



## Final Analysis Inc.

7500 Greenway Center • Suite 1240 • Greenbelt, Maryland 20770 • Tel: (301)474-0111 • Fax: (301)474-3228

### AMENDMENT

Final Analysis, Inc. hereby amends its March 6, 1995 applications for experimental authorization as follows:

#### FCC FORM 442 (REMOTE TERMINALS)

Page 2, ¶ 4:

delete first line of entries in (A) through (G), and replace with the following:

(A)	(B)	(C)	(D)	(E)	(F)	(G)
(1) MHz	10W	10 dBW	PEAK	30K0F1D	9600 bps	30 KHz

Page 2, ¶ 4(F)(1):

replace "153.0125 + Mx.0100 0≤M≤446" with "455.0150 + Mx .0025 0≤M≤388

459.0150 + Nx .0025 0≤N≤388"

Page 3, ¶ 13

replace "9,240" with "1,848"

#### FCC FORM 442 (LOGAN EARTH STATION)

Page 2, ¶ 4(F)(Modulating Signal):

replace "9600 bps" with "19,200 bps"

Page 2, ¶ 4(F)(1):

replace "153.0250 + Mx.0100 0≤M≤444" with "450.0250 + Mx .0025 0≤M≤380"

**FCC FORM 442 (SATELLITE)**

Page 2, ¶ 4:

delete first line of entries in (A) through (G), and replace with the following:

(A)	(B)	(C)	(D)	(E)	(F)	(G)
137.425 MHz	10W	9.8 dBW	PEAK	15K0FID	4800 bps	15 KHz

Page 2, ¶ 4(F)(1):

delete "157.5125 + Mx.0100 0≤M≤446"

**EXHIBIT 1**

Page 1, ¶ 1, lines 2-4: delete and replace with the following:

for experimental authorization for radio facilities in the 455.0000 to 456.0000 and 459.0000 to 460.0000 MHz (to be used for uplink); 400.6200 MHz (to be used as downlink); and 450.0000 to 451.0000 MHz (to be used as downlink to the Master Ground Station

Page 5, 1st full ¶, line 11: delete and replace with the following:

spectrum, the frequencies from 450.0000 to 460.0000 MHz. Final Analysis

Page 5, 1st full ¶, line 15: delete and replace with the following:

satellite, so that all of the potentially usable segments of this 10 MHz-wide

Page 6, last line: delete and replace with the following:

450.0000 to 460.0000 MHz range.

Page 7, 4th ¶, line 1: delete and replace with the following:

To this end, Final Analysis proposes the use of a total of 1,848 RTs, to be



Page 8, table: delete and replace with the following:

<u>Region</u>	<u>Description</u>	<u>Number of RTs</u>
1	Northeast	545
2	Middle West	409
3	South	460
4	West	422
5	Alaska	3
6	Hawaii	9
	<b>TOTAL</b>	<b>1,848</b>

Page 8, footnote 4, lines 3 and 4: delete and replace with the following:

population estimates. The figure of 1,848 total RTs for the continental United States, Alaska and Hawaii yields a ratio of approximately 100,000 urbanized "pops" per RT. For experimental

Page 10, first full ¶, lines 2 and 3: delete and replace with the following:

NVNG MSS systems to coexist with terrestrial mobile users in the 450.0000 to 460.000 MHz band. Since the communications facilities, and their ability to

Page 10, 2d full ¶, line 3: delete and replace with the following:

on a shared basis in the 450.0000 to 460.000 MHz band.

Page 11, first full ¶, line 1:

replace "153.0000-157.5000 MHz band" with "450.0000 to 451.0000 and 455.0000 to 460.0000 MHz bands"



Page 11, first full ¶, line 4:

replace "153.0000-157.0000" with "these".

replace "10 KHz" with "2.5 KHz"

Page 11, second full ¶:

delete first sentence, and replace with the following:

Final Analysis proposes to employ segments of the 137-138 MHz band on one of its satellite transmitters for downlink activities.

