BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of the Applications of

FINAL ANALYSIS, INC.	)	File Nos.	4680-EX-PL-95
	)		4682-EX-PL-95
For Authorization in the	)		4683-EX-PL-95
Experimental Radio Service	)		

To: Chief, International Department

OPPOSITION TO COMMENTS OF STARSYS GLOBAL POSITIONING, INC.

Final Analysis Inc. ("FAI"), by its attorneys, hereby submits its "Opposition" to "Comments" filed by STARSYS Global Positioning ("STARSYS") on April 5, 1995. In its comments, STARSYS seeks denial of the pending application for experimental authorization filed by FAI on February 24, 1995. As set forth in greater detail below, the STARSYS comments are gratuitous, erroneous and irresponsible. Accordingly, they should be entirely disregarded, and the experimental authorization of FAI granted on an expedited basis.

DISCUSSION

I. Background

After several working meetings with Commission staff, and in keeping with the goals of the Informal Working Group ("IWG-2") of the IAC (which

is concerned with obtaining additional spectrum for NVNG MSS applicants in WRC-95), FAI filed its application for experimental authorization with the Commission on February 24, 1995. The objective of this application was to provide real-world data on sharing possibilities between NVNG MSS technology and existing applications in potentially useful portions of the spectrum.

In its application, FAI proposed the launch, in summer, 1995, of an experimental satellite, and the production of 9,240 Remote Ground Terminals ("RTs") so that the full range of functioning of a NVNG MSS system could be tested in various regions of the country. As explained in the application, this number of RTs was requested in order to have sufficient terminals to fully test the operational system in the bands proposed. It was estimated that one RT per 20,000 "pops" would be adequate to obtain reliable results that would persuade existing users of the designated spectrum that coexistence was possible with NVNG MSS technology without degrading the quality of their services.

Based on its analysis, inquiries with Commission staff and information gleaned from the IWG-2 meetings, FAI proposed the use of 153.0000 to 157.5000 MHz (to be used for uplink); 157.5000 to 162.0000 (to be used as downlink) and 400.595 to 400.645 MHz (to be used for downlink to the Master Ground Station).[1] These frequencies were of particular interest due to the

[1]Final Analysis subsequently withdrew the following small segments of spectrum, shared with Government users, which would have required the consent of NTIA to the experimental application:

(Footnote continued on next page)

possibility of sharing with existing terrestrial users, most of which were considered to be technologies that were unlikely to suffer disruption from the intermittent, short-burst messaging of the NVNG MSS technology. FAI proposed the inclusion of FDMA channel-scanning techniques would ensure that only unoccupied channels would be chosen for uplink activity.

In proposing this experiment, FAI, which is familiar with the Commission's rules and policies, was well aware that (i) the approval of its experimental application did not create any equities that could later be used to persuade the Commission to permit commercial operation; and (ii) FAI could be required by the Commission to cease operations on the frequencies requested in the experimental application *at any time* if it were determined that the experimental operation caused harmful interference to any established radio service. *See* 47 C.F.R. § 5.151(a)(2). In spite of these substantial risks, FAI undertook its experimental program in order to contribute as much as possible to the investigation of available spectrum for sharing by Little LEO systems. The data obtained from this experiment is intended to be of use both in WRC-95 and, if necessary, in WRC-97.

(Footnote continued from previous page)

Description	Frequencies	Designation
Shared Maritime Mobile	156-2475 – 157.0375 MHz	Uplink
Exclusive Gov't Maritime	157.0375 – 157.1875 MHz	Uplink
Shared Maritime Mobile	157.1875 – 157.4500 MHz	Uplink
Shared Maritime Mobile	161.5750 – 161.6250 MHz	Downlink
Shared Maritime Mobile	161.7750 – 162.0125 MHz	Downlink

The reason for this effort should be self-evident: FAI and its subsidiary, Final Analysis Communication Services, Inc. consider the NVNG MSS project that they have undertaken to be a core business activity. The present lack of sufficient suitable spectrum for use by second-round applicants in this service is of grave concern. FAI believes that immediate, and urgent attention by the United States, the Commission, and all interested parties is required to obtain the necessary frequencies for viable systems. Thus, FAI considers that, if suitable spectrum is not obtained by the United States at least by WRC-97, the viability of the entire NVNG MSS second round of applications is in jeopardy.

