of 10-12 digitized x-rays sent ashore for consultation per week. (In at least one case, transmission of an x-ray and the associated consultation with a doctor at the National Institutes of Health avoided the need for medical evacuation of an injured sailor.)

- support of eight shipboard pay phones enabling sailors to call home. Sailors can purchase phone debit cards aboard ship and be billed at the rate of fifty cents per minute. For the 16 hours per day the phones are made available, they are in use 98% of the time.

- availability of 24 "official-use" phones for secure and other military communications

- support for intelligence data broadcasting systems

- transmission of public affairs photographs and stories

While perhaps some of these applications could have been supported in the past, WBM service allows them all to be offered simultaneously. Further, a sophisticated multiplexing network aboard the George Washington allows capacity to be transferred from one application to another on a real-time, as needed basis.

In addition to the George Washington test, the U.S. Navy is currently testing the use of INTELSAT Ku-band spot beams for the provision of WBM service. Working with GTE Government Systems, the Navy is providing full-duplex

wideband communications via an INTELSAT Ku-band spot beam to and from the U.S. Navy command ship Mt. Whitney. With the aid of sophisticated software, the INTELSAT spot beams have been "steered" to follow the path of the Mt. Whitney across the Atlantic, providing continuous full-time, full-duplex 1.544 Mbps communications channels. Most recently, the Mt. Whitney has been deployed offshore of Haiti, where its WBM communications capabilities have allowed for rapid planning of U.S. military activities in the region.

In another test, CWS is providing WBM service to LDI/Sea Tech ("Sea Tech"), an Ohio-based company seeking to enter the maritime communications market. Sea Tech is using INTELSAT C-band capacity and a Scientific Atlanta antenna to provide 64 kbps circuits to cruise ships; up to eight voice and data channels are being derived from each circuit. These channels are being used for passenger phone calls and ships' administrative business. This service has the potential to allow ship-owners, for the first time, to tally receipts on a daily basis, sell tickets on board ship, and conduct other functions not feasible without wideband capacity. Moreover, because full-time INTELSAT capacity can be more economical for large users than per-minute INMARSAT capacity, WBM service has the potential to lower the cost of passenger phone calls.

Given the initial results and customer demand, CWS intends to renew its experimental license and broaden its test bed not only to bring existing experiments to fruition, but also to begin a wider variety of maritime applications. For example, future testing will contribute invaluable information on the use of FSS frequencies in the maritime environment, examine the feasibility of steerable spot beams and further assess unique military applications of the service. Specifically, during the period 1995 - 1997 the Navy will implement the follow-on program to Project Athena

II and the testing of WBM communications to ships other than aircraft carriers, utilizing various shipboard earth station sizes and designs. On the commercial side, new service providers are expected to test WBM service at various transmission rates using shipboard earth stations from several different manufacturers.

Accordingly, renewal of experimental authority will encourage the testing and development of these promising new services and thereby promote the public interest.