Page 11, last ¶, line 1:

delete and replace with the following:

"The other two satellite transmitters will operate on a 50 KHz segment of"

Page 12, first full ¶, line 2:

replace "153.0000-162.0000" with "450.0000 to 460.0000"

Page 12, first full ¶, lines 3-4:

replace "4.5 MHz" with "1.0 MHz" and "157.5000 to 162.0000" with "450.0000 to 451.0000 and 137.0000 to 138.0000"

Page 12, second full ¶: delete entire paragraph and replace with the following:

The proposed satellite downlink in the 137.0000 to 138.0000 MHz band utilizes frequencies currently allocated for use by commercial NVNG MSS facilities. The use of the frequencies specified in this band (30 KHz bandwidth, center frequency: 137.4250 MHz) is necessary for downlink communications to the Remote Terminals.

Page 13, first full ¶, first sentence:

delete, and replace with the following:

Final Analysis will use selected 25 KHz channels in the 455.0000-456.0000 and 459.0000-460.0000 bands for RT uplink, and 50 KHz channels in the 450.0000-451.0000 MHz band for the Master Ground Station uplink.



Page 13, first full ¶, line 5:

replace "this 4.5 MHz band" with "these bands"

replace "10 KHz steps" in "2.5 KHz"

**APPENDIX A:** replace table with table set forth below

<b>Description</b>	<b>Proposed Designation</b>	<b>Channel Bandwidth</b>	<b>Transmitter Type</b>	<b>Center Frequencies (MHz)</b>
Satellite	Downlink			
Transmitter #1		50 KHz	Fixed	400.6200
Transmitter #2		50 KHz	Tunable	400.6200
Transmitter #3		30 KHz	Tunable	137.4250
Master GS	Uplink	50 KHz	Tunable	450.0250, 450.0275, 450.0300, . . . , 450.9700, 450.9725, 450.9750
Remote Terminals	Uplink	30 KHz	Tunable	455.0150, 455.0175, 455.0200, . . . , 455.9800, 455.9825, 455.9850
		30 KHz	Tunable	459.0150, 459.0175, 459.0200, . . . , 459.9800, 459.9825, 459.9850

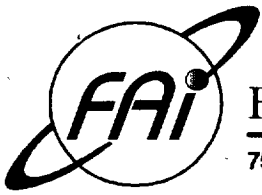
The foregoing amendment is respectfully submitted as of this 25th day of May, 1995.

FINAL ANALYSIS, INC.

By

  
Nader Modanlo, President





## Final Analysis Inc.

7500 Greenway Center • Suite 1240 • Greenbelt, Maryland 20770 • Tel: (301)474-0111 • Fax: (301)474-3228

May 25, 1995

To: All NVNG MSS First and Second Round Applicants

I write this letter to you in a spirit of friendship and cooperation. As you know, on March 6, 1995, Final Analysis filed an experimental proposal aimed at assisting the efforts of the FCC and all NVNG MSS applicants in identifying and securing additional frequencies for this new service at WRC-95 (and, failing that, WRC-97).

By his letter dated May 12, 1995, Scott Blake Harris, Chief of the International Bureau, has endorsed Final Analysis' efforts to assist in the identification of suitable frequencies for shared use. Mr. Harris stated:

I agree completely that obtaining additional frequencies for little LEOs is essential to U.S. interests. Obtaining mobile-satellite service allocations below 1 GHz [is] one of our top priorities for the 1995 World Radiocommunication Conference. To that end, we support FAI's efforts to identify suitable spectrum for allocation to little LEOs, and look forward to working with FAI. We also support FAI's willingness to allow other little LEO applicants to participate in, and share the results of, this study. This spirit of cooperation will be critical as we work together to secure allocations at upcoming WRCs.

Some of you have expressed concerns about our choice of frequencies to test, and the number of remote terminals proposed. We have attempted to address these concerns in good faith by amending our initial application to conform our frequency choices to those currently believed to be most promising by the NVNG MSS applicants. In addition, we have reduced the number of remote terminals requested by a factor of five. The point of our experiment is to demonstrate the sharing potential of specific frequencies for the benefit of all NVNG MSS applicants.

