ALPHA LYRACOM
SPACE COMMUNICATIONS

VIA FACSIMILE 011-813-3344 0786

July 17, 1991

Mr. Junkyo Fujieda
Managing Director
CSK Corporation
Tokyo 163, Japan

Dear Mr. Fujieda:

I am writing to further define Rene's and my thoughts on the ownership structure of the Global Satellite Company. This letter, to some extent, duplicates previous correspondence but, I hope, clarifies our position.

Obviously, this letter is not intended to replace or supplement our private placement memorandum, or to constitute an offer of any kind. It is, rather, an informal outline of our thoughts as of today.

Preferred Ownership Structure

Global Satellite Company Limited Partnership (GSC): Initially, the GSC would be structured as a Limited Partnership. The GSC would (subject to U.S. FCC consent) own all the existing business of pan American Satellite and Alpha Lyracom, all the new business of the Global Satellite Company, and all the assets, including, initially, 4 satellite: PAS 1, 2, 3 and 4.

Ownership of GSC: Initially, GSC will be owned by Rene Anselmo (or by a corporation controlled by him), as General Partner, and by a group of Strategic Limited Partners (Strategic Partners). As additional equity investments are required, additional Strategic Partners would be introduced. The GSC company will raise $225 million in new equity from its Strategic Partners. The number of Strategic Partners has been assumed to be either 4 or 3.

Based on our current discussions with interested parties in Europe, Japan, Asia, and America, for purposes of this analysis, we have assumed 3 Strategic Partner Groups at $75 million each. Ownership of GSC would be allocated approximately as follows, assuming each Strategic Partner invests $75 million of equity.

No. of Strategic Partners	Total Amount Invested by Strategic Partners	General Partner Interest	Total Strategic Partner Interest	Total Equity Not Used
1	$ 75 million	50%	16.67%	33.33%
2	$150 million	50%	33.34% (16.67% each)	16.66%
3	$225 million	50%	50% (16.67% each)	-0-

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Control of GSC:

The General Partner shall be responsible for day to day operating decisions of GSC. Each Strategic Partner will be responsible (subject to coordination with the General Partner) for marketing and operating decisions for its operating company in the Strategic partner's Market Regions (see Analysis of Japanese Strategic Partner Rights, attached). Major GSC decisions shall be submitted to a Partnership Committee, which shall consist of one representative selected by each Strategic partner and four representatives selected by the General partner (if there are three investors) or 5 selected by the General Partner, if there are four Strategic partners. Most major decisions shall require approval by a simple majority of the representatives, but some special decisions, e.g., sale of satellite, purchase of new satellites, shall require approval by either seven of the nine representatives (Super Majority Decisions). (All of these provisions would be subject to FCC approval; the FCC imposes rules regarding control of its licensees.)

Conversion of Corporate Structure for Initial Public Offering (IPO):

The General Partner may elect to convert the partnership to a corporate ownership structure for the purpose of consummating an initial public offering or other business reasons. At such time, each partner would be granted common stock in the corporate entity that owns the business of the GSC. The ownership of common stock in this corporation held by each partner would be equal to the equity percentage held by the Partners in the partnership prior to conversion. After the initial public offering, it is our intention that control of the Corporation would remain essentially as described in "Control of GSC" above, and the Board of Directors will consist of five directors selected by the General Partner (Mr. Anselmo) and four directors selected by the Strategic Partners. Purchasers of stock in the initial public offering will receive non-voting shares to the extent allowed by law; it is possible that, as an alternative, two classes of stock would be created, with our initial partners voting rights different from the public.

Strategic Partner Exist Strategy:

Strategic Partners will be able to realize a return on capital on their investment in two ways:

i) After an agreed period of time, resell a portion of their GSC interest to other investors (with a right of approval and right of first refusal granted to the GSC); or

ii) sell a portion of their shares in an initial public offering of GSC, subject to legal or underwriter requirements that may restrict such sales for a period of time.

