

United States of America  
FEDERAL COMMUNICATIONS COMMISSION  
EXPERIMENTAL  
SPECIAL TEMPORARY AUTHORIZATION

EXPERIMENTAL  
(Nature of Service)

K S 2 X D A  
(Call Sign)

XD FX  
(Class of station)

S-2779-EX-97  
(File number)

NAME Final Analysis, Inc.

Logan, UT - NL 41-38-15; WL 111-48-49  
(Location of station)

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

| Frequency<br>(MHz) | Authorized<br>Power (watts) | Emission<br>Designator | Class of<br>Station |
|--------------------|-----------------------------|------------------------|---------------------|
| 148.7              | 200 (ERP)                   | 100KF1D                | FX                  |

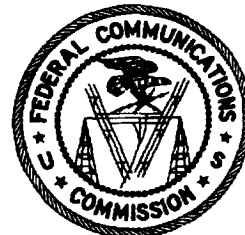
Purpose of Operation: Test uplink communications for command, telemetry and control between the fixed ground station and the FAISAT-2v satellite.

Special Conditions: Licensee must coordinate with Orbcomm prior to operation to avoid interference.

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 January 21, 1997 and will expire 3:00 A.M. EST. July 21, 1997



**KELLEY DRYE & WARREN LLP**

A PARTNERSHIP INCLUDING PROFESSIONAL ASSOCIATIONS

1200 19TH STREET, N.W.

SUITE 500

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AFFILIATED OFFICES

NEW DELHI, INDIA

TOKYO, JAPAN

January 17, 1997

**VIA COURIER SERVICE**

**FEDERAL COMMUNICATIONS COMMISSION**

Experimental Radio Division

P.O. Box 358320

Pittsburgh, PA 15251-5320

**Re: Final Analysis, Inc., Application for Special Temporary Authority for Modification to Fixed Ground Station in Logan, Utah -- EXPEDITED ACTION REQUESTED**

Dear Sir or Madam:

Final Analysis, Inc., by its attorneys, hereby submits its application for special temporary authority ("STA") pursuant to Section 5.56 of the Commission's rules, 47 C.F.R. § 5.56. Final Analysis requires expedited grant of an STA to test uplink communications on the 148.7 MHz frequency for command, telemetry and control between its fixed ground station at Logan, Utah, for which Final Analysis holds an experimental authorization,<sup>1</sup> and its satellite FAISAT-2v, for which Final Analysis already has been granted experimental authorization for non-voice, non-geostationary orbit mobile satellite service ("NVNG MSS").<sup>2</sup> Final Analysis also is simultaneously filing herewith on FCC Form 442 an application to modify its existing experimental authorization for the Logan, Utah ground station to add the 148.7 MHz uplink frequency to the frequencies in the 455-456 and 459-460 MHz bands already contained in the current Logan authorization. A copy of the FCC Form 442 for modification of the Logan, Utah Station is attached hereto as Attachment B.

<sup>1</sup> See Call Sign KS2XDA, File No. 4684-EX-PL-95.

<sup>2</sup> Final Analysis received an experimental authorization for FAISAT-2v (Call Sign KS2XCY) on August 11, 1995.

FEDERAL COMMUNICATIONS COMMISSION

January 17, 1997

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Use of the 148.7 MHz frequency, in particular, is critical to testing of uplink communications between the Logan, Utah ground station and FAISAT-2v because the 148.7 MHz frequency is the default frequency for communications between the ground station and the satellite and control of the satellite.<sup>3</sup> Furthermore, testing must be completed prior to shipment of the satellite to Russia. Final Analysis plans to ship FAISAT-2v to Russia by the end of this month for launch as a secondary payload aboard a Cosmos rocket in the first quarter of 1997. Accordingly, Final Analysis requests that it be granted on an expedited basis a six-month STA beginning on January 21, 1997, and ending on July 21, 1997, to allow for testing of uplink communications and command, telemetry and control between the Logan, Utah ground station and its experimental satellite on the 148.7 MHz frequency.

Final Analysis also submits the following information as required under Section 5.56 of the Rules in support of its expedited STA request:

**Name and Address:** Final Analysis, Inc., 9701-E Philadelphia Way, Lanham, MD 20706.

**Need for Special Action:** See above.

**Type of Operation:** See above. A detailed discussion of Final Analysis's experimental operation is contained in Exhibit 1 of Attachment B.

