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Federal Communications Commission

WASHINGTON, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

Satellite and  
Radiocommunications Division  
International Bureau

*In the Matter of the Application of*

FINAL ANALYSIS COMMUNICATION )  
SERVICES, INC. )

File Nos. 25-SAT-P/LA-95  
76-SAT-AMEND-95

For Authority to Construct, Launch )  
and Operate a Non-Voice, Non- )  
Geostationary Low Earth Orbit )  
Mobile Satellite System )

To: Chief, International Department

CONSOLIDATED REPLY TO COMMENTS AND  
OPPOSITION TO MOTION TO DISMISS

Final Analysis Communication Services, Inc. ("Final Analysis"), by its attorneys, hereby submits its "Consolidated Reply" to the "Comments" pertaining to Final Analysis' February 24, 1995 Amendment filed by STARSYS Global Positioning, Inc. ("STARSYS") and Orbital Communications Corporation ("ORBCOMM"); and its "Opposition" to the Motion to Dismiss filed by Leo One USA Corporation ("Leo One"). As demonstrated below, the February 24, 1995 Amendment decreases overall frequency use and removes existing conflicts; accordingly, the Commission's rules do not require that the Amendment be considered a "new application."

## DISCUSSION

### I. Overview

Final Analysis filed an Amendment to its November 16, 1994 Application on February 24, 1995. In pertinent part, the Amendment made slight adjustments to the proposed frequency plan in the 137-138 MHz band, and repositioned the center frequency of the dedicated ground station link in the 148-150 MHz band. These changes were required to reduce potential conflicts with Meteorological Satellites ("MetSats") and ORBCOMM, and to ensure a clear channel for Final Analysis' ground station. In the course of this revision, Final Analysis also reduced its overall proposed use of spectrum by employing narrower, 15 KHz channels in the 137-138 MHz band, and reducing the data bit transfer rate. In addition, Final Analysis deleted an entire 50 KHz channel in the 400 MHz band.

The net effect of these changes was to reduce the overall frequency use profile of the application, and make it easier to coexist with both existing and proposed users, limiting the potential for harmful interference.<sup>1</sup>

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<sup>1</sup>Although Final Analysis has used every effort in good faith to avoid, eliminate or reduce potential frequency conflicts with other pending applicants, the Commission has pointed out that its principal interest is in determining whether the pending applications can coexist with systems that are *already licensed*. Thus, issues raised by unlicensed applicants such as STARSYS, or Leo One concerning whether Final Analysis' proposed system is compatible are at best premature. The applications were not designed to be compatible with each other. As stated by the Chief of the Satellite and Radiocommunication Division of the International Bureau in a November 2, 1994 Letter to Albert Catalano of Catalano & Jarvis, P.C.:

. . . [w]e see no particular benefit to be gained from analyzing, at this point, the technical interplay among applications that were not designed to be compatible with each other. Our focus in analyzing the second round applications will be whether these systems will be designed, in accordance with our rules, to co-exist with *previously-licensed systems*.

November 2, 1994 Letter of Thomas S. Tycz, Chief, Satellite and Radiocommunications Division, International Bureau, to Albert J. Catalano, Catalano & Jarvis, P.C. at 2 ¶ 2 (emphasis supplied). A photocopy of this letter is attached as "Exhibit 2" hereto.

Final Analysis' Amendment also proposed to change some aspects of its satellite placement in its constellation, to take advantage of launch efficiencies. However, the table supplied in the Amendment contains inadvertent clerical errors, creating the false impression that new orbital locations were being proposed. This error is corrected by Errata filed with the Commission concurrently herewith.

The Commission's rules state that an amendment will be deemed to be a "major amendment" (in pertinent part) if the amendment ". . . changes the proposed frequencies or orbital locations to be used." 47 C.F.R. § 25.116(b)(1). However, the filing of an amendment, even if it is deemed to be a "major amendment" under the Commission's Rules, will not be considered to be a newly-filed application if:

- (1) The amendment resolves frequency conflicts with authorized stations or other pending applications but does not create new or increased frequency conflicts;

\* \* \* \* \*

- (3) The amendment corrects typographical, transcription, or similar clerical errors which are clearly demonstrated to be mistakes by reference to other parts of the application, and whose discovery does not create new or increased frequency conflicts; or
- (4) The amendment does not create new or increased frequency conflicts, and is demonstrably necessitated by events which the applicant could not have reasonably foreseen at the time of filing.