FAI has discussed its position, and the need for experimental data, with the Commission, and with both first- and second-round Little LEO applicants in the context of the IWG-2 meetings and splinter groups. Until the filing of the instant "Comments," FAI's efforts were ostensibly well-received by all. FAI reiterates that obtaining actual operational data is of the essence of this investigation, and that it welcomes participation, joint experimentation, and cost sharing in this effort from any and all proponents of this service, including first- and second-round applicants.[2] So far, it should be noted, no other party has stepped forward with ideas and assistance in funding, and so

[2]The only caveat is that, in view of the tight time frame, FAI requests that participation by other interested parties not hold up the issuance of the basic authorization that will permit FAI to enter into contracts to purchase "long lead" items that must be incorporated into the spacecraft. If necessary, once the basic authorization is issued, it can be modified to include updated frequencies or other changes thought by the proponents to be of greatest utility in this effort.

FAI has had to "go it alone," despite the risk and high costs associated with the project.[3]

II. STARSYS' Contentions

STARSYS begins its exercise by generally commending FAI for its intention to examine the suitability of frequency bands between 100 and 500 MHz. STARSYS Comments at 2. However, things go downhill from this point onward: first STARSYS complains that FAI has chosen only a single band, and one that land mobile users are interested in. Then, STARSYS claims that it can divine, based on the number of Remote Terminals ("RTs") requested in FAI's application, that FAI has a "specific commercial use" in mind that is not disclosed in FAI's application. Thus, STARSYS concludes, FAI's application for experimental authorization *must* constitute an impermissible attempt to commence commercial activities in violation of the Policy Statement.[4]

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[3]FAI is also a participant with other NVNG-MSS applicants in commissioning an engineering study by the firm of Cohen, Dippell and Everist, P.C. to identify and help to characterize portions of the spectrum below 1 GHz that might profitably be targeted for this service. There are limits, however, to such paper inquiries, and in reality the only way it can be ascertained whether a satellite system with ground terminals can coexist with existing users in a frequency band is to test it from a satellite, and using multiple ground terminals. FAI also notes that STARSYS refused to participate in this study, purportedly because it could not afford the approximately $4,000 required to share costs with the other parties. It might profitably be asked how STARSYS can afford to design, construct, launch and operate a multiple satellite system when it cannot even participate in minimal cost sharing among several parties in a crucial technical study to help the United States obtain necessary frequency allocations. Or perhaps, contrary to its representations, STARSYS is really more interested in preventing market entry by competitors than it is in obtaining additional frequencies.

[4]*Policy Statement on Experimental Satellite Applications*, 7 FCC Rcd 4586 (1992).

STARSYS also has several other "concerns." First, it complains that the proposed August launch of FAI's application is too late for data to be digested in time for WRC-95. Next, STARSYS contends that, since it cannot imagine how FAI can complete its work on the satellite in a mere 5 months, FAI must be in violation of the Commission's Rules by engaging in premature construction of its spacecraft.

Next, STARSYS claims that FAI's proposed use of the 50 KHz segment from 400.595-400.645 MHz for space-to-earth communications will conflict with STARSYS' use of this frequency segment under license. STARSYS also opine that FAI's proposal to employ a ground station transmitter at 22 dbW and a low angle of incidence for its experimental satellite will "probably cause substantial interference to fixed and mobile radio and television broadcasters, state and local fire departments, national law enforcement agencies." STARSYS Comments at 9. As if this were not enough, STARSYS then jumps on the Motorola bandwagon, claiming that it, too fears a mid-space collision if FAI's experimental satellite is launched into 1,000 km orbit.[5]

Finally, and reaching a new height of absurdity, STARSYS claims that FAI is in violation of its ground station license.

