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November 16, 1999

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FEDERAL COMMUNICATIONS COMMISSION
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Ms. Magalie R. Salas, Secretary *Salas Policy Branch*
Federal Communications Commission *International Bureau*
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Washington, D.C. 20054

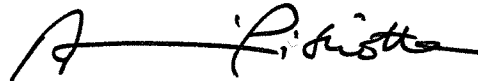
Re: Final Analysis Communication Services, Inc. - Application for Clarification and Review of Non-Voice Non-Geostationary Mobile Satellite Service ("NVNG MSS") License, 13 FCC Rcd 6618 (1988) (File No. 7-SAT-AMEND-98)

Dear Ms. Salas:

On behalf of Final Analysis Communication Services, Inc. ("Final Analysis"), enclosed is a letter to Mr. Donald Abelson that supplements the record in the above-captioned matter. Please place a copy of these materials in the above-referenced file.

Please contact the undersigned if you have any questions regarding this matter.

Sincerely,



Aileen A. Pisciotta
Counsel for
Final Analysis Communication Services, Inc.

cc: All Parties of Record

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Mr. Donald Abelson
Chief, International Bureau
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

**Re: Final Analysis Communication Services, Inc. -
Application for Clarification and Review of Non-Voice Non-Geostationary
Mobile Satellite Service ("NVNG MSS") License, 13 FCC Rcd 6618 (1998)
(File No. 7-SAT-AMEND-98)**

Dear Mr. Abelson:

Final Analysis Communication Services, Inc. ("Final Analysis"), by its attorneys, submits this letter in connection with the above-captioned matter to supply new information that demonstrates that the Commission cannot reasonably rely upon comments placed in the record by the National Telecommunications and Information Administration ("NTIA") and the National Oceanic and Atmospheric Administration ("NOAA"). Information recently obtained by Final Analysis pursuant to the Freedom of Information Act ("FOIA")¹ sheds important light on issues central to the resolution of this proceeding by demonstrating that NTIA and NOAA have raised false issues concerning the possibility that Final Analysis's proposed NVNG MSS system could create increased potential interference to government users of shared spectrum. This has led

¹ Final Analysis submitted initial individual FOIA requests to NTIA and NOAA on May 20, 1999 (together referred to as the "FOIA Requests"). The initial responses received from NTIA on June 29, 1999 and NOAA on July 13, 1999 included predominately public record material and other material significantly redacted, but did not include a listing of responsive documents withheld or the identification of reasons that they were withheld. Consequently, Final Analysis submitted appeals to the Department of Commerce Office of the General Counsel on July 29, 1999 (and subsequently amended on August 25, 1999) regarding the NTIA initial determination, and on August 13, 1999 regarding the NOAA initial determination (together referred to as the "FOIA Appeals"). A final consolidated response to the FOIA Appeals was released by letter dated October 19, 1999 from Barbara S. Fredericks, Assistant General Counsel for Administration, Department of Commerce, to Aileen A. Pisciotta, Counsel for Final Analysis.

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directly to erroneous decisions by the Commission with respect to Final Analysis's License,² wasting significant public resources as well as harming Final Analysis.

Most stunningly, with respect to the impact on NOAA of Final Analysis's proposed constellation changes, an independent technical review dated August 1998 performed for NOAA by Mitretek Systems Inc. (the "Mitretek Report")³ concluded that a fact-based analysis would show that:

the probability of either FAISAT system interfering with the NOAA Polar system will be significantly less than 1%. Using reasonable assumptions....it is possible that this probability could be less than 0.01%, and the difference between the two FAISAT systems could be of the same order of magnitude (emphasis added).⁴

This report, prepared by an objective technical advisory firm, was specifically commissioned by NOAA to examine whether there would be increased potential interference to NOAA from Final Analysis's proposed modified constellation. Although NTIA previously had acknowledged to the Commission that the resolution of the potential interference issue required an analysis of the probability of satellite and transmitter failure under Final Analysis's modified constellation design, neither NTIA nor NOAA had previously conducted any technical analyses of the probability of failure issue. The Mitretek study confirmed the necessity of analyzing the probability of failure in any consideration of the potential for interference to NOAA from either the original or modified Final Analysis constellation.

However, upon receipt of the Mitretek Report, which came to a conclusion contrary to their stated position, NTIA and NOAA simply buried the findings. NTIA did not inform either the Commission or Final Analysis that Mitretek had concluded that the modified constellation most likely would result in virtually no change in potential interference to NOAA and, indeed, that the potential for interference to NOAA under either the original or modified constellation was infinitesimal. Rather, the responses to Final Analysis's FOIA Requests and

² Final Analysis, *Order and Authorization*, 13 FCC Rcd 6618 (1998) ("Final Analysis License"), Application for Clarification and Review, filed May 1, 1998.

³ "Report on the Proposed Final Analysis Satellite System and Its Potential Interference With NOAA Downlinks," prepared by Mitretek Systems, Inc., August 1998. Copies of the final unredacted and initial redacted version provided to Final Analysis by NTIA are Attachments A and B to this letter, respectively.

⁴ *Id.* at 5.

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Appeal⁵ make clear that NTIA and NOAA hid this information from both Final Analysis and the Commission. Indeed, the NTIA December 11, 1998 Letter, the agency's "official" coordination report on Final Analysis's proposed modification, asserted the completely opposite, and unsupported, conclusion that that Final Analysis's modified constellation would cause increased potential interference.

Other material released in response to Final Analysis's FOIA Appeals shows that NTIA also mischaracterized analyses it had received from the Air Force regarding potential interference to the DMSP. NTIA's assertion that increased out-of-band interference would be received is unsupported and false.

The material finally brought to light by Final Analysis's FOIA Appeals makes it abundantly clear that NTIA's position regarding potential interference from Final Analysis's constellation modifications is baseless, and may not reasonably be relied upon by the Commission either to deny approval of Final Analysis's proposed system modifications or to impose discriminatory and unsupported license conditions such as the monitoring condition NTIA has insisted upon. Based on the communications and information uncovered by Final Analysis in its FOIA Requests and Appeal, it is clear that NTIA's stated concerns should be given no further consideration.

Therefore, pursuant to Section 1.45(c) of the Commission's rules, 47 C.F.R. § 1.45(c), in the interest of a full and complete record, Final Analysis respectfully requests consideration of this letter, as well as the attachments, including a copy of the Mitretek Report, in its resolution of this matter.

The Mitretek Report Reveals That Final Analysis's Modified Constellation Will Not Cause Harmful Interference to NOAA

In issuing Final Analysis's License, the International Bureau denied several proposed constellation modifications as major amendments, including an increase in the number of satellites and an increase in downlink EIRP, and imposed an extraordinary monitoring condition⁶

⁵ The FOIA Requests asked for disclosure by NTIA and NOAA of documents relied upon by those agencies in making statements to the Commission regarding Final Analysis's proposed NVNG MSS system, specifically with respect to the conclusion conveyed to the Commission by NTIA that Final Analysis's proposed constellation modifications would increase potential interference to NOAA due to increased footprint overlaps, and cause increased out-of-band interference to the Department of Defense Meteorological Satellite Program ("DMSP") due to increased downlink power. Statements regarding these conclusions were contained in the following communications: Memorandum dated December 29, 1997 from James Vorhies, NTIA, to Harry Ng, FCC International Bureau, attaching copies of e-mails dated December 4, 1997 ("December 4, 1997 Eng Message") and December 15, 1997 ("December 15, 1997 Eng Message") from CSC contractor Frank Eng to Gary Davis of NOAA; Memorandum dated January 30, 1998 from James Vorhies, NTIA, to Harry Ng, FCC International Bureau, attaching letter dated January 23, 1998 from James Vorhies, NTIA, to David Grimes, Final Analysis; Letter dated March 26, 1998 from William T. Hatch, Acting Associate Administrator, Spectrum Management, NTIA, to Regina Keeney, Chief, FCC International Bureau; Letter dated June 11, 1998 from William T. Hatch, Acting Associate Administrator, Spectrum Management, NTIA, to William E. Kennard, Chairman, FCC; and Letter dated December 11, 1998 from William T. Hatch, Acting Associate Administrator, Spectrum Management, NTIA to Thomas S. Tycz, Chief, FCC Satellite and Radiocommunication Division ("NTIA December 11, 1998 Letter").