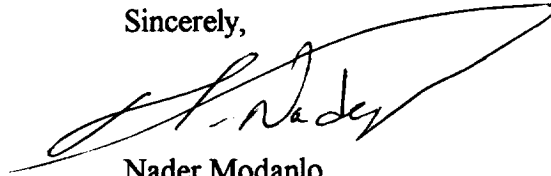
In the spirit of Mr. Harris' letter, I now invite you to join forces with Final Analysis in assisting the U.S. Government in the search for additional frequencies suitable for sharing. I believe that we have much to contribute to the entire little LEO industry by our proposed experiment. This experiment will help demonstrate to the world for WRC-95 and beyond the commitment of the United States Government and the little LEO industry to obtaining additional frequencies for use by NVNG MSS applicants. As you are well aware, there is no substitute for real-world testing.

I would again like to emphasize that it is our intention to share all experimental data with the United States Government and with you, our fellow applicants in the NVNG MSS service. Final Analysis welcomes your participation, technical input, and constructive

suggestions. A united front by the entire NVNG MSS industry at the 95 WRC and in subsequent conferences is in the best interest of all little LEO applicants. The data accumulated can be utilized for purposes of WRC-95 and beyond as the FCC turns to implementing rules for NVNG spectrum attained at the WRC.

This may be a competitive service, but let's work together in good faith on matters that are for the common good.

Sincerely,

A handwritten signature in black ink, appearing to read "Nader Modanlo", written over a large, sweeping horizontal stroke.

Nader Modanlo



CERTIFICATE OF SERVICE

I, Ronald J. Jarvis, an attorney in the offices of Catalano & Jarvis, P.C., hereby certify that on this 25th of May, 1995, I caused true and complete photocopies of the foregoing Amendment to be sent, via U.S. First Class Mail, to the following:

Scott Blake Harris  
Chief, International Department  
Federal Communications Commission  
Room 800  
2000 M Street, N.W.  
Washington, D.C. 20554

Cecily C. Holiday, Deputy Chief  
International Bureau  
Federal Communications Commission  
2000 M Street, N.W., 5th Floor  
Washington, D.C. 20554

Thomas S. Tycz, Chief  
Satellite & Radiocommunications Division  
Federal Communications Commission  
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Kristi Kendall, Esquire  
International Bureau  
Federal Communications Commission  
2000 M Street, N.W., 5th Floor  
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Mr. Harold Ng  
International Bureau  
Federal Communications Commission  
2000 M Street, N.W., Room 512  
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John Morgan  
Chief, Experimental Licensing Branch  
Federal Communications Commission  
2000 M Street, N.W., Suite 230  
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Leslie Taylor Associates, Inc.  
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Representing E-SAT

  
\_\_\_\_\_  
Ronald J. Jarvis

**CATALANO & JARVIS, P.C.**  
**ATTORNEYS-AT-LAW**

1101 30TH STREET, N.W., SUITE 300  
WASHINGTON, D.C. 20007

RONALD J. JARVIS

TELEPHONE: (202) 338-3500  
FACSIMILE: (202) 333-3585

June 19, 1995

**HAND-DELIVERY**

Mr. H. Franklin Wright  
Chief, Frequency Liaison Branch  
Office of Engineering and Technology  
Federal Communications Commission  
2000 M Street, N.W., Room 230  
Washington, D.C. 20554

Re: *Final Analysis, Inc.*  
*Applications for Experimental Authorization*  
*Filed March 6, 1995*

Dear Mr. Wright:

On behalf of Final Analysis, Inc., and in consideration of recent developments with regard to choices of potential bands for shared use in preparation for WRC-95 and beyond, the above-captioned experimental applications are amended to propose utilization of 400.6200 MHz for Satellite Transmitter #3 in place of the frequency in the 137-138 MHz band originally proposed. In addition, the uplink frequencies for the Experimental Ground Station are changed, from 450-451 MHz (as set forth in the May 25, 1995 Amendment) to 455-456 and 459-460 MHz.