47 C.F.R. § 25.116(c)(1) *et seq.*

Final Analysis' February 24, 1995 Amendment is clearly within one or more of the exceptions set forth in Section 25.116(c) of the Commission's Rules. For example, the changes in the 137-138 MHz band are required due to *unforeseen developments* in the planned use by MetSats, as recently revealed by Government representatives in connection with industry preparations for WRC-95. As noted in the Amendment, these channels in

the 137-138 MHz band will *not* be vacated in the near future by the MetSats as was previously assumed by all. In addition, these and other changes by Final Analysis have the overall effect of *greatly reducing* potential conflicts, and do not create new or increased conflicts.

Accordingly, Final Analysis' February 24, 1995 Amendment is not a "newly-filed" application under the Commission's Rules.

#### I. Comments of STARSYS

STARSYS asserts, without any detailed justification or technical support that the proposed changes set forth in Final Analysis' February 24, 1995 Amendment would increase, rather than decrease, interference to STARSYS' system, because "the newly specified channels are now congregated closer to the STARSYS center frequency at 137.5 MHz than in the original application." STARSYS Comments at 2. STARSYS concludes that "[t]ransmissions on any one of these channels within a STARSYS ground station main beam would cause interference to the STARSYS system." STARSYS Comments at 2-3. Undercutting its own rhetorical position, however, STARSYS remarks in a parenthetical that "Final Analysis has eliminated a channel with the identical center frequency." STARSYS Comments at 2.

STARSYS' unsupported assertion that the revised frequency plan proposed by Final Analysis would increase interference to its system is entirely false and should be disregarded. In fact, it is unquestionable that the changes proposed by Final Analysis would *decrease* the potential for interference to STARSYS. Final Analysis has *reduced* its overall frequency use by 140 KHz, and has *reduced* the width of its channels in the 137-138 MHz band *by 40 percent*, from 25 KHz to 15 KHz. Moreover, Final Analysis' signals are to be cross-polarized with STARSYS', significantly reducing the potential for any

conflicts. And, as STARSYS itself has pointed out, Final Analysis eliminated entirely a channel with the center frequency of 137.5 MHz! Finally, Final Analysis has eliminated an entire 50 KHz channel in the 400 MHz band to resolve a potential conflict with STARSYS. There is no question but that STARSYS' overall position vis á vis Final Analysis would be greatly improved with the acceptance of the February 24, 1995 Amendment.

Although Final Analysis scarcely expected an outpouring of gratitude from the other competing applicants, any reasonable and objective technical assessment of what has been proposed by Final Analysis would conclude that STARSYS, as well as the other applicants affected, should be *jumping for joy*. Final Analysis has determined to reduce its overall spectrum requirements in favor of more peaceful coexistence with existing users and applicants -- the amended application leaves more room for the other applicants, *including STARSYS*, to ply their trade. It is the height of cynicism for STARSYS to attempt to leverage this relatively beneficial action on Final Analysis' part into a rhetorical weapon using the Commission's procedural rules.

From the outset of this proceeding, STARSYS has been asserting that the second round applicants are not allowed to use techniques such as cross-polarization to attempt to coexist with first round applicants. STARSYS' position appears to be that this technique just does not work, or at least it does not work unless lawyers have haggled over it for months at great expense. But this is not a legal matter: it is simply a matter of physics. The fact is that cross-polarization not only works as a technique, but it is a solution to conflicts that has been accepted by the Commission in its licensing of ORBCOMM. To claim, as STARSYS does, that the rules of physics are suspended only for the second round applicants is not only disingenuous, but inconsistent with its own previous positions

before the Commission. In particular, the Frequency Sharing Plan was designed to leave room for the entry of future applicants.<sup>2</sup>

STARSYS also claims that Final Analysis' shrinking of the proposed channels in the 137-138 MHz band from 25 KHz to 15 KHz results in an increase in the power flux density from -137.2 dBW/m<sup>2</sup>/4 KHz to -130.8 dBW/m<sup>2</sup>/4 KHz. STARSYS Comments at 4. This change, however, as STARSYS itself points out, is still substantially below the -125 dBW/m<sup>2</sup>/4 KHz threshold established by the ITU at WARC-92. *See* International Footnote 599A. This slight increase in power flux density has no effect whatsoever on the interference picture (nor does STARSYS even assert that it does). STARSYS does assert, however, that Final Analysis' changes "appear to result" in an excessive power flux density. STARSYS Comments at 4. This, however, is only an unfounded assertion, and there is no indication that any qualified engineer made such an assessment. Accordingly, it is not entitled to credence.