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[5]The possibility of a mid-space collision between FAI's proposed experimental and STARSYS' system (which has not been, and may never be, deployed) is so speculative and remote that it does not warrant much discussion herein. As noted in the April 10, 1995 Reply Comments of Final Analysis Communication Services, Inc. to the identical issues raised by Motorola, Inc., FAI will of course take every reasonable step to avoid conflicts that may precipitate disasters. But that does not include abandoning a viable proposed experiment in light of possibilities that are so remote and unlikely as to be meaningless. FAI's single satellite does not statistically change Motorola's, or for that matter, STARSYS' collision picture in a space environment that is replete with other existent hazards.

III. FAI's Responses

As an initial matter, it should be observed that STARSYS takes the "technical" arguments in its Comments so seriously that it has decided to take the extraordinary step of by-passing the engineers altogether and have its lawyers directly opine on engineering matters. As a result, STARSYS' technical comments should be accepted at their full face value: zero. These armchair observations of STARSYS' counsel are not competent, and cannot be taken seriously. As a consequence, STARSYS' contentions concerning potential harmful interference, orbital collisions, design of FAI's experimental proposal, number of RTs, etc. are for the most part gratuitous and should be disregarded.

For example, the attempt by legal counsel to claim that the purpose of FAI's experiment is the "characterization" of the 153-162 MHz band, STARSYS Comments at 7, is simply a misunderstanding of the proposed experiment. The actual research objective is "to demonstrate that NVNG MSS systems (both uplinks and downlinks) can coexist peacefully with existing users in the band." Experimental Application, Exhibit 1 at 6. This is a far more ambitious goal, and, despite the unfounded assertions of STARSYS' lawyers, it cannot be accomplished with no RTs, or one RT, or 100 RTs.[6]

[6]In addition, STARSYS' complaint that this is a heavily-used band is nothing new. All of the portions of the spectrum considered by the applicants to be targeted for potential sharing are heavily used. Any portion of spectrum targeted would be subject to the same type of objection from some user group. The question is whether the two services can be made to be compatible, and that is the subject of Final Analysis' experiment in a nutshell.

STARSYS' counsel also inexpertly opines that the proposed use of a 22 dbW ground station transmitter with a high gain antenna at low satellite angles of incidence is too powerful, and would interfere with terrestrial uses. This is simply irresponsible speculation; but again, if interference is caused, the remedy is for FAI to cease the operations that interfere. The Commission's Rules provide ample protection: the process does not require the addition of STARSYS as a self-appointed guardian angel.

The larger problem is that these comments generally miss the entire point of FAI's application. That is, it is an *experimental application* under Part 5 of the Commission's Rules. Consequently, STARSYS' alleged "concerns" about interference with its assertedly soon-to-be-licensed frequencies at 400.-595 to 400.645 MHz are entirely misplaced. As noted above, the Commission's Rules require FAI to cease and desist from communications that interfere with licensed users, *including STARSYS* (if and when STARSYS ever actually secures a license and deploys its system). The risk is entirely with FAI on this project. It is therefore somewhat puzzling that STARSYS would attempt to mount this level of offensive campaign against an application which, *by its very definition*, can *never* be at conflict with a licensed operator.

The key to STARSYS' *modus operandi* is found in a "concern" addressed briefly on page 5 of its Comments: STARSYS is afraid that FAI might "gain a head start" on other operators through its experimental program. This complaint, coming from a first-round applicant that is supposedly poised to obtain commercial license, is downright pathetic.

Later in its Comments, STARSYS voices its even-more-piteous claim that, based on its reading of FAI's application, FAI must have a customer it is intending to serve -- a customer with specific requirements. This is simply not the case, and whatever phrenologist or Psychic Friend STARSYS is consulting to reach this conclusion should refund STARSYS' retainer. FAI does not have a customer for its proposed experimental services, and the number of RTs requested is a simple numerical derivation from regional populations set forth in a Rand McNally Atlas.