This change is intended to conform the experimental application to the best current information concerning suitable commercial bands for shared use by NVNG MSS systems, as developed in cooperation with the NTIA and in accordance with the Commission's recently-issued *Report and Order* in IC Docket No. 94-31.<sup>1</sup>

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<sup>1</sup>In preparation for WRC-95 and beyond, the NTIA has recently indicated that it intends to offer 401-404 MHz for sharing by NVNG MSS systems, and has stressed the importance of experimental studies for both WRC-95 and WRC-97 to support the feasibility of use of these frequencies, and to establish a basis for setting suitable power flux density limits to avoid interference to existing geostationary satellites.

CATALANO & JARVIS, P.C.

H. Franklin Wright  
Federal Communications Commission  
June 19, 1995  
Page 2

Description	Proposed Designation	Channel Bandwidth	Transmitter Type	Center Frequency (MHz)
Satellite Transmitter #3	Downlink	50 KHz	Tunable	400.6200 <sup>2</sup>
Master GS	Uplink	50 KHz	Tunable	455.0250, 455.0275, . . . 455.9700, 455.9725, 455.9750  459.0250, 459.0275, . . . 459.9700, 459.9725, 459.9750

The amendment itself, executed by Nader Modanlo, President of Final Analysis, Inc., is annexed hereto. Expedited consideration of the amended application is requested, in order to obtain useful experimental results as soon as possible. If there are any questions concerning the amendment, kindly contact the undersigned directly.

Sincerely,



Ronald J. Jarvis

Attachment

cc: See attached service list

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<sup>2</sup>Satellite Transmitters #2 and #3, as contemplated in this experimental application, will have the inherent capability to operate in the 401-404 MHz range presently offered by the Government: once the experimental system is operational, Final Analysis intends to seek additional authorization so that it may work with the FCC, the NTIA and other NVNG MSS applicants/licensees to examine the sharing possibilities in this band, in addition to the contemplated experiments in the proposed uplink frequencies (450 MHz band).



## Final Analysis Inc.

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### AMENDMENT

Final Analysis, Inc. hereby amends its May 6, 1995 applications for experimental authorization (as amended by its May 25, 1995 amendment) as follows:

#### FCC FORM 442 (SATELLITE)

Page 2, ¶ 4:

delete first line of entries in (A) through (G), and replace with the following:

(A)	(B)	(C)	(D)	(E)	(F)	(G)
400.62 MHz	10W	9.8 dBW	PEAK	50K0F1D	19,200 bps	50 KHz

#### FCC FORM 442 (GROUND STATION)

Page 2, ¶ 4:

delete note (1) to column (A), and replace with the following:

(1) 455.0250 + Mx.0025  $0 \leq M \leq 380$   
459.0250 + Nx.0025  $0 \leq N \leq 380$

#### EXHIBIT 1

Page 1, first sentence:

delete, and replace with the following:

Final Analysis, Inc.' ("Final Analysis") hereby submits its applications for experimental authorization for radio facilities in the 455.0000 to 456.0000 and 459.0000 to 460.0000 MHz (to be used for uplink); and 400.6200 MHz (to be used as downlink) bands as specified herein.

Page 5, first full ¶, line 11:

delete "450.0000", and replace with "455.0000"

Page 5, first full ¶, line 15:

delete "10 MHz", and replace with "5 MHz"

Page 5, first full ¶, line 16:

delete "and downlink"

Page 6, last line:

delete "450.0000", and replace with "455.0000"

Page 10, first full ¶, line 2:

delete "450.0000", and replace with "455.0000"

Page 10, second full ¶, line 3:

delete "450.0000", and replace with "455.0000"

Page 11, first full ¶, first sentence:

delete and replace with:

Final Analysis proposes the use of the 455.0000 to 460.0000 MHz band for its experimental uplink transmissions.

Page 11, second full ¶:

delete first sentence, and replace with the following:

Final Analysis proposes to employ the 50 KHz segment of spectrum from 400.595 to 400.645 MHz on its satellite transmitters for downlink.

Page 11, third full ¶:

delete entire paragraph



Page 12, first full ¶, first sentence:

delete entire sentence

Page 12, first full ¶, second sentence:

delete, and replace with:

Downlink will be in the 50 KHz segment from 400.595 to 400.645 MHz.