**Purpose of Operation:** See above. A detailed discussion of the purpose of Final Analysis's experimental operation on the 148.7 MHz frequency at Logan, Utah, which is the subject of this STA, is contained in Exhibit 1 of Attachment B.

**Time and Date of Operation:** See above.

**Class of Station:** Fixed Experimental Ground Station

**Location of Proposed Operation:** Utah State University, 1795 N. Research Parkway (north latitude: 41-38-15; west longitude: 111-48-49)

**Equipment:** Experimental Ground Station Transmitter (1 unit).

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<sup>3</sup> Under a previous experimental satellite program, Final Analysis was authorized to use the 148.7 MHz frequency at the Logan, Utah ground station. See Call Sign KE2XGU, File No. 4097-EX-PL-94.

FEDERAL COMMUNICATIONS COMMISSION

January 17, 1997

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**Frequencies:** 148.7 MHz.

**Effective Radiated Power:** 25 dBw (mean). See Item 4 of Attachment B.

**Emission Type:** 100KF1D. See Item 4 of Attachment B.

**Overall Height Above Ground of Antenna Structure (If Greater than Six Meters):** Antenna will not extend more than 6 meters.

The original signature of an officer of Final Analysis, as required by Section 5.54 of the Rules, 47 C.F.R. § 5.54, and the original executed anti-drug abuse certification pursuant to Sections 1.2001-1.2003 of the Rules, 47 C.F.R. §§ 1.2001-1.2003, are attached hereto as Attachment A.

The \$45 fee (Code EAE) as listed in the Office of Engineering and Technology Fee Filing Guide is enclosed in the form of a check payable to the Federal Communications Commission. Also enclosed is a completed FCC Form 159 (FCC Remittance Advice Form). A duplicate of this filing and a self addressed, postage-paid envelope also are included in this filing. Please date-stamp the duplicate upon receipt and return it in the envelope provided. Please contact the undersigned directly if you have any questions.

Respectfully submitted,



Peter A. Batacan

Counsel to Final Analysis, Inc.

encls:       FCC Form 159  
              Check for \$45  
              Original signature and certification page  
              Final Analysis application for modification to Logan ground station

cc:           Mr. Douglas Young  
              Office of Engineering and Technology

# **ATTACHMENT A**

**ORIGINAL SIGNATURE AND CERTIFICATION OF APPLICANT**

On behalf of Final Analysis, Inc., and in accordance with Sections 5.54-5.56 of the Commission's rules, 47 C.F.R. §§ 5.54-5.56, I hereby certify that the statements in the foregoing application for special temporary authority are true, complete and correct to the best of my knowledge. I also hereby certify, in accordance with Sections 1.2001-1.2003 of the Commission's rules, 47 C.F.R. §§ 1.2001-1.2003, that no party to this application is subject to a denial of federal benefits, including FCC benefits, pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. § 862(a).

**FINAL ANALYSIS, INC.**

By:



Nader Modanlo  
President

Dated:

1/17/96

**ATTACHMENT B**

**KELLEY DRYE & WARREN LLP**

A PARTNERSHIP INCLUDING PROFESSIONAL ASSOCIATIONS

1200 19TH STREET, N.W.

SUITE 500

WASHINGTON, D. C. 20036

(202) 955-9600

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TOKYO, JAPAN

January 17, 1997

**VIA COURIER SERVICE**

FEDERAL COMMUNICATIONS COMMISSION  
Experimental Radio Division  
P.O. Box 358320  
Pittsburgh, PA 15251-5320

**Re: Final Analysis, Inc., Application for Modification of  
Experimental Authorization for Fixed Ground Station at  
Logan, Utah (Call Sign KS2XDA; File No. 4684-EX-PL-95)**

Dear Sir or Madam:

Final Analysis, Inc., by its attorneys, hereby submits its application on FCC Form 442 to modify its above-captioned experimental authorization for its Logan, Utah ground station to add the 148.7 MHz uplink frequency to the frequencies in the 455-456 and 459-460 MHz band already contained in the current Logan authorization. The modification to add the 148.7 MHz uplink frequency is necessary for command, telemetry and control functions between Final Analysis's Logan ground station and its satellite FAISAT-2v, for which Final Analysis already has been granted experimental authorization for non-voice, non-geostationary orbit mobile satellite service ("NVNG MSS").<sup>1</sup> A central purpose of Final Analysis's overall experimental satellite program, as set forth in more detail in Exhibit 1 of the attached Form 442, is to determine the ability of NVNG MSS operations to coexist in certain frequency bands with existing users of those bands.