Finally, STARSYS complains that Final Analysis' repositioning of its 50 KHz dedicated ground station uplink channel "would be likely to cause interference to STARSYS' uplinks on adjacent frequencies when a Final Analysis satellite and a STARSYS

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<sup>2</sup>The Commission's Rules make provision for the coordination of frequency usage between new applicants and existing licensees or permittees. *See* 47 C.F.R. § 25.142(b)(3):

Applicants for authority to establish non-voice, non-geostationary mobile-satellite service systems are encouraged to coordinate their proposed frequency usage with existing permittees and licensees in the non-voice, non-geostationary mobile-satellite service whose facilities could be affected by the new proposal in terms of frequency interference or restricted system capacity. All affected applicants, permittees, and licensees shall, at the direction of the Commission, cooperate fully and make every reasonable effort to resolve technical problems and conflicts that may inhibit effective and efficient use of the radio spectrum . . .

STARSYS can rest assured that, when it obtains its license or permit, Final Analysis will make every good faith effort to resolve technical problems in cooperation with the Commission's instructions. Until STARSYS obtains such authorization, however, this coordination effort is neither required nor feasible.

satellite are both within the field of view of a Final Analysis ground station.” STARSYS Comments at 4. Again, however, STARSYS overlooks the fact that Final Analysis’ channel is cross-polarized with that of STARSYS. In addition, Final Analysis is employing a modulation technique that diminishes the side lobes of its transmissions. Accordingly, there is no basis for assuming that interference is increased. Moreover, any marginal interference issues can be addressed by the installation of adequate filtering at Final Analysis’ ground station.<sup>3</sup>

## II. Comments of ORBCOMM

ORBCOMM begins its comments by reiterating the assertions concerning Final Analysis’ financial qualifications it previously made in its February 24, 1995 submission. ORBCOMM Comments at 2-3. However, these issues have been addressed by Final Analysis at length in its April 10, 1995 “Consolidated Opposition to Petitions to Deny and Consolidated Reply to Comments.” As demonstrated therein, Final Analysis is well-qualified to perform on its financial and technical commitments in accordance with the requirements of the Commission’s Rules.

ORBCOMM then notes that Final Analysis does, in fact, reduce potential interference to ORBCOMM’s system. ORBCOMM Comments at 3. However, ORBCOMM renews its complaints as to the adequacy of information concerning Final Analysis’ “STARS” technology. This, also, has been addressed in the above-mentioned April 10, 1995 filing, however.

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<sup>3</sup>Indeed, STARSYS itself recognizes that such filtering would take care of the problem. See STARSYS Comments at 4. This is a coordination issue that is best addressed at the point that STARSYS obtains its authorization for operation from the Commission.

Finally, ORBCOMM asserts that the proposed Amendment “does not eliminate conflicts in the 137-138 MHz band with ORBCOMM’s proposed modification.” ORBCOMM Comments at 3. However, it has always been Final Analysis’ position that ORBCOMM has no business filing that modification for consideration at this point. As noted by Final Analysis in its Petition to Deny ORBCOMM’s modification, the modification is nothing less than a blatant anti-competitive spectrum grab specifically designed to bar new applicants from the scarce remaining spectrum.<sup>4</sup> In addition, ORBCOMM’s modification is effectively a rejection of the license terms proffered to it by the Commission. Accordingly, that modification request is not entitled to protection by second round applicants, and should itself be soundly rejected by the Commission.<sup>5</sup>

### III. Motion of Leo One

Leo One seeks the dismissal of Final Analysis’ Amendment based on the assumption that it increases interference and changes the orbital locations to be used. As noted above, however, with respect to STARSYS’ comments, the power flux density variation is related to slimming down the channel widths in the 137-138 MHz band, reducing overall frequency use. And, to be sure, the power flux density is still well under

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<sup>4</sup>As pointed out previously by Final Analysis, the ORBCOMM modification was carefully designed to shore up the last remaining spectrum “gaps” left after the first round applicants specified their systems. The modification eats up an additional 90 KHz of spectrum, none of which is necessary to the viability of ORBCOMM’s system, but all of which is absolutely crucial to the viability of the second round applicants’ systems. Accordingly, and especially in view of the many representations made by ORBCOMM and other first round applicants that there would be “room” for additional applicants, basic fairness and the public interest require the rejection of ORBCOMM’s modification.