⁶ Final Analysis License at para. 39.

largely on the basis of concerns conveyed informally to the Commission by NTIA, including in emails which had been written to NOAA by contractor Mr. Frank Eng of CSC.⁷ In these emails, Mr. Eng concluded that increased satellite footprint overlaps, particularly at latitudes below 50°, would raise the potential of interference from Final Analysis to NOAA under failure conditions, noting:

If all FAI systems operated perfectly as planned there would be no grounds for concern...[but]⁸...in the real world there is always a finite chance of faulty operations.

Thus, confirmation of Mr. Eng's preliminary conclusions would require an analysis of the probability of failure of Final Analysis's satellites, but Mr. Eng had not actually performed any analysis of failure probabilities. The uncertainty about the probability of failure and the possible real world impact on NOAA led him to recommend that NOAA demand an intensified monitoring condition.⁹ It is both curious and troubling, however, that such a monitoring condition was demanded only of Final Analysis and not, for example of Leo One Worldwide, Inc. ("Leo One"), as that licensee has a frequency sharing arrangement with the Department of Defense, which presumably, due to national security concerns, is even more sensitive to interference than the sharing arrangement between Final Analysis and NOAA.

Mr. Eng's early communications reveal that NTIA and NOAA have known from the very beginning that any issue of potential interference to NOAA is essentially a question of the probability of failure of Final Analysis's satellite and transmitter control systems. However, since that time, NTIA and NOAA have not completed any analysis of the probability of failure and have refused all requests to perform such an analysis, or even to accept from Final Analysis the additional technical data needed to perform such an analysis.

Instead, NTIA and NOAA have argued that an increase in bare satellite footprint overlaps indicates an increased probability of interference.¹⁰ Final Analysis has consistently stressed that, as an indication of potential interference, a change in footprint overlaps is not meaningful

⁷ The December 4, 1997 and December 15, 1997 Eng Messages apparently were based on Leo One's December 4, 1997 Petition to Deny Final Analysis's Conforming Amendment. Final Analysis has previously expressed concerns that the outside contracting firm relied upon NTIA for its technical analysis was the same firm utilized by Leo One. See Letter dated March 26, 1999 from Aileen A. Pisciotta, Counsel to Final Analysis, to Roderick K. Porter, Acting Chief, Common Carrier Bureau (summarizing March 9, 1999 meeting with NTIA). The response to Final Analysis's FOIA Requests has demonstrated that the concerns of Mr. Eng expressed in December 1997 were not based upon any technical analyses at all. Pursuant to FOIA, any technical analysis performed by Mr. Eng and subsequently relied upon by NTIA in its assessment of potential interference from Final Analysis would have to have been disclosed. Neither the NTIA nor NOAA responses to Final Analysis's FOIA Requests or FOIA Appeals indicated the existence of any such study.

⁸ December 4, 1997 Eng Message.

⁹ December 15, 1997 Eng Message.

¹⁰ Again, the conclusions of NOAA appear to follow closely those of Leo One in its Petition to Deny.

without consideration of the spectrum utilized by the overlapping satellites.¹¹ Mitretek, the technical consultant engaged by NOAA to examine this very issue, clearly expressed exactly the same view as Final Analysis about a footprint overlap analysis, eschewing the simplistic notion that an increase of footprint overlaps alone could provide any meaningful measure of potential interference. Indeed, Mitretek performed no comparative footprint analysis. Mitretek correctly pointed out that, as an indication of potential interference, a change in footprint overlaps is not meaningful without consideration of the spectrum utilized by the overlapping satellites. Mitretek stressed that:

The differences in the potential interference from the two Final Analysis systems depend on the detailed performance of the protection systems on the Final Analysis satellites and their exact failure probabilities *in a way that would cause harm to reception of the NOAA transmissions.* (Emphasis supplied).¹²

In other words, in order to cause any interference to NOAA, failure of Final Analysis's protection systems would have to directly impact the use of frequencies that overlap with NOAA.¹³ Moreover, Mitretek pointed out that, "based on general 'good design' principles":

the most probable failure mode of the [transmitter] switch would be to cause the transmitter to be switched "OFF". However, this would not be considered a "failure" in the context of causing interference to NOAA satellite users. It would also not be considered a failure (in this context) unless the frequency band of the FAISAT transmitter overlaps the frequency band that is being used by a NOAA transmitter on a nearby NOAA satellite.¹⁴ (Emphasis added.)

In light of these factors, and giving consideration to practical assumptions regarding possible failure scenarios and the possibility of an adverse impact on NOAA, Mitretek concluded that there is an infinitesimal and insignificant difference between Final Analysis's two systems as to potential for interference to NOAA.

There is a remarkable difference between Mitretek's conclusion and the official position subsequently presented by NTIA/NOAA to the Commission. In its December 11, 1998 letter

¹¹ See, e.g., Letter dated September 28, 1998 from Aileen A. Pisciotta, Counsel to Final Analysis to Regina Keeney, Chief, FCC International Bureau, p. 4 (summarizing *ex parte* presentation made by Final Analysis to FCC staff on September 14, 1998, including the point that footprint overlaps are not an indicator of interference without consideration of frequency use in the overlaps, and that the net effect of Final Analysis's proposed constellation changes, including changed footprint overlaps and reduced VHF transmitters, is a net reduction of potential interference to NOAA).

¹² Mitretek Report at 1.

¹³ Final Analysis has previously argued by way of illustration, a constellation with as many satellites and footprints as even Teledesic will not cause interference by virtue of footprint overlaps, unless it is transmitting in the same frequency band as another user. So it is with Final Analysis and NOAA. See Letter dated December 24, 1998 from Aileen A. Pisciotta, Counsel to Final Analysis, to Regina Keeney, Chief, FCC International Bureau, at 5.

¹⁴ Mitretek Report at 3. Once again this demonstrates that bare footprint overlaps, without consideration of the transmitting frequency, are meaningless.

providing its formal assessment of Final Analysis's Conforming Amendment in response to the Bureau's October 27, 1998 direct inquiry, NTIA stated flatly that "we conclude that there is an increased potential for interference under failure conditions between the application granted by the International Bureau and that proposed in the modified design."¹⁵ In support of its position, NTIA relied entirely on variations of Mr. Eng's original bare footprints argument, which Final Analysis had already shown was irrelevant,¹⁶ discussing at length the different ways that overlaps might be calculated.¹⁷

In its December 11, 1998 Letter, NTIA acknowledged that interference would occur only "when a Final Analysis satellite transmits when it is not supposed to do so under the timesharing arrangement," *i.e.*, under failure conditions. NTIA cited as an example the transmission by Final Analysis on the same frequency as a NOAA satellite during a footprint overlap,¹⁸ but then completely ignored the fact that its own bare footprint analysis excluded consideration of any such failure condition.¹⁹ NTIA stated only that "the probability of failure of various components of NVNG systems is not yet known."²⁰ Not only did this statement fail to cure the deficiency in its own analysis, but it was also extremely misleading. NTIA made no mention of the fact that the Mitretek Report, produced months earlier, had indicated that the probability of failure of either system was likely to be extremely small. It was especially disingenuous given the fact that NTIA itself could have determined the probability of failure if it had just followed through on Mitretek's advice and engaged in technical discussions with Final Analysis. Thus, it was NTIA itself that has been responsible for the lack of a probability of failure analysis.

NTIA has never offered any critique of the Mitretek Report or any factual reason for discounting it, nor could it. It is clear from the NTIA/NOAA response to Final Analysis's FOIA Appeals that neither NTIA nor NOAA commissioned or performed any other similar analyses of the probability of failure of NVNG MSS systems in general or of Final Analysis's proposed system in particular. Thus, there is no technical rationale for disputing Mitretek's result and no reasonable basis upon which NTIA could conclude that Final Analysis's proposed system would create additional potential interference.

¹⁵ Letter dated December 11, 1998 from William T. Hatch, Acting Associate Administrator, NTIA, to Thomas S. Tycz, Chief, Satellite and Radiocommunication Division, FCC International Bureau, responding to FCC inquiry dated October 27, 1998.

¹⁶ See note, 11 above.