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<sup>1</sup> Final Analysis received an experimental authorization for FAISAT-2v (Call Sign KS2XCY) on August 11, 1995.



FEDERAL COMMUNICATIONS COMMISSION

January 17, 1997

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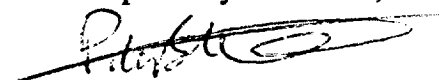
In addition to the proposed operations between the Logan ground station as modified in the instant application and FAISAT-2v, Final Analysis's plans for the experimental satellite program also include the following components:

A proposed ground station to be located at Final Analysis's Lanham, Maryland corporate headquarters. An application for experimental authorization (File No. 5582-EX-PL-96) and request for special temporary authority filed on January 8, 1997 are currently pending with respect to the Lanham, Maryland ground station.<sup>2</sup>

350 remote mobile terminals authorized to Final Analysis on an experimental basis (Call Sign KS2XCZ; File No. 4683-EX-PL-95).

The \$45 fee (Code EAE) as listed in the Office of Engineering and Technology Fee Filing Guide is enclosed in the form of a check payable to the Federal Communications Commission. A duplicate of this filing and a self addressed, postage-paid envelope also are included in this filing. Please date-stamp the duplicate upon receipt and return it in the envelope provided. Please contact the undersigned directly if you have any questions.

Respectfully submitted,



Peter A. Batacan  
Counsel to Final Analysis, Inc.

encls: FCC Form 442  
Check for \$45

cc: Mr. Douglas Young  
Office of Engineering and Technology

---

<sup>2</sup> Final Analysis also plans to establish a ground station in Norway.

Approved by OMB  
3060-0065  
Expires 9/30/98

FEDERAL COMMUNICATIONS COMMISSION

FCC FORM 442

FOR  
FCC  
USE  
ONLY

APPLICATION FOR NEW OR MODIFIED RADIO STATION AUTHORIZATION UNDER PART 5  
OF FCC RULES - EXPERIMENTAL RADIO SERVICE (OTHER THAN BROADCAST)

**SECTION I**

APPLICANT NAME (Last, first, middle initial)

**Final Analysis, Inc.**

MAILING ADDRESS (Line 1) (Maximum 95 characters - refer to Instruction (2) on reverse of form)

**9701-E Philadelphia Way**

MAILING ADDRESS (Line 2) (if required) (Maximum 95 characters)

CITY

**Lanham**

STATE OR COUNTRY (if foreign address)

**MD**

ZIP CODE

**20706**

CALL SIGN OR FILE NUMBER

Enter in Column (A) the correct Fee Type Code for the service you are applying for. Fee Type Codes may be found in FCC Filing Guides. Enter in Column (B) the Fee Multiple, if applicable. Enter in Column (C) the result obtained from multiplying the value of the Fee Type Code in Column (A) by the number entered in Column (B), if any.

| (A)           | (B)                           | (C)  | FOR FCC USE ONLY |
|---------------|-------------------------------|--|------------------|
| FEE TYPE CODE | FEE MULTIPLE<br>(if required) | FEE DUE FOR FEE TYPE<br>CODE IN COLUMN (A) |                  |
| (1) E A E     |                               | \$ 45.00                                   |                  |

**SECTION II** - To be used only when you are requesting concurrent actions which result in a requirement to list more than one Fee Type Code.

| (A)           | (B)                           | (C)  | FOR FCC USE ONLY |
|---------------|-------------------------------|--|------------------|
| FEE TYPE CODE | FEE MULTIPLE<br>(if required) | FEE DUE FOR FEE TYPE<br>CODE IN COLUMN (A) |                  |
| (2)           |                               | \$   |                  |
| (3)           |                               | \$   |                  |
| (4)           |                               | \$   |                  |
| (5)           |                               | \$   |                  |

ADD ALL AMOUNTS SHOWN IN COLUMN C, LINES (1) THROUGH (5), AND ENTER THE TOTAL HERE. THIS AMOUNT SHOULD EQUAL YOUR ENCLOSED REMITTANCE.