Mr. Anselmo plans to convert GSC to a publicly traded corporation when it is appropriate to do so, and after consultation with the Partners, in order to provide capital appreciation and liquidity for himself and the

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Strategic Partners. The timing of the initial public offering will depend on a number of factors which are not easily predicted, including GSC profitability, cash needs for new satellites, opportunities to buy complementary business, stock market conditions, etc.

I hope the above gives you a better understanding of our current thinking on this subject.

Sincerely,

Frederick A. Landman
President

FAL:mf

cc: T. Matsumoto, C. Itoh
G. Gorman, DLJ

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Analysis of Japanese Strategic Partner Marketing Rights

Introduction

A Strategic Partner will "own" those Global Satellite Company (GSC) customers using GSC services in its Market Regions. Thus, the Japanese Strategic Partner shall receive revenues from all companies that use GSC services in Japan. The percentage allocation of revenues, however, will depend on who markets the services. Each Strategic Partner shall receive two forms of revenues i) an Agent's Fee on GSC space segment revenues and ii) value added services revenue for services marketed by the Strategic Partner.

Agent's Fee on GSC Space Segment Revenues

The Agent's Fee has two components:

i) Market Ownership[(1)] = 30%: Each Strategic Partner will receive 30% of the Agent's Fee for GSC space segment revenues derived from circuits in the Strategic Partner's Market Region. Thus, the Japanese Strategic Partner will receive 30% of the Agent's Fee for the Japanese leg of all GSC circuits connected to Japan, whether or not the user is headquartered in Japan or the Japanese Strategic Partner marketed the services to the user. For circuits that extend outside a Strategic Partner's Market Region, the Strategic Partner would be entitled to a proportionate interest in the GSC space segment revenues based on the fraction of the circuits within the Strategic Partner's Market Region.

ii) Contract Ownership = 70%: The Strategic Partner that markets GSC services to a customer will be entitled 70% of the Agent's Fee for GSC space segment revenues derived from the customer. Thus, the Japanese Strategic Partner will be entitled to 70% of the Agent's Fee for all GSC services that it sells, whether or not the customer is Japanese or the services are sold in Japan. To qualify as the marketer of GSC services, the Strategic Partner shall be responsible for marketing, selling, contracting and administering the services for the customer. In cases where a Strategic Partner and GSC or another Strategic Partner jointly market GSC services, the Contract Ownership percentage would be shared equally between the Strategic Partner and GSC.

Table 1 - Allocation of Space Segment Agent's Fee

		Share of Space Segment Agent's Fee					
		Japanese Strategic Partner			GSC or Other Strategic Partner		
Company That Markets GSC Services	Country Where GSC Services Provided	Contract Ownership	Country Ownership	Total	Contract Ownership	Country Ownership	Total
Japanese Strategic Partner	Japan	70%	30%	100%	0%	0%	0%
Japanese Strategic Partner	Outside Japan	70%	0%	70%	0%	30%	30%
GSC or Other Strategic Partner	Japan	0%	30%	30%	70%	0%	70%
GSC or Other Strategic Partner	Outside Japan	0%	0%	0%	70%	30%	100%

(1) Initially some market regions will not be assigned to Strategic Partners, GSC or local marketing agents. Until these regions are assigned, any party that markets GSC services in these regions may be entitled to the Country Ownership percentage of the Agent's Fees.

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The Agent's Fee percentages will be established initially by Alpha Lyracom. Subsequent modifications will require approval by a super majority of the board of directors of GSC. The Agent's Fee represents the difference in the price of space segment charged to Strategic Partners and the price charged to other bulk customers (the Wholesale Price). Table 2 below gives a preliminary indication of the Agent's Fee for a variety of services. The table will be refined after continued study of market conditions. The wholesale space segment cost may differ for different regions or routes.