¹⁷ In fact, redacted documents produced in response to Final Analysis's FOIA Appeals indicate that Mr. Eng was significantly involved in the preparation of the December 11, 1998 letter.

¹⁸ December 11, 1998 Letter at 2, note 1.

¹⁹ Despite this, however, in the December 11, 1998 Letter, NTIA ultimately completely discounted any relevance of Final Analysis's reduction from 78 to 32 of the total number transmitters operating in the 137 to 138 MHz band, stating that "while probably helpful, the reduction in the number of Final Analysis VHF transmitters would not necessarily guarantee, by itself, that there would be less interference potential." NTIA argued incorrectly that there was a lack of duty cycle constraints on Final Analysis's transmitters and engaged in wholesale speculation that "many of the transmission elements could be the same for one physical transmitter as for three." This shows that NTIA's conclusion is based upon a completely strained and incorrect analysis.

²⁰ December 11 Letter at 3, note 4.

Other Documents Released Reveal That Final Analysis's Modified Constellation Will Not Cause Harmful Interference to DMSP Operations in the 400.15-401.00 MHz Band

NTIA has pursued a similar tactic with respect to potential interference to DMSP operations in the 400.15-401.00 MHz band. In its December 11 1998 Letter, NTIA concluded:

there is some potential for increased out-of-band interference to the National Polar-Orbiting Operational Environmental Satellite System (NPOESS) planned for operation in the 400.15-401.00 MHz band because of the increase in Final Analysis transmitter power.²¹ (Emphasis added.)

Documents released in response to Final Analysis's FOIA Appeals reveal that NTIA's stated concerns completely inaccurately relay the information provided to it so as to imply increased potential out-of-band interference when absolutely none has been demonstrated.

The analysis regarding the potential interference to government users in the 400.15-401.00 MHz band was contained in a March 11, 1998 Air Force Memorandum to NTIA.²² The Air Force ostensibly analyzed the Commission's proposed license for Final Analysis, which denied the proposed power level increase, but in fact did consider the impact on DMSP of the power level of 17.8 dBW proposed by Final Analysis in its Conforming Amendment. The Air Force Memorandum included the following points:

- The Air Force Memorandum addressed the impact of Final Analysis's proposed transmitter power in these bands. It mentions only the difference in the power proposed by Final Analysis and that originally planned by the STARSYS system, and does not anywhere address a comparison of the Final Analysis original and modified power levels. It does not conclude that there is any increase in potential out-of-band interference due to the increased power. Thus, there is absolutely no basis for a finding that Final Analysis's Conforming Amendment would result in an increase in potential interference from its original application.²³
- The Air Force observed that if Final Analysis's modified system operated as proposed, it would not cause any harmful interference to DMSP operations, determining that Final Analysis's pfd "is adequate to avoid harmful interference to DMSP." A separate March 1998 memorandum, written directly from the NTIA Office of Spectrum Management to the Commission, reiterated the Air Force observations regarding Final Analysis's proposed increase in power, similarly

²¹ NTIA December 11, 1998 Letter at 3. "NPOESS" is the program name for the combined NOAA Polar-orbiting Operational Environmental Satellite program and the DMSP, which were converged, along with the NASA Earth Observing System, in 1994.

²² Memorandum dated March 11, 1998 from Nelson V. Pollack, Air Force Frequency Management Agency, to William Hatch, Deputy Associate Administrator of the NTIA ("Air Force Memorandum"). A copy of this Memorandum is provided as Attachment C.

²³ It should be noted that Final Analysis's original system proposed a higher power level than the GE STARSYS system. Thus, the Air Force comments about the Final Analysis pfd apply to both the original and modified constellations and are not a result of the proposed increased power level.

concluding that Final Analysis's proposed pfd "is adequate to avoid harmful interference to the DMSP."²⁴

- The fact that the entire document is focused on pfd levels, which is an in-band measure, shows that the Air Force was concerned primarily with potential in-band interference. Thus, the discussion of pfd levels in both the Air Force Memorandum and the NTIA March 18, 1998 Memorandum is relevant to in-band interference, not out-of-band interference as mentioned by NTIA to the Commission. Furthermore, there can be no in-band interference to the Air Force because Final Analysis does not actually time share these frequencies with the Air Force. Thus, there is not, and cannot be, any evidence of in-band interference to the Air Force. Similarly, there is not any evidence of any out-of-band interference. Final Analysis has demonstrated that potential out-of-band interference to DMSP will decrease rather than increase in the 400.15-401 MHz bands because of its proposed change from O-QPSK to GMSK modulation, which provides additional protection to DMSP.²⁵ Thus there is no evidence whatsoever of increased interference either in-band or out-of band.
- Neither the Air Force Memorandum nor the NTIA March 18, 1998 Memorandum finds Final Analysis's proposed power level to be unacceptable and neither memorandum argues that the proposed 17.8 dBW power level should be denied.²⁶

Clearly, none of these materials could be relied upon by NTIA to conclude that Final Analysis's proposed modifications would create additional interference to government users in the 400.15 - 401.00 MHz band. Therefore, they also do not support a Commission determination that the power increase should be denied. Thus, again, NTIA has manipulated the record in a way that does not reflect a balanced and unbiased assessment of Final Analysis's proposed system. Therefore, NTIA's comments in its December 11, 1998 Letter should not be interpreted by the FCC as providing any support for a conclusion that Final Analysis's proposed increase in downlink power in the 400.15-401.00 MHz band should be denied.

NTIA's Comments Lack Candor and Are Misleading ; They Should Be Ignored

The success of the Commission's efforts to foster a competitive NVNG MSS industry depends upon the good faith cooperation of NTIA to coordinate time sharing in certain spectrum bands between commercial and government systems. The legitimate constituent interests of government systems were supposed to have been accommodated in the rulemaking process pursuant to which the time sharing rules and spectrum assignments were initially established. In

²⁴ Memorandum dated March 18, 1998 from Jim Vorhies, NTIA Office of Spectrum Management, to Steve Sharkey, FCC ("NTIA March 18, 1998 Memorandum").

²⁵ See, e.g., Letter dated June 15, 1999 from Aileen A. Pisciotta, Counsel to Final Analysis, to Roderick K. Porter, Acting Chief, International Bureau.

²⁶ The Air Force recommended that Final Analysis's License be conditioned on not producing pfd levels values greater than $-126 \text{ dBW/m}^2/4 \text{ kHz}$. However, Final Analysis notes that the internationally recognized limit of acceptability is actually $-125 \text{ dBW/m}^2/4 \text{ kHz}$. There is absolutely no justification for the Air Force or NTIA to recommend, or for the Commission to impose, any other measure. Final Analysis notes that Leo One Worldwide, Inc. proposes an even higher power level and pfd in the 400 MHz band, and has not been subject to any such pfd limitation. There is no basis for treating Final Analysis any differently.

the actual licensing process, the Commission, the industry, government users, commercial operators and the public all have the right to expect that NTIA will discharge its coordination duties in an objective, fair and transparent manner. This is not at all what has happened.

As explained here, it is plain that NTIA and NOAA have hidden, as well as misrepresented, critical facts and manipulated public procedures. With respect to potential interference in the 137-138 MHz band, NTIA has kept the Mitretek Report hidden for over a year. The Mitretek Report addressed an issue of fundamental importance in this proceeding. Yet, because it reached conclusions directly contrary to NTIA's desired result, NTIA went to extraordinary lengths to prevent it from seeing the light of day. NTIA did not tell Final Analysis about the report's conclusions, even though Final Analysis barraged NTIA with requests to discuss the exact same issues as were addressed in the report and tried to provide NTIA with the exact same technical information as the report recommended that NTIA obtain from Final Analysis. Final Analysis repeatedly requested meetings with NTIA and NOAA to discuss important technical details.²⁷ Indeed, in the summer of 1998, knowing that NTIA had engaged Mitretek to assess the potential interference issue, Final Analysis offered to submit to NOAA under claim of confidentiality exactly the same type of proprietary information regarding probability of failure in the 137-138 MHz band that it turns out Mitretek was recommending be obtained.²⁸ For convenience, a copy of the Final Analysis letter making this offer is also provided as Attachment D. NTIA also never informed the Commission of the existence of the report, despite the fact that in October 1998 the Commission expressly asked NTIA to comment on the same issues as were addressed in the report.