|   |                  |
|---|------------------|
| TOTAL AMOUNT REMITTED WITH THIS APPLICATION OR FILING | FOR FCC USE ONLY |
| \$ 45.00  |                  |

APPLICATION FOR NEW OR MODIFIED RADIO STATION AUTHORIZATION UNDER PART 5  
OF FCC RULES - EXPERIMENTAL RADIO SERVICE (OTHER THAN BROADCAST)

|  |   |
|--|---|
| 1. Applicant's Name and Post Office address<br>(Street address, city, state, and ZIP Code. See Instruction No. 4)<br><br><p style="text-align: center;"><b>Final Analysis, Inc.</b><br/><b>9701-E Philadelphia Way</b><br/><b>Lanham, MD 20706</b></p> | <p style="text-align: center;"><b>DO NOT WRITE IN THIS BLOCK</b></p> File No. _____ |
|--|---|

|   |  |
|---|--|
| 2(a). Application for (check only one box)<br><input type="checkbox"/> New station <input checked="" type="checkbox"/> Modification of existing authorization | 2(b). For Modification Indicate below:<br>File No: <b>4684-EX-PL-95</b> Call Sign: <b>KS2XDA</b> |
|---|--|

3. Application for Modification: Check the box beside all particulars to be modified. Check either addition or replacement to indicate whether the change is an addition or a replacement of parameters in the current authorization.

- FREQUENCY** -       **EMISSION** -       **POWER** -       **LOCATION** -  
 addition or  replacement?       addition or  replacement?       addition or  replacement?       addition or  replacement?
- OTHER PARTICULARS** - addition or replacement? (Describe below or in attached EXHIBIT No. \_\_\_\_\_ )

**Modification to add 148.7 MHz Frequency to Existing Authorized Frequencies**

4. Particulars of Operation (see instruction below)

| Frequency (state whether kHz or MHz) | POWER |        |      | EMISSION | MODULATING SIGNAL | NECESSARY BANDWIDTH (kHz) |
|--------------------------------------|-------|--------|------|----------|-------------------|---------------------------|
|                                      | (A)   | (B)    | (C)  |          |                   |                           |
| 148.7 MHz                            | 20 W  | 25 dBW | MEAN | 100KFD   | 38.4 kbps         | 100 kHz                   |
|                                      |       |        |      |          |                   |                           |
|                                      |       |        |      |          |                   |                           |
|                                      |       |        |      |          |                   |                           |
|                                      |       |        |      |          |                   |                           |
|                                      |       |        |      |          |                   |                           |
|                                      |       |        |      |          |                   |                           |
|                                      |       |        |      |          |                   |                           |
|                                      |       |        |      |          |                   |                           |

- (A) List each frequency or frequency band separately. (If more space is required, attach as EXHIBIT No. \_\_\_\_\_ )
- (B) Insert maximum R.F. output power at the transmitter terminals. Specify units.
- (C) Insert maximum effective radiated power from the antenna (if pulsed emission, specify peak power). Specify units.
- (D) Insert "MEAN" or "PEAK" (See definitions in Part 5).
- (E) List each type of emission separately for each frequency. (See Section 2.201 of FCC Rules.)
- (F) Insert as appropriate for the type of modulation:
- (1) the maximum speed of keying in bauds;
  - (2) maximum audio modulating frequency;
  - (3) frequency deviation of carrier;
  - (4) pulse duration and repetition rate.
- For complex emissions, describe in detail in the space provided below.

5(a). Proposed location of transmitter and transmitting antenna (check only one box to indicate type of operation):

FIXED/BASE       MOBILE       BASE AND MOBILE

5(b). If permanently located at a FIXED location, give below:

|  |                        |                              |
|--|------------------------|------------------------------|
| State<br><b>UT</b>   | County<br><b>Cache</b> | City or Town<br><b>Logan</b> |
| Number and street (or other indication of location)<br><b>Utah State University<br/>1795 N. Research Parkway</b> |                        |                              |

5(c). If mobile, describe the exact area of operation

5(b)(1). Enter geographical coordinates exact to the nearest second (see instruction 10)

|   |  |
|---|--|
| North Latitude (DD-MM-SS)<br>41      38      15 | West Longitude (DD-MM-SS)<br>111      48      49 |
|---|--|

5(c)(1) Enter geographical coordinates of the approximate center of mobile operation (see instruction 10.)