Page 12, second full ¶:

delete entire paragraph

Page 13, first full ¶, first sentence:

delete and replace with the following:

Final Analysis will use selected 30 KHz channels in the 455.0000-456.0000 and 459.0000-460.0000 bands for RT uplink, and 50 KHz channels in these bands for the Master Ground Station uplink.

#### **APPENDIX A:**

In the table,

1. Change center frequency of Satellite Transmitter #3 to 400.6200 MHz.
2. Delete center frequencies of Master GS, and substitute the following:

455.0250, 450.0275 . . . , 455.9700, 455.9725, 455.9750  
459.0250, 459.0275 . . . , 459.9700, 459.9725, 459.9750



The foregoing amendment is respectfully submitted as of this 19th day of June, 1995.

**FINAL ANALYSIS, INC.**

By 

Nader Modanlo, President



# CATALANO & JARVIS, P.C.

ATTORNEYS-AT-LAW

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May 25, 1995

## HAND-DELIVERY

Mr. H. Franklin Wright  
Chief, Frequency Liaison Branch  
Office of Engineering and Technology  
Federal Communications Commission  
2000 M Street, N.W., Room 230  
Washington, D.C. 20554

Re: *Final Analysis, Inc.*  
*Applications for Experimental Authorization*  
*Filed March 6, 1995*

Dear Mr. Wright:

On behalf of Final Analysis, Inc., and in consideration of recent developments with regard to choices of potential bands for shared use conducted by most of the "Little Leo" applicants in preparation for WRC-95 and beyond, the above-captioned experimental applications are amended to propose utilization of the following frequencies in place of the frequencies originally proposed:

Description	Proposed Designation	Channel Bandwidth	Transmitter Type	Center Frequencies (MHz)
Satellite	Downlink			
Transmitter #1		50 KHz	Fixed	400.6200
Transmitter #2		50 KHz	Tunable	400.6200
Transmitter #3		30 KHz	Tunable	137.4250
Master GS	Uplink	50 KHz	Tunable	450.0250, 450.0275, 450.0300, . . . , 450.9700, 450.9725, 450.9750
Remote Terminals	Uplink	30 KHz	Tunable	455.0150, 455.0175, 455.0200, . . . , 455.9800, 455.9825, 455.9850
		30 KHz	Tunable	459.0150, 459.0175, 459.0200, . . . , 459.9800, 459.9825, 459.9850



CATALANO & JARVIS, P. C.

H. Franklin Wright  
Federal Communications Commission  
May 25, 1995  
Page 2

In addition, the number of Remote Terminals ("RTs") requested has been reduced from 9,240 (based on one RT per 20,000 pops in each region to be tested) to 1,848 (based on one RT per 100,000 pops).

The foregoing changes are intended to conform the experimental application to the best current information concerning suitable commercial bands for shared use by NVNG MSS systems, as developed in cooperation with other applicants in the context of their "Joint Supplemental Reply Comments" recently filed in response to the Commission's Notice of Inquiry in IC Docket No. 94-31.<sup>1</sup>

The use of a small (30 KHz) segment of the 137-138 MHz band is also proposed herein, since the frequencies jointly identified by the applicants in their Supplemental Reply Comments do not include commercial frequencies suitable for downlink to RTs (the downlink frequencies identified by the applicants are in the Transit Band (399.9 to 400.05 MHz) and the 386-390 MHz band, both currently controlled by the Government).

The amendment itself, executed by Nader Modanlo, President of Final Analysis, Inc., is annexed hereto. Also attached hereto is an open invitation from Final Analysis to all other NVNG MSS applicants to participate in the proposed experiment, and share in the data gleaned from it.

As was the case with the original experimental application, expedited consideration of the amended application is requested, in order to obtain useful experimental results as soon as possible.

If there are any questions concerning the amendment, kindly contact the undersigned directly.

Sincerely,



Ronald J. Jarvis

Attachment

cc: See attached service list

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<sup>1</sup>The "Joint Supplemental Reply Comments" were submitted on May 18, 1995 by CTA Commercial Systems, Inc., E-Sat, Inc., Final Analysis Communication Services, Inc., GE American Communication Services, Inc., Leo One USA Corporation, Orbital Communications Corporation, Starsys Global Positioning, Inc. and Volunteers in Technical Assistance.