Most tellingly, the NTIA and NOAA initial responses to Final Analysis's FOIA Requests included only a nearly completely redacted version of the Report. The selectively redacted version, provided as Attachment B, misleadingly implied that Mitretek supported NTIA's bare footprint analysis, when the opposite is true. Only after Final Analysis lodged an appeal at higher levels within the Department of Commerce was the full text of the Report released.²⁹ Similarly with respect to the issue of potential interference in the 400.15-401.00 MHz band, NTIA mischaracterized the analysis that had been presented to it, asserting an increase in out-of-band interference, when there is not a shred of evidence to support such a conclusion.

²⁷ *E.g.*, Letter dated May 15, 1998 from Kathleen Wallman of Wallman Strategic Consulting, Inc., advisor to Final Analysis, to Larry Irving, Assistant Secretary of Commerce for Communications and Information; Letter dated June 4, from Nader Modanlo, Chairman and President of Final Analysis, to Gary Davis, Acting Director, NOAA/NESDIS Office of Systems Development; Letters dated June 4, 1998 and June 12, 1998 from Nader Modanlo, Chairman and President of Final Analysis, to William Hatch, Associate Administrator, NTIA; and Letters dated June 24, 1998 August 31, 1998 from Nader Modanlo, Chairman and President of Final Analysis, to Gary Davis, Acting Director, NOAA/NESDIS Office of Systems Development.

²⁸ *See, e.g.*, Letter dated June 24, 1998 from Nader Modanlo, Chairman and President of Final Analysis, to Gary Davis, NOAA/NESDIS (referencing independent NASA study of probability of failure of the Final Analysis system and asking NOAA to accept this and other information about probability of failure – the same information the Mitretek report identified as necessary for an accurate analysis).

²⁹ NTIA and NOAA have a statutory obligation under FOIA to disclose any technical analysis or factual information upon which they have relied to form the conclusions about the Final Analysis system that NTIA communicated to the FCC.

It is also clear that NTIA has manipulated government procedures to prevent facts which contradict the interests of its constituents from emerging. NTIA and its constituents had nothing to gain from an exchange of technical information that might show that Final Analysis's modified constellation would not cause additional potential interference. This further explains why NTIA steadfastly rebuffed all of Final Analysis's efforts to supply technical information. NTIA has consistently claimed, however, that its refusals to talk with Final Analysis about its proposed system merely reflected its policy to coordinate only licensed systems, ostensibly because it would be an inefficient use of public resources to discuss system designs that might not be licensed. However, there could not have been a more inefficient use of public resources than has been caused over the past two years as a result of NTIA's determination to avoid direct technical discussions with Final Analysis. Ultimately, the process has gone on longer and required the expenditure of more resources than would have been the case if Final Analysis and NTIA had exchanged detailed technical information at the very beginning.

NTIA, therefore, rejected offers of relevant information, and expressed conclusions to the Commission based upon incomplete and incorrect assumptions that tended to justify a desired result, including the imposition of an extraordinary and unwarranted monitoring condition on Final Analysis's License. The need to implement such a burdensome monitoring condition, which is inconsistent with and exceeds the requirements already included in the Commission's rules with NTIA's significant input, has never been justified by any technical analysis. Even after Final Analysis had filed a substantial rebuttal to the December 11, 1998 Letter³⁰ and had made a presentation directly to the head of NTIA about specific concerns raised and technical errors made in NTIA's December 11, 1998 Letter, NTIA refused to reconsider its analysis or correct misstatements it had placed on the record with the FCC.³¹ In fact, NTIA subsequently reaffirmed to the Commission that its conclusions had been based on the assumptions stated in the December 11, 1998 letter, knowing that those assumptions had been challenged and shown to be false.³²

NTIA's comments and actions with respect to Final Analysis's system have not been objective, fair and transparent. Rather they reflect the use by a government agency of its special status to obfuscate facts and hide the truth. This significantly undermines the important policy of promoting time sharing between government and commercial systems because it denies the Commission the factual information it requires to make fair and accurate licensing decisions in the public interest regarding commercial systems. NTIA's actions also violate the public trust that the government agencies charged with implementing the time sharing policy will do so in good

³⁰ See Letter dated December 24, 1998 from Aileen A. Pisciotto, Counsel to Final Analysis, to Regina Keeney, Chief, FCC International Bureau (reply to NTIA letter dated December 11, 1998).

³¹ Letter dated March 26, 1999 from Aileen A. Pisciotto, Counsel to Final Analysis, to Roderick K. Porter, Acting Chief, FCC International Bureau (summarizing presentation Final Analysis made to NTIA); Letter dated June 15, 1999 from Aileen A. Pisciotto, Counsel to Final Analysis, to Roderick K. Porter, Acting Chief, FCC International Bureau (responding to NTIA letter dated May 17, 1999).

³² Letter dated May 17, 1999 from William T. Hatch, Acting Associate Administrator, NTIA Office of Spectrum Management, to Roderick K. Porter, Acting Chief, FCC International Bureau.

faith.³³ Therefore, NTIA's comments on Final Analysis's system certainly must not be given any special deference. Indeed, because they lack any factual basis and in fact have been shown to be false, NTIA's comments should be completely disregarded.

Imposition of A Special Monitoring Condition Is Unjustified and Inconsistent With The Commission's Rules

The discussion above demonstrates that NTIA's insistence that a special monitoring requirement must be imposed to protect NOAA against potential interference from Final Analysis lacks any credibility. The plain fact is that NTIA singled Final Analysis out, without any reasonable basis, for the imposition of an extraordinary monitoring requirement not required by the Commission's Rules and not imposed on any other NVNG MSS licensee. Especially in consideration of the lack of any justification for it, the Commission should conclude that keeping an express monitoring condition in Final Analysis's License would be patently unreasonable and discriminatory.

Final Analysis has demonstrated that NTIA's monitoring demand is not required by, or consistent with, the *Second Round Report and Order*³⁴ or the Commission's Rules, which establish that interference monitoring is the responsibility, in the first instance, of government users and NTIA. In the case of interference, shut down is required only after NTIA notifies the Commission of the event and only if "an NVNG licensee cannot demonstrate to NTIA's and the Commission's reasonable satisfaction that it is not responsible for the interference."³⁵ Final Analysis has previously shown that the condition, which requires a much shorter and more stringent period for shutdown than demanded by the Commission's Rules, levied exclusively on Final Analysis in the event of interference with NOAA, imposes a significant, discriminatory and completely unjustified global monitoring burden on Final Analysis.³⁶ In fact, no source of, or justification for, this additional monitoring requirement was expressly cited in Final Analysis's License. It is clear nonetheless that it is based upon NTIA's comments on Final Analysis's October 1997 Conforming Amendment.³⁷

Subsection 25.259(c) of the Commission's Rules requires that each NVNG satellite time-sharing spectrum with NOAA must be capable of instantaneous shutdown on any sub-band upon

³³ See, e.g., Letter dated November 18, 1998 from The Honorable John D. Dingell, Ranking Member, U.S. House of Representatives Committee on Commerce, to Larry Irving, Assistant Secretary of Commerce for Communications and Information (commenting on the International Bureau's initial reliance on NTIA's informal comments: "In my view, the Government's coordination efforts should be based on complete information, and should not have occurred until after advance coordination with NTIA. This would ensure that the coordination effort would be based on the complete record, and the best available information regarding the potential for harmful interference.")

³⁴ *In the Matter of Amendment of Part 25 of the Commission's Rules to Establish Rules and Policies Pertaining to the Second Processing Round of the Non-Voice, Non-Geostationary Mobile Satellite Service*, Report and Order, 13 FCC Rcd 9111 (1997) ("*Second Round Report and Order*").

³⁵ 47 C.F.R. § 25.259(b).

³⁶ See Letter dated June 15, 1999 from Aileen A. Pisciotta, Counsel to Final Analysis, to Roderick K. Porter, Acting Chief, International Bureau.

³⁷ See NTIA December 11, 1998 Letter at p. 4.

command from a gateway, and that a satellite must be automatically turned off if, after 72 consecutive hours, no reset signal is received from the NVNG licensee's gateway earth station and verified by the satellite. This automatic shutdown requirement is triggered by a failed reset signal, not an interference event. There is simply no basis for NTIA's demand for an automatic shut down within four hours of an interference event.