|                                   |                                   |
|-----------------------------------|-----------------------------------|
| North Latitude<br>0      '      " | West Longitude<br>0      '      " |
|-----------------------------------|-----------------------------------|

5(d). Datum (see instruction 10): .....  NAD 27       NAD 83

6. Is a directional antenna (other than radar) used?  YES       NO

If "YES", give the following information:

(a) Width of beam in degrees at the half-power point 52 degrees

(b) Orientation in horizontal plane uniform      (c) Orientation in vertical plane uniform

7. Is this authorization to be used for fulfilling the requirement of a government contract with an agency of the United States Government?  YES       NO

If "YES", attach as EXHIBIT No. \_\_\_\_\_ a narrative statement describing the government project, agency and contact number.

8. Is this authorization to be used for the exclusive purpose of developing radio equipment for export to be employed by stations under the jurisdiction of a foreign government?  YES       NO

If "YES", attach as EXHIBIT No. \_\_\_\_\_ the following information: Provide the contract number and the name of the foreign government concerned.

9. Is this authorization to be used for providing communications essential to a research project? (The radio communication is not the objective of the research project).  YES       NO

If "YES", attach as EXHIBIT No. 1 \_\_\_\_\_ a narrative statement providing the following information:

(a) A description of the nature of the research project being conducted.

(b) A showing that the communications facilities requested are necessary for the research project involved. A showing that existing communications facilities are inadequate.

10. If all the answers to Items 7, 8, and 9, are "NO", attach as EXHIBIT No. \_\_\_\_\_ a narrative statement describing in detail the following:

(a) The complete program of research and experimentation proposed including description of equipment and theory of operation.

(b) The specific objectives sought to be accomplished.

(c) How the program of experimentation has a reasonable promise of contribution to the development, extension, expansion, or utilization of the radio art, or is along line not already investigated.

11(a). Give an estimate of the length of time that will be required to complete the program of experimentation proposed in this application: 2 years

(b) If less than 2 years, give the length of time in months that the authorization requested in this application will be required: \_\_\_\_\_

12. Would a Commission grant of this application come within Section 1.1307 of the FCC Rules, such that it may have a significant environmental impact (see instruction 11)?  YES       NO

If "YES", attach as EXHIBIT No. \_\_\_\_\_ an Environmental Assessment as required by Section 1.1311.

13. List below transmitting equipment to be installed (if experimental, so state):

| MANUFACTURER | MODEL NUMBER                                   | NO. OF UNITS |
|--------------|--|--------------|
|              | <b>Experimental Ground Station Transmitter</b> | <b>1</b>     |

14. Is the equipment listed in Item 13 capable of station identification pursuant to Section 5.152?  YES  NO

15. Will the antenna extend more than 6 meters above the ground, or if mounted on an existing building, will it extend more than 6 meters above the building, or will the proposed antenna be mounted on an existing structure other than a building?  YES  NO

If "YES", give the following (see instruction 9):

- (a) Overall height above ground to tip of antenna is \_\_\_\_\_ meters.
- (b) Elevation of ground at antenna site above mean sea level is \_\_\_\_\_ meters.
- (c) Distance to nearest aircraft landing area is \_\_\_\_\_ kilometers.
- (d) List any natural formations of existing man-made structures (hills, trees, water tanks, towers, etc.) which, in the opinion of the applicant, would tend to shield the antenna from aircraft and thereby minimize the aeronautical hazard of the antenna.

(e) Submit as EXHIBIT No. \_\_\_\_\_ a vertical profile sketch of total structure including supporting building, if any, giving heights in meters above ground for all significant features. Clearly indicate existing portion, noting particulars of aviation obstruction lighting already available.

16. Applicant is: (Check only one box)

- INDIVIDUAL  ASSOCIATION  PARTNERSHIP  CORPORATION
- OTHER (describe in space provided below)

17. Is applicant a foreign government or a representative of a foreign government?  YES  NO

18. Has applicant or any party to this application had any FCC station license or permit revoked or had any application for permit, license or renewal denied by this Commission?  YES  NO

If "YES", attach as EXHIBIT No. \_\_\_\_\_ a statement giving call sign of license or permit revoked and relate circumstances.

19. Will applicant be owner and operator of the station?  YES  NO

20. Give name, title, and telephone number (include area code), and Internet e-mail address (if applicable) of person who can best handle inquiries pertaining to this application.