In view of the phlegmatic performance of STARSYS' program in virtually every respect, the fear of being passed by is not surprising: any movement at all may seem speedy to one who is standing still. However, although STARSYS' fears are understandable in light of its own shaky position before the Commission, they are objectively absurd. FAI cannot possibly "gain a head start" on other applicants with a satellite program that is entirely interruptible and subject to a short license term. STARSYS would be better off devoting its efforts to proving to the Commission (if it can) that it has the requisite qualifications to hold license, so that it can commence its commercial operations.

As to STARSYS' conjectures that FAI must have already commenced work on its spacecraft in order to meet the deadline, because it cannot possibly construct and launch such a satellite in the 5 month time frame proposed, they are just conjectures -- and are not entitled to serious consideration. STARSYS should remember that FAI and its subsidiary, Final Analysis Communication Services, Inc. are in the business of designing, constructing and launching satellites, and providing engineering services and consultation

to other companies in this field. If STARSYS wishes to know how these matters can be handled on an expedited basis, it should consider hiring Final Analysis to design and implement its project. Otherwise, it should simply stand aside.

Finally, in response to the three pages of verbiage in which STARSYS self-righteously claims that FAI violates the terms of its Master Ground Station experimental license (and that FAI's license has expired), there is only one appropriate response. STARSYS should be ashamed of itself for this irresponsible, half-hearted and unprofessional effort. The fact is that STARSYS has failed to retrieve the correct license from the Commission, and has wasted everyone's time in lambasting FAI based on entirely erroneous presumptions. STARSYS is apparently dealing from a draft which was never issued and never went into effect: STARSYS did not even attempt to verify that it had the correct information before it sought to scold FAI for this fantasy misconduct.[7]

CONCLUSION

FAI's proposed experiment is intended to assist in the ongoing process of obtaining "hard data" for use by the United States Government and all of the second round NVNG MSS applicants in securing new frequencies for use in implementing this new technology. As noted in FAI's application, time is

[7]Final Analysis' actual license for the Logan facility went into effect on November 11, 1994, and is still in effect. Final Analysis has not sought to modify its existing ground station license impermissibly: it is seeking additional operational authority for the ground station in its new application.

of the essence in this project, since the WRC-95 process is well underway, and in order to obtain usable data for WRC-95, the launch can be no later than this summer. Although this is an ambitious timetable, FAI is committed to commencing its efforts immediately, as soon as approval is given by the Commission.

The attempt to put the brakes on this process by STARSYS, based as it is on "hunches," irresponsible and incompetent speculation, and erroneous information, is at base just another anti-competitive attempt by a first-round applicant to stall the process for the entire second round. After all, STARSYS (if it is ever licensed) already has frequencies to use for its proposed system. It should not be allowed to interfere in an experimental proposal meant to obtain information beneficial to the interests of the United States Government and to other applicants in this service.

In view of the foregoing, FAI respectfully requests that the Commission reject the "Comments" filed by STARSYS, and expeditiously grant FAI's experimental application.

Respectfully submitted,

FINAL ANALYSIS, INC.

By _____

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Dated: April 14, 1995

Declaration of Burton J. Levin, Ph.D.

I, Burton J. Levin, Ph.D., hereby declare under penalty of perjury as follows:

1. I am the technically qualified person responsible for the preparation of the technical information contained in the foregoing "Opposition to Comments of STARSYS Global Positioning, Inc." (the "Opposition") of Final Analysis, Inc.

2. The technical information contained in the Opposition is true and correct to the best of my knowledge and belief.

Dated: April 14, 1995

Burton J. Levin, Ph.D.

Certificate of Service

I, Ronald J. Jarvis, an attorney in the law firm of Catalano & Jarvis, P.C., hereby certify that on this 14th day of April, 1995, I caused a true and complete photocopy of the foregoing "Opposition to Comments of STARSYS Global Positioning, Inc." to be sent, via U.S. first class mail, postage prepaid, to the following:

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