As Final Analysis has previously demonstrated, given the fact that it is now clear that NOAA will not suffer any increased potential interference, the retention of such a monitoring requirement in Final Analysis's License would be arbitrary and capricious because it is contrary to the interference protection framework adopted in the *Second Round Report and Order*, is inconsistent with the Commission's Rules, is not imposed on other similarly situated NVNG licensees and has never been technically justified. Consequently, the monitoring requirement should be eliminated as a condition of Final Analysis's License and left instead as an issue for fact-based discussions in post-license coordination.

Approval of Final Analysis's Modified Constellation and Removal of the Monitoring Condition Are In the Public Interest

In light of the fact that the interference concerns expressed with respect to Final Analysis's modified constellation have been proven to be baseless, the public interest clearly requires that the modified constellation be approved and that the monitoring condition be removed from Final Analysis's License. During the pendency of Final Analysis's Application for Clarification and Review over the past year and a half, a significant amount of uncertainty has surrounded Final Analysis's License. Over the same period, the environment for the satellite industry, with a number of physical and financial failures, has grown increasingly harsh. It is now more important than ever that the government support the satellite industry. Certainly Final Analysis has demonstrated its commitment to succeed through significant investments and strategic partnerships. Government should do all it can to foster, not impede, such efforts to implement the robustly competitive NVNG MSS market the Commission has envisioned.

In this regard, Final Analysis is not requesting any special treatment, but just a straightforward and non-discriminatory application of existing rules and policies based upon a fair and accurate reading of the record. The Commission has previously acknowledged that, in the risky business of space, as long as no interference is caused to others, it is best to leave satellite system coordination to the licensees.³⁸ That is all Final Analysis asks here. No adverse impact from Final Analysis's modified constellation on government users or other commercial licensees has been demonstrated. Consequently, the only just and reasonable result in the public interest is for the Commission to fully license the constellation that Final Analysis has demonstrated is required to implement a competitive system, and leave the details of inter-system coordination to post-license discussions.

Final Analysis has repeatedly stated that it appreciates the crucial need to ensure that its system will not interfere with government systems, and that it is willing to cooperate fully with NTIA during post-licensing coordination to achieve this common goal. However, only after NTIA and Final Analysis have exchanged detailed technical information during post-licensing discussions will it be possible to assess the appropriateness of specific protective measures

³⁸ See, e.g., *Orbital Communications Corporation*, Order and Authorization, 13 FCC Rcd 10828 (1998), para. 16; *Leo One USA Corporation*, Order and Authorization, 13 FCC Rcd 2801 (1998), para. 23.

Mr. Donald Abelson
November 16, 1999
Page 13

beyond those identified in the *Second Round Report and Order*. This is the only efficient and effective way to address the concerns expressed by NTIA on behalf of government users.

Consequently, Final Analysis believes that the record dictates that the FCC should reject the comments made by NTIA, NOAA and any other party³⁹ regarding any possible increased potential interference to NOAA from Final Analysis's modified constellation. In view of the fact that Final Analysis's Application for Clarification and Review, filed on May 1, 1998, has been pending for over 16 months, Final Analysis respectfully requests that the Commission grant as soon as possible the relief Final Analysis has requested, including the approval of the proposed constellation changes and the removal of the monitoring condition from its license.

Thank you for your attention to this matter.

Sincerely yours,



Aileen A. Pisciotta
Todd Daubert

Counsel to
Final Analysis Communication Services, Inc.

cc: All parties
Attachments

³⁹ Final Analysis also notes that, to the extent that Leo One's opposition to Final Analysis's proposed system is similarly based upon an irrelevant footprint analysis of the impact on NOAA of Final Analysis's constellation, its should also be dismissed. Additionally, Final Analysis notes that it has conclusively demonstrated that Leo One's other claims regarding increased potential interference to Leo One in the 148-149.9 MHz uplink band are absolutely groundless. *See, e.g.*, Letter dated February 26, 1999 from Aileen A. Pisciotta, Counsel to Final Analysis, Inc., to Regina Keeney, Chief, FCC International Bureau (reply to Leo One pleading dated February 9, 1999); Letter dated January 21, 1998 from Aileen A. Pisciotta and Todd D. Daubert, Counsel to Final Analysis, to Regina Keeney, Chief, FCC International Bureau (reply to comments of Leo One filed December 23, 1998); Letter dated November 25, 1998 from Aileen A. Pisciotta and Todd D. Daubert, Counsel to Final Analysis, to Regina Keeney, Chief, FCC International Bureau (reply to comments of Leo One filed November 18, 1998); Letter dated November 5, 1998 from Aileen A. Pisciotta and Todd D. Daubert, Counsel to Final Analysis, to Regina Keeney, Chief, FCC International Bureau (reply to comments of Leo One dated October 22, 1998); Letter dated September 28, 1998 from Aileen A. Pisciotta and Todd D. Daubert, Counsel to Final Analysis, to Regina Keeney, Chief, FCC International Bureau (providing notice of *ex parte* presentation made by Final Analysis to FCC staff and other parties to this proceeding).

ATTACHMENT A

REPORT ON THE PROPOSED FINAL ANALYSIS SATELLITE SYSTEM AND ITS POTENTIAL INTERFERENCE WITH NOAA DOWNLINKS

Prepared by Mitretek Systems Inc.
August, 1998

SUMMARY

Mitretek Systems Inc. has reviewed and compared the potential for interference from the two satellite constellations proposed by Final Analysis Communication Services, Inc. into transmissions from NOAA Polar satellites in the 137 MHz band. The differences in the potential interference from the two Final Analysis systems depend on the detailed performance of the protection systems on the Final Analysis satellites and their exact failure probabilities *in a way that would cause harm to reception of the NOAA transmissions*. Based on the information that has been provided by Final Analysis to date, Mitretek believes that it is not possible to tell which of the initial or the revised satellite constellations would produce the greater level of interference. Additional data about the failure modes and probabilities, and the additional layers of protection on the Final Analysis satellites, need to be provided before this ambiguity can be resolved.

Mitretek recommends that NOAA develop a Memorandum of Agreement with Final Analysis, similar to the agreement that was made with Orbital Communications Corporation. This agreement should include a requirement that Final Analysis provide NOAA a detailed failure mode analysis and failure probability analysis, plus a statement of the average and maximum durations of any one interference event. Mitretek further recommends that NOAA request the Federal Communications Commission make the license for Final Analysis contingent upon the successful conclusion of this agreement.

Mitretek believes that, if such an agreement can be reached between NOAA and Final Analysis, the remaining interference that will occur between these two systems would be at a sufficiently low level to be acceptable to NOAA.

ANALYSIS

Mitretek has reviewed the documents provided by NOAA, describing the satellite constellations proposed by Final Analysis Communication Services, Inc. (FAISAT). Mitretek has analyzed the potential of the initial and revised FAISAT systems to cause interference to users of signals from NOAA polar satellites in the 137 MHz band and the possible changes to the probability of interference due to changing the number of satellites in the FAISAT system from 26 to 32.

Basic path loss calculations and the information provided by Final Analysis and its agents, indicate that in the bands shared with NOAA, a signal from a FAISAT at the edge of its footprint is large

enough to harmfully interfere with a signal from a NOAA satellite at the edge of its footprint. Mitretek has created computer simulations of the FAISAT and NOAA satellite systems using Satellite Tool Kit, a leading commercially available orbit analysis software package. These simulations show the amount of overlap of the footprints of each system for any specified period of time. Visual examination of the displays provided by STK show that footprints of at least four of the FAISAT satellites will always overlap the footprint of each NOAA satellite. Mitretek has calculated using simple geometric relations, that the overlap of the FAISAT footprint and the NOAA footprint will occur whenever the angular separation between the two satellites, as measured at the center of the Earth, is equal to or less than 49.31 degrees for a NOAA satellite at 870 km altitude, and 48.77 degrees at 833 km altitude. Each footprint was defined by the 5° elevation contour around the associated satellite.