**Peter A. Batacan, Legal Counsel (202) 955-9774 955-9772 (fax)**

21. APPLICANT ANTI-DRUG ABUSE CERTIFICATION:  
 By checking "YES", the individual applicant certifies that he or she is eligible for this license. This requires that he or she is not subject to a denial of federal benefits, including FCC benefits, as a result of a drug offense conviction pursuant to Section 5901 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862. A non-individual applicant, e.g., corporation, partnership or other unincorporated association, certifies that no party to the application is subject to a denial of federal benefits, pursuant to that section. For definition of a "party" for these purposes, see 47 CFR 1.2002(b).  YES  NO

22. List below all exhibits in numerical sequence and the item number of form requiring the exhibit identified.

| EXHIBIT NUMBER | ITEM NO. OF FORM | EXHIBIT NUMBER | ITEM NO. OF FORM | EXHIBIT NUMBER | ITEM NO. OF FORM |
|----------------|------------------|----------------|------------------|----------------|------------------|
| 1              | 9-Form 442       |                |                  |                |                  |
|                |                  |                |                  |                |                  |
|                |                  |                |                  |                |                  |
|                |                  |                |                  |                |                  |
|                |                  |                |                  |                |                  |

23. CERTIFICATION:

Attention: Read this certification carefully before signing this application.

THE APPLICANT CERTIFIES THAT:

- (a) Copies of FCC Rule Parts 2 and 5 are on hand; and
- (b) Adequate financial appropriations have been made to carry on the program of experimentation which will be conducted by qualified personnel; and
- (c) All operations will be on an experimental basis in accordance with Part 5 and other applicable rules, and will be conducted in such a manner and at such a time as to preclude harmful interference to any authorized station; and
- (d) Grant of the authorization requested herein will not be construed as a finding on the part of the Commission:
  - (1) that the frequencies and other technical parameters specified in the authorization are the best suited for the proposed program of experimentation, and
  - (2) that the applicant will be authorized to operate on any basis other than experimental, and
  - (3) that the Commission is obligated by the results of the experimental program to make provision in its rules including its table of frequency allocations for applicant's type of operation on a regularly licensed basis.

APPLICANT CERTIFIES FURTHER THAT:

- (e) All the statements in the application and attached exhibits are true, complete and correct to the best of the applicant's knowledge; and
- (f) The applicant is willing to finance and conduct the experimental program with full knowledge and understanding of the above limitations; and
- (g) The applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the USA.

Signed and dated this Sixteenth day of January, 19 97

Name of Applicant Final Analysis, Inc.

*(must correspond with name given on page 1)*

By Nader Modanlo  
*(print)*   
*(signature)*

Title President

Check appropriate classification:

- Individual applicant
- Member of applicant partnership
- Authorized employee
- Office of applicant corporation or association

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).

NOTIFICATION TO INDIVIDUALS UNDER PRIVACY ACT OF 1974 AND THE PAPERWORK REDUCTION ACT OF 1980

Information requested through this form is authorized by the Communications Act of 1934, as amended, and specified by Section 908 therein. The information will be used by Federal Communications Commission staff to determine eligibility for issuing authorizations in the use of the frequency spectrum and to effect the provisions of regulatory responsibilities rendered by the Commission by the Act. Information requested by this form will be available to the public unless otherwise requested pursuant to 47 CFR 0.459 of the FCC Rules and Regulations. Your response is required to obtain this authorization.

Public reporting burden for this collection of information is estimated to average four (4) hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to the Federal Communications Commission, Records Management Branch, Paperwork Reduction Project (3050-0065), Washington, DC 20554. DO NOT send completed applications to this address. Individuals are not required to respond to this collection unless it displays a currently valid OMB control number.

THE FOREGOING NOTICE IS REQUIRED BY THE PRIVACY ACT OF 1974, P.L. 93-579, DECEMBER 31, 1974, 5 U.S.C. 552a(e)(3), AND THE PAPERWORK REDUCTION ACT OF 1980, P.L. 96-511, DECEMBER 11, 1980, 44 U.S.C. 3507.