<sup>5</sup>ORBCOMM contends in a footnote that Final Analysis’ Amendment creates new conflicts with Leo One, E-Sat and GE Americom by proposing to move into the Transit Band. Comments of ORBCOMM at 4 n.8. But this is not accurate: first of all, E-Sat employs CDMA, and it would appear that an FDMA system such as Final Analysis’ can coexist peacefully with such a use. In addition, Final Analysis does not consider Leo One to occupy any Transit Band frequencies, since Leo One attempted to move into the band in an “Errata” filing which is clearly a major amendment. Leo One’s failure to pay the required fee for an amendment to its application requires the rejection of the Errata. Accordingly, Leo One is not entitled to protection for its proposed use in that band. Finally, Final Analysis intends to negotiate an engineering solution with GE Americom on the proposed use of the Transit Band that will be acceptable to both parties.



the -125 dbW/m<sup>2</sup>/4 KHz threshold set by the Rules. As a matter of fact, the power flux density is still well below that proposed by Leo One in its application. In sum, the potential for interference is not increased by this change.

In addition, Leo One's allegation that the "orbital locations" of Final Analysis' satellites has been changed is erroneous. In fact, the apparent change in the "mean anomalies" of the satellites in the Amendment was the result of an inadvertent clerical error that has been corrected in "Errata" filed by Final Analysis concurrently herewith. Moreover, as Leo One should be well aware, the Commission has already ruled that the "orbital locations" issue is inapposite to the NVNG MSS<sup>6</sup>. Thus, no further discussion of this issue is necessary.

Finally, Final Analysis continues to be amazed at the alacrity with which Leo One attempts to attack other applicants for supposed flaws which are most conspicuous in its own filings. As can be seen from even the most cursory review of Leo One's September 1, 1994 Application and November 16, 1994 Amendment, Leo One's own frequency plan, as amended, has conflicts that are much more serious than the fictitious interference problems it alleges with respect to Final Analysis. A few of the many glaring frequency conflicts in Leo One's amended application are set forth in a table attached as "Exhibit 3" hereto.

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<sup>6</sup>In its licensing order pertaining to ORBCOMM, *Orbital Communications Corporation*, FCC 94-268 (released October 27, 1994), the Commission categorically rejected the argument of dbX that ORBCOMM had filed a new application by changing its orbital locations in an amendment filed after the filing cut-off date:

Further, any discussion of orbit locations is inapposite here, as LEO systems operate in orbital planes, and are not assigned to specific -- and scarce -- geostationary orbital slots.


At a maximum, Leo One's attempt to exhume this moribund argument after it was soundly interred by the Commission shows lack of good faith; at a minimum, it is an utter waste of time for all concerned.

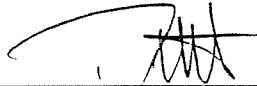
CONCLUSION

In view of the foregoing, Final Analysis respectfully requests that the Commission reject the comments filed by STARSYS and ORBCOMM, and the Motion to Dismiss filed by Leo One.

Respectfully submitted,

FINAL ANALYSIS COMMUNICATION  
SERVICES, INC.

By   
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Dated: April 19, 1995

Exhibit 1: Declaration of Burton J. Levin, Ph.D.

**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 "Consolidated Reply to Comments and Opposition to Motion to Deny" (the "Consolidated Reply") of Final Analysis Communication Services, Inc.
2. The technical information contained in the Consolidated Reply is true and correct to the best of my knowledge and belief.

Dated: April 19, 1995

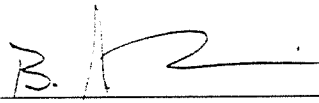
  
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Burton J. Levin, Ph.D.

Exhibit 2: November 2, 1994 Letter from Chief, Satellite and  
Radiocommunication Division, FCC to Albert J.  
Catalano