Mitretek understands that it is the stated policy of Final Analysis that all FAISATs will be controlled to prevent such interference from occurring. Final Analysis states the computer control system on-board each FAISAT will prevent it from transmitting on a frequency band shared with NOAA when the footprints of the NOAA and FAISAT satellites overlap. The probability of failure of this control system, in a manner detrimental to users of the NOAA signals, and the duration of such a failure condition when it does occur, is therefore a critical unknown factor in assessing the impact of the FAISAT systems on the NOAA system.

The only analysis found that addressed the question of failure probability was contained in the letter from W. L. Pritchard & Co., Inc. to Final Analysis Communication Services, and dated 1 June 1998 (Pritchard). This letter was attached by Final Analysis as exhibit 3 to their Reply to Leo One's Opposition to Final Analysis's Application. (The Final Analysis document was not dated, but stamped by the Commission as received on June 2, 1998.) While Mitretek does not agree with the derivation of the expressions given in Pritchard for the probability of failure for the 26 satellite system and the 32 satellite system, Mitretek agrees with the final equations, i.e.:

The probability of one failure in the 26 satellite system is:

$$P_{26} = 26p + 78q$$

and the probability of one failure in the 32 satellite system is:

$$P_{32} = 32p + 32q$$

where: p = probability of a single failure of computer control or memory,
and: q = probability of a single failure of a transmitter in the "ON" mode when tuned to a frequency that would interfere with NOAA transmissions.

Mitretek considers these equations to be reasonable expressions for the probability of failure in the respective systems, if it is assumed that the probability of multiple simultaneous failures is negligibly small. However, no attempt was made to quantify the values of "p" and "q" for either

system, except that on page 4 of Pritchard, the following statement is made:

"The combined effect is a lower probability of failure, and therefore a reduced potential for interference, for the modified constellation of 32 satellites compared to the original constellation of 26 satellites." (Emphasis in original.)

This statement assumes that $(32 - 26)p < (78 - 32)q$, i.e., that $p < 7.67q$. No justification for this assumption was provided.

Mitretek notes that the definition of "q" as cited above, and in Pritchard, is for a failure of the transmitter in the "ON" position. In Mitretek experience, most failure analyses for transmitters only consider that a failure occurs when a transmitter is "OFF" for some reason when it is intended to be "ON". Most of the mechanisms commonly associated with transmitter failure are events that cause it to turn off, or reduce the output power significantly. Such events would not be considered failures in the context of causing interference to NOAA satellite users. The actual value of "q" will depend on the detail design of the control method for the FAISAT transmitters and therefore it may differ by a large ratio from the probability of a "normal" transmitter failure.

Based on general "good design" principles, Mitretek expects the "ON/OFF" control for the satellite transmitters would be a simple solid state switch in a low stress environment. It would be driven by the computer as directly as possible. The switch would have its circuitry organized so that the most probable failure mode of the switch itself would be to cause the transmitter to be switched "OFF". However, this would not be considered a "failure" in the context of causing interference to NOAA satellite users. It would also not be considered a failure (in this context) unless the frequency band of the FAISAT transmitter overlaps the frequency band that is being used by a NOAA transmitter on a nearby NOAA satellite. If this assessment is correct, the value of "q" could be some orders of magnitude less than the failure probability normally associated with transmitters.

On the other hand, "p" is the probability of a failure of the single computer and its memory on board each FAISAT. This parameter may also be different from the "normal" computer failure probability, as the only consideration in this analysis is interference to NOAA satellite users. However, no assurances have been made, and no data has been provided by Final Analysis to indicate that the value of "p" would be less than normal. Mitretek believes it is possible its value could be greater than normal.

Mitretek would expect that some percentage of the possible failure modes could include a computer seizure due to a corrupted program or stored data, in which case the transmitter would remain in the state to which it was set when the seizure occurred. This state could be one that would interfere with users of the NOAA satellites, until the computer was reset, or some other protective feature was activated to turn off such a transmitter. Mitretek notes that on page 57 of the Final Analysis Amendment, dated October 30, 1997, it is stated:

"In addition, with regard to the 72-hour reset requirement, Final Analysis's comments to the NPRM state that our satellite has several layers of protection that would detect a failed-on condition well in advance of 72 hours."

However, Mitretek has found no statements describing these "several layers of protection" or what impact they would have on the potential interference to NOAA satellites. If such protection is significant, Mitretek believes it should be included in the probability analysis.

From other statements made by Final Analysis on page 57 of their Amendment dated October 30, 1997, and on page 2 of Pritchard, Mitretek concludes that the calculations of the outage times required for each FAISAT to not interfere with NOAA signals will be made by their ground control computer system. The results will then be transmitted to each FAISAT and stored in its memory as a look-up table. If this is correct, Final Analysis should also take into account the probability of errors in the computation, transmission, and storage of these values, or state in their analysis that these probabilities have been examined and found to be negligibly small in comparison to the other failure probabilities.

Mitretek also notes that the non-interference statements made by Final Analysis and its agents refer only to the area within the 5° footprint of a NOAA satellite. We consider this a reasonable limit for most receiving locations. However, we must point out that some users are presently able to receive signals from the NOAA Polar satellite at elevations below 5° and that this ability will be lost when the FAISAT system begins operation.

The International Telecommunication Union has stated that the principle of sharing spectrum between multiple users will generally require some reduction of performance for the initial occupant of the newly shared band. It is not the intent of their regulations and recommendations to eliminate such performance reductions, but to control their scope and focus the effects on areas of time or location where a small percentage differential on the part of the initial user will make a large difference in the performance of the new user. Mitretek considers the 5° elevation limit to be an example of this process – a small and hard to quantify concession by the old user resulting in a significant improvement in the service provided by the new user. Mitretek has not attempted to quantify this effect, as gathering the required data is beyond the scope of our task. However, we believe this would apply to a small percentage of NOAA users and include it here only for completeness.

RECOMMENDATIONS

Mitretek recommends that Final Analysis be requested to:

1. Provide a detailed probability analysis of the failure modes for the transmitters and computers, including software, in ways that would interfere with transmissions from NOAA satellites to NOAA users.

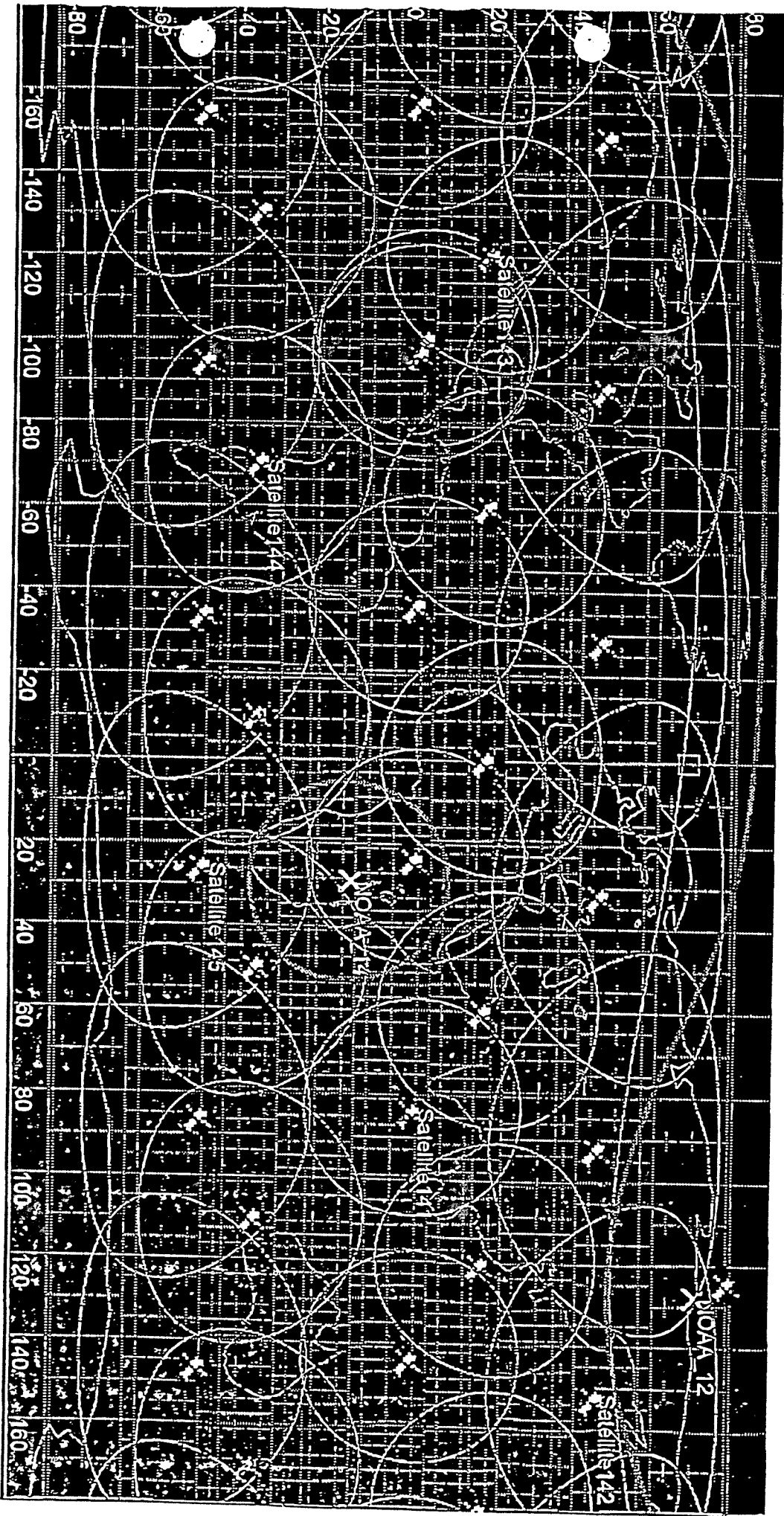
2. Describe the "several layers of protection" that they state will be provided on their satellites and include their effects in the overall failure probability analysis.
3. Evaluate the possibility of errors in the transmission of outage times to the FAISATs, and if significant, include this factor in the overall failure probability analysis.
4. Provide an estimate of the average and worst case durations for a transmitter in the "failed-on" condition.