**EXHIBIT 1**

Final Analysis, Inc.<sup>1</sup> (Final Analysis) hereby submits its application for modification of its experimental authorization for its ground station at Logan, Utah (Call Sign KS2XDA) to add the 148.7 MHz frequency to be used as uplink from the Logan ground station to its satellite, FAISAT-2V (Call Sign KS2XCY). A central purpose of Final Analysis's experimental satellite program is to determine the ability of non-voice non-geostationary mobile satellite service ("NVNG MSS" or "Little LEO") operations to coexist in certain frequency bands with existing users in those bands.<sup>2</sup> To that end, Final Analysis is planning to employ two ground stations in the United States, one in Logan and another at its corporate headquarters in Lanham, Maryland.<sup>3</sup> A third ground station is being planned in Norway. In addition, Final Analysis has an experimental authorization for up to 350

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<sup>1</sup> Final Analysis, Inc. is the parent corporation of Final Analysis Communication Services, Inc., which is an applicant for a commercial license in the non-voice, non-geostationary mobile satellite service ("NVNG MSS").

<sup>2</sup> A detailed description of the experimental program also has been presented in Final Analysis' earlier filings, which are incorporated herein by reference. See Final Analysis, Inc. Application for Experimental Satellite, Call Sign KS2XCY, File No. 4682-EX-PL-95, at Exhibit 1 (received March 7, 1995).

<sup>3</sup> Final Analysis filed its application for a fixed ground station to be located in Lanham, Maryland on November 13, 1996 (File No. 5582-EX-PL-96). Final Analysis subsequently filed a request for special temporary authority on January 8, 1997 to test communications between the proposed Lanham ground station and FAISAT-2v prior to shipment of the satellite to Russia, which is expected to occur by the end of January, 1997, for launch as a secondary payload aboard a Cosmos rocket in the first quarter of 1997.

Remote Mobile Terminals (Call Sign KS2XCX). As the ground stations must maintain communications with the satellite for command, control and telemetry, use of the 148.7 MHz frequency for uplink to FAISAT-2v is critical specifically to control the satellite and in order generally to advance the overall objectives of the experiment.

Current analyses indicate that proposed Little LEO systems require considerably more spectrum than is available to meet the substantial anticipated demand for such services and that an additional 20 MHz of spectrum will be needed to meet this anticipated demand in the year 2002.<sup>4</sup> A primary objective of the experimental use of FAISAT-2v, as originally conceived by Final Analysis, is to demonstrate that NVNG MSS systems will not cause harmful interference to existing primary users in the proposed bands. To this end, a variety of experiments are planned, using remote mobile terminals (RTs) in a variety of circumstances, including urban, suburban, and mountainous conditions and over bodies of water. Final Analysis also has actively participated domestically in proceedings before the Commission and internationally at world radioconferences and ITU working groups in order to identify potential frequency bands for Little LEO services and to study potential spectrum sharing techniques to optimize use of spectrum available for NVNG MSS.

One of the bands to be studied for potential service uplinks includes the frequencies around 455 MHz. During the first phase of the experimental program, a state-of-the-art receiver on-board the satellite will scan this band and record the global activity as a

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<sup>4</sup> See ITU-R Document 8D/136 "Spectrum Demand for Non-GSO MSS Below 1GHz Services."



function of location and time of day.<sup>5</sup> This data will be stored in the memory of the on-board computer and downloaded when the satellite is over one of the ground stations. This information will be used to determine on a statistical basis the number and location of unused channels. Apart from this data collection, which should demonstrate the theoretical possibility of sharing with existing users, an essential component of the experiment is the deployment and use of the RTs, so that actual data transmission can be attempted on the frequencies identified during the scanning process. Thus, actual attempts at communications under the experimental conditions envisioned by Final Analysis will facilitate the collection of real-world data on the feasibility of Little LEO systems on the frequencies identified and under the actual conditions in which Little LEO users would likely be situated.

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<sup>5</sup> Final Analysis has an ongoing partnership with the NASA Center for Space Power to develop and promote space-based science and technology.