If Final Analysis is not able to provide this information in a short time, Mitretek recommends that NOAA request that their license application include a memorandum of agreement, similar to that between NOAA and Orbital Communications Corporation. The memorandum of agreement with Final Analysis should include any outstanding items and the plans for their resolution, and when that resolution is achieved, the agreement would be modified accordingly. For any items that can be resolved in a short time, the initial agreement should include that resolution.

CONCLUSIONS

Mitretek believes the end result of a full analysis, including all aspects listed above will show that the probability of either FAISAT system interfering with the NOAA Polar system will be significantly less than 1%. Using reasonable assumptions for "p" and "q" it is possible that this probability could be less than 0.01%, and the difference between the two FAISAT systems could be of the same order of magnitude. Calculation of the actual values will require the additional data from Final Analysis as discussed above.

Mitretek therefore concludes that it is most probable that NOAA users will be able to tolerate the presence of the FAISAT system.

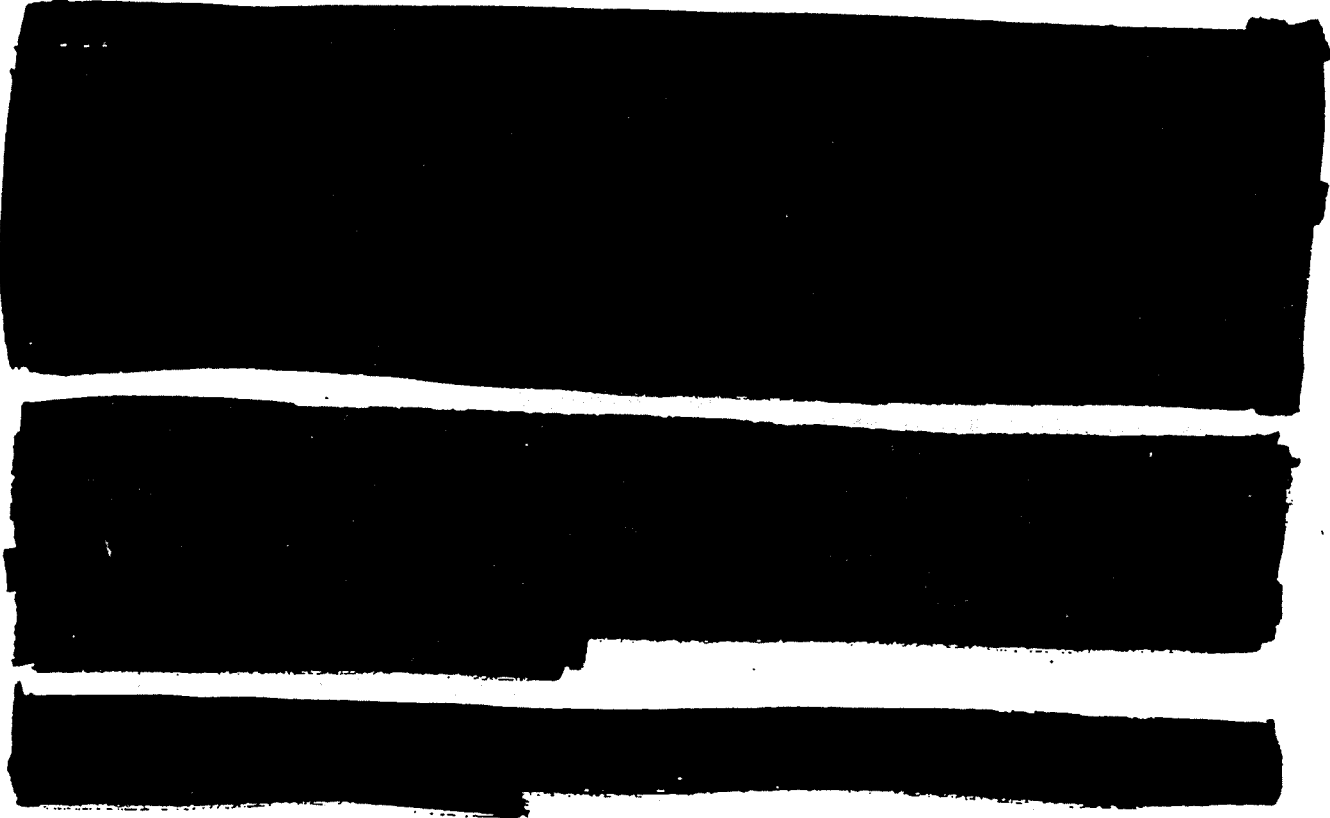


ATTACHMENT B

REPORT ON THE PROPOSED FINAL ANALYSIS SATELLITE SYSTEM AND ITS POTENTIAL INTERFERENCE WITH NOAA DOWNLINKS

Prepared by Mitretek Systems Inc.
August, 1998

SUMMARY



ANALYSIS

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Basic path loss calculations and the information provided by Final Analysis and its agents, indicate that in the bands shared with NOAA, a signal from a FAISAT at the edge of its footprint is large

enough to harmfully interfere with a signal from a NOAA satellite at the edge of its footprint. Mitretek has created computer simulations of the FAISAT and NOAA satellite systems using Satellite Tool Kit, a leading commercially available orbit analysis software package. These simulations show the amount of overlap of the footprints of each system for any specified period of time. Visual examination of the displays provided by STK show that footprints of at least four of the FAISAT satellites will always overlap the footprint of each NOAA satellite. Mitretek has calculated using simple geometric relations, that the overlap of the FAISAT footprint and the NOAA footprint will occur whenever the angular separation between the two satellites, as measured at the center of the Earth, is equal to or less than 49.31 degrees for a NOAA satellite at 870 km altitude, and 48.77 degrees at 833 km altitude. Each footprint was defined by the 5° elevation contour around the associated satellite.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Mitretek also notes that the non-interference statements made by Final Analysis and its agents refer only to the area within the 5° footprint of a NOAA satellite. We consider this a reasonable limit for most receiving locations. However, we must point out that some users are presently able to receive signals from the NOAA Polar satellite at elevations below 5° and that this ability will be lost when the FAISAT system begins operation.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

ATTACHMENT C

REC'D JUL 13 1999



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL ENVIRONMENTAL SATELLITE, DATA,
AND INFORMATION SERVICE
Washington, D.C. 20233

JUL 13 1999

Ms. Aileen A. Pisciotta
Counsel to Final Analysis Communication
Service, Incorporated
Kelley Drye & Warren
1200 19th Street, N.W.
Washington, D.C. 20036

Dear Ms. Pisciotta:

This letter is in response to your Freedom of Information Act (FOIA) request No. 1999-00361, dated May 20, 1999. As you were advised, NOAA exceeded the statutory period for response due to the complexity of your request. I apologize for this unavoidable delay which was due to the need for us to consult with other Department components and agencies.