**ORIGINAL**

FEDERAL COMMUNICATIONS COMMISSION

**FCC REMITTANCE ADVICE**

Approved by OMB  
3060-0589  
Expires 2/28/97

PAGE NO. 1 OF       

*01498*

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**PAYOR INFORMATION**

(1) FCC ACCOUNT NUMBER 0135335107 Did you have a number prior to this? Enter it.        (2) TOTAL AMOUNT PAID (dollars and cents)  
\$ 45 . 00

(3) PAYOR NAME (If paying by credit card, enter name exactly as it appears on your card)  
Kelley Drye & Warren LLP

(4) STREET ADDRESS LINE NO. 1  
1200 19th Street, N.W., Suite 500

(5) STREET ADDRESS LINE NO. 2  
      

(6) CITY Washington (7) STATE DC (8) ZIP CODE 20036

(9) DAYTIME TELEPHONE NUMBER (Include area code) 202-955-9600 (10) COUNTRY CODE (if not U.S.A.)       

**ITEM #1 INFORMATION**

(11A) NAME OF APPLICANT, LICENSEE, REGULATEE, OR DEBTOR Final Analysis, Inc. FCC USE ONLY       

(12A) FCC CALL SIGN/OTHER ID        (13A) ZIP CODE        (14A) PAYMENT TYPE CODE E A E (15A) QUANTITY        (16A) FEE DUE FOR PAYMENT TYPE CODE IN BLOCK 14 \$45.00

(17A) FCC CODE 1        (18A) FCC CODE 2       

(19A) ADDRESS LINE NO. 1 01-E Philadelphia Way (20A) ADDRESS LINE NO. 2        (21A) CITY/STATE OR COUNTRY CODE Lanham, MD 20706

**ITEM #2 INFORMATION**

(11B) NAME OF APPLICANT, LICENSEE, REGULATEE, OR DEBTOR        FCC USE ONLY       

(12B) FCC CALL SIGN/OTHER ID        (13B) ZIP CODE        (14B) PAYMENT TYPE CODE        (15B) QUANTITY        (16B) FEE DUE FOR PAYMENT TYPE CODE IN BLOCK 14 \$

(17B) FCC CODE 1        (18B) FCC CODE 2       

(19B) ADDRESS LINE NO. 1        (20B) ADDRESS LINE NO. 2        (21B) CITY/STATE OR COUNTRY CODE       

**CREDIT CARD PAYMENT INFORMATION**

(22) MASTERCARD/VISA ACCOUNT NUMBER:  
 Mastercard        EXPIRATION DATE:        
 Visa        Month Year

(23) I hereby authorize the FCC to charge my VISA or Mastercard for the service(s)/authorization(s) herein describe.  AUTHORIZED SIGNATURE        DATE

**From:** Kimberly Baum  
**To:** J4.J4(DYOUNG)  
**Date:** 1/14/97 5:50pm  
**Subject:** Final Analysis, Inc. - 5582-EX-PL-96 -Forwarded -Reply

Hi Doug. I got your voice mail message this afternoon. Basically, I want to clarify what Final Analysis wants this STA for....my understanding is to test the satellite prior to shipping it to Russia. Does that mean that they want to test it at Lanham, MD on the frequencies indicated on 5582-EX-PL-96, which are for the uplink, earth-to-space direction? What about the satellite transmitting--do they already have an experimental license for that?

So far, I have received comments that they must coordinate with Orbcomm which has two satellites in orbit and is licensed to use 148.7 Mhz assignment.

Kim

**cc:** jgarcia

IB ok'd ~~148.7~~ 149.7 MHz for K52XDA STA <sup>also</sup>  
Logan, UT, <sup>also</sup> through telcom w/ K. Baum, 1/21/97

HFW ok'd 148.7 MHz for K52XDA STA  
since it was cleared for KE2XGU already.

DY



# FAX COVER SHEET

*Page 1 of 3 pages*

**DATE:** January 21, 1997

**FROM:** Douglas A. Young 1300 - C1  
FEDERAL COMMUNICATIONS COMMISSION  
Experimental Licensing Branch  
2000 M Street, Suite 230  
Washington, DC 20554

**PHONE:** (202) 418-2440

**FAX:** (202) 418-1918

**TO:** Mr. Peter A. Batacan

NAME

Kelley Drye & Warren, LLP

COMPANY

(202) 955 - 9774

PHONE

(202) 955 - 9792

FAX

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Mr. Batacan:

Here are copies of Final Analysis, Inc.'s STAs for stations KS2XAF and KS2XDA, File Numbers S-2765-EX-97 and S-2779-EX-97, respectively. The original license for station KS2XAF will be mailed to the licensee today and the original license for station KS2XDA will be mailed to the licensee upon receipt of the original application.

Doug Young

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