You requested documents from the Department of Commerce including those related to scientific and engineering analyses supporting the National Telecommunications and Information Administration's (NTIA) evaluation of Final Analysis Communication Service, Incorporated's (Final Analysis) request for approval of an amendment to their satellite constellation pertaining to: 1) potential for increased interference into NOAA satellite ground receivers from an enhanced Final Analysis constellation of low-earth orbiting satellites, 2) the December 11, 1998 NTIA letter responding to the Federal Communication Commission's letter dated October 27, 1998, and 3) other documents related to or relied upon to support various NTIA statements or conclusions.

Documents responsive to your request are enclosed. Some of the documents have been redacted because the information was not responsive to your request, or the information is exempt from disclosure in accordance with 5 U.S.C. § 552(b)(5). Exemption 5, as this section is commonly referred, provides for the protection of information and documents which are determined to be either predecisional or part of the Agency's deliberative process. NOAA has withheld certain documents or portions of documents under U.S.C. § 552(b)(5) as predecisional or privileged. NOAA also identified certain NTIA documents that may be responsive to your request. In accordance with the Department of Commerce's treatment of documents originating from other agencies, we have forwarded those documents to NTIA and requested that they respond directly to your request.



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In accordance with the FOIA fee schedule (15 C.F.R. § 4.9), you were charged as a commercial requester. The costs associated with the processing of your request total \$2500.00. This amount includes the Agency's search, review, and reproduction of your requested information. Please make your check payable to the Treasury of the United States, and forward the check to:

Barbara D. Brooks, NESDIS FOIA Officer
DOC/NOAA/NESDIS, E/MO
Federal Office Bldg. No.4, Room 2051
5200 Auth Road
Suitland, Maryland 20746-4304

This concludes the initial determination by NOAA. You have the right to administratively appeal our decision to the Department of Commerce within 30 calendar days of the date of this letter. The appeal must include a copy of your request, this letter, a statement of the reasons why the records requested should be made available, and why the initial denial was in error. Both the letter and the envelope should be clearly marked "Freedom of Information Act Appeal" in accordance with 15 C.F.R. § 4.8. The appeal must be addressed to:

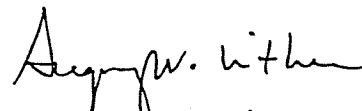
U.S. Department of Commerce
Office of Assistant General Counsel
for Administration, Room 5882
14th Street and Constitution Avenue, N.W.
Washington, D.C. 20230

Both the letter and the envelope should be clearly marked "Freedom of Information Act Appeal" in accordance with 15 C.F.R. § 4.8.

If you have any questions regarding the processing of your request, please contact Barbara Brooks at 301-457-5407.

Thank you for your patience regarding this request.

Sincerely,



Gregory W. Withee
Assistant Administrator for
Satellite and Information Services

cc: NTIA - Kathy Smith

ATTACHMENT D



FINAL ANALYSIS COMMUNICATION SERVICES
2701-F PHILADELPHIA COURT
LANHAM, MARYLAND, 20706-4400
301-459-4100
FAX 301-459-0101

June 24, 1998

Mr. Gary Davis
NOAA NESDIS
4401 Suitland Road
Suitland, MD 20746

Ref. No. FACS-98-154

By Fax 301.457.5722

Dear Mr. Davis:

I want to thank you for the active role that NOAA played in developing a clarification for the FCC of the incomplete status of the federal agencies's views on our FAISAT constellation modifications. The letter sent by NTIA was accurate and fair, I believe, and I hope that it is considered by the FCC with the gravity it deserves.

I understand that NOAA has begun reviewing the recent filings and the earlier NOAA analysis, and that this work is being performed by MiterTech. I want to thank you for promptly moving toward this step, which I understand involves extra work by the consulting firm, so that if, as expected, the FCC requests further views, development and transmission of those views can be given expeditiously.

As I have mentioned, I continue to believe that it is important that Final Analysis be involved in this analysis in order to provide the proper inputs and clarify assumptions. The analysis will need more information than is on the record as to types and grades of satellite components used operational assumptions, level of redundancy, and so forth -- issues which relate directly to understanding the satellite communications payload's reliability and statistically predicted failure rate. Although much information is contained in the pleadings, our work with Lockheed-Martin Management & Data Systems, ITT, and Pritchard and Co. have shown us that independent analysis still will require further technical details and assumptions which might not be clear in the pleadings and which we can provide. It is for this reason that we have requested that NOAA work with us on an informal technical basis in an interactive dialogue whereby we can provide additional information, explain or clarify equipment type and robustness as well as operational methods, etc.

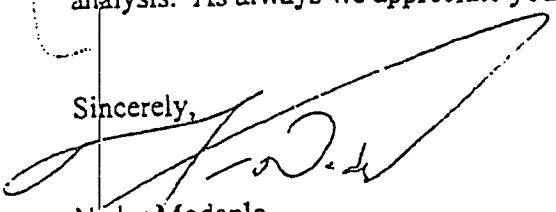
To give you an example of the kind of highly relevant information we could provide, as part of a recent program we have had the opportunity to work closely with the NASA Goddard Space Flight Center's Integrated Mission Design Center (IMDC). IMDC did a detailed technical review of the reliability of various elements of the satellite bus, including the communication payload. In a report dated March 26 of this year, NASA reported that the "FAI COMM payload

Mr. Gary Davis
Page Two

is very robust even for [a] 7 year mission. For one COMM system R(7) = 0.999997." R(7) means reliability over the satellite's projected seven year commercial life.

There is certainly other information we can provide as well, and I do feel a technical meeting prior to the conclusion of the MiterTech analysis would result in a more complete and thorough analysis. As always we appreciate your consideration.

Sincerely,



Nader Modanlo
Chairman, President

cc: Mr. William Hatch
Mr. David McGinnis

CERTIFICATE OF SERVICE

I, Beatriz Viera, hereby certify that a true and correct copy of the foregoing **Letter to Donald Abelson**, on behalf of Final Analysis Communication Services, Inc., was delivered by hand or regular mail this 16th day of November 1999, to the individuals on the following list:

Chairman William E. Kennard*
Federal Communications Commission
Portals – Room A302
445 12th Street, S.W.
Washington, D.C. 20554

Mr. Daniel Harrold*
Office of General Counsel
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Commissioner Gloria Tristani*
Federal Communications Commission
Portals – Room C302
445 12th Street, S.W.
Washington, D.C. 20554

Ms. Anna M. Gomez*
Deputy Chief, International Bureau
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Commissioner Harold W. Furchtgott-Roth*
Federal Communications Commission
Portals – Room B201
445 12th Street, S.W.
Washington, D.C. 20554

Mr. Thomas Tycz*
Chief Satellite and RadioCommunications
Division
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Commissioner Susan Ness*
Federal Communications Commission
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Washington, D.C. 20554

Ms. Cassandra Thomas*
Deputy Chief, International Bureau
Federal Communications Commission
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Washington, D.C. 20554

Commissioner Michael K. Powell*
Federal Communications Commission
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Mr. Harold Ng*
Chief, Satellite Engineering Branch
Satellite and RadioCommunication Div.
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Mr. Christopher J. Wright*
General Counsel
Federal Communications Commission
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Mr. Alex Roytblat*
Satellite and RadioCommunication Div.
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Federal Communications Commission
445 12th Street, S.W.
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Mr. William T. Hatch
Associate Administrator
Spectrum Management
U.S. Department of Commerce
NTIA – Room 4099
14th & Constitution Avenue, N.W.
Washington, D.C. 20230

Kathy D. Smith
U.S. Department of Commerce
NTIA – Room 4713
14th & Constitution Avenue, N.W.
Washington, D.C. 20230

James Vorhies
U.S. Department of Commerce
NTIA – Room 4076
14th & Constitution Avenue, N.W.
Washington, D.C. 20230

Stephen Goodman, Esq.
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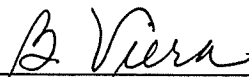
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