Table 2 - Preliminary Agent's Fees

GSC Service	Agent's Fee	Example Wholesale Space Segment Cost	Agent's Fee
Transponder Sale	10%	$15.4 million for post-launch purchase of C Band transponder	$1,400,000
Transponder Full Term Lease	10%	$3.08 million/year for post-launch of Ku Band transponder	$280,000/year
Corporate Digital Circuits	25%	$254,400/year for full duplex 1.544 Mg circuit (small earth station price)	$50,880/year

Value Added Services Revenue Sharing

Alpha Lyracom expects that the Agent's Fees revenues will represent a small portion of the overall revenues to be generated by each Strategic Partner. Table 3 below identifies some of the additional revenue generating opportunities available to the Strategic Partners.

Table 3 - Potential Value Added Services to be Marketed by Strategic Partners

	Digital Networks	Video Services
Equipment Sales	-earth stations -VSAT's -network interfaces -video conferencing station -digital switching systems -telephone system infrastructure	-earth stations -DBS terminals -satellite news gathering vehicles -video production facilities -cable system infrastructure
Services	-network design -network monitoring -network billing/reporting -custom network software -equipment maintenance -equipment lease financing -shared hubs	-equipment maintenance -satellite news gathering vehicle rentals -equipment lease financing

The Strategic Partner marketing GSC services may want to provide most or all the value added services within the Strategic Partner's Market Regions and would thereby be entitled to the value added service revenues generated. In cases where the services go beyond the Strategic Partner's Market Regions, the value added service revenues may be shared with other parties. For instance, the European Strategic Partner is not expected to establish a full marketing and service organization in Japan just to service a limited number of European customers there. In this case the Japanese Strategic Partner could provide the value added services under a revenue sharing agreement between the two Strategic Partners. Such revenue sharing agreements will be established as needed by the Strategic Partners but will be subject to approval by GSC.

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Strategic Partner Competitive Advantages

Alpha Lyracom will not grant exclusive marketing rights to any Strategic Partners but will grant financial, marketing and other rights that ensure a substantial competitive advantage for each Strategic Partner.

Listed below are the major competitive advantages to be enjoyed by the Strategic Partners:

i) Agents Fee Structure: The Strategic Partner's cost for GSC space segment will be 10% to 25% less than for competitors because of the Agent's Fee payable to the Strategic Partner. In a competition to provide services to a Japanese customer, the Japanese Strategic Partner should be successful unless the competition offers significantly superior value added services. In any event, the Japanese Strategic Partner would receive the Agent's Fee.

ii) Global Buying Power: Some services and equipment, such as hubs, may be bought on a global basis permitting each Strategic Partner to benefit from quantity price discounts.

iii) Prioritiy Marketing Agreements: GSC shall enter into Priority Marketing Agreements with each Strategic Partner. The Priority Marketing Agreement will provide for the following:

- All marketing leads received by GSC shall be released to the Strategic Partner that controls the Market Region.
- GSC will provide technical and marketing support to Strategic Partners. Competitors will not receive this support.
- Strategic Partners that offer services outside of their region shall give the local Strategic Partner first right to provide these services, if subcontracted.
- All Strategic Partners will be able to use GSC's operating partners to fulfill customer service needs in regions where no Strategic Partners are responsible.
- All GSC advertising shall list Strategic Partner contacts for each Market Region.

iv) GSC Board/Staff Representation: Each Strategic Partner shall participate in the preparation of GSC Plans and new service offerings. The Strategic Partners will be better informed than competitors and will be better able to influence GSC than competitors. For instance, scarce capacity will be made available first to Strategic Partners.

Selection of Strategic Partner for Each Market Region

Each potential Strategic Partner will submit a list of the Market Regions in which it would like to market GSC services and a description of the marketing resources it has or plans to have in each of the Market Regions. Alpha Lyracom will allocate the Market Regions based on the resources offered by potential Strategic Partners and also based on the terms and conditions of the Strategic Partner's proposed equity investment in GSC. In some Market Regions GSC may directly market services and in other regions GSC may enter into marketing agreements with strong local telecommunication companies. Exhibit 1 lists such marketing agreements that Alpha Lyracom has in place for PAS I services.

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The following is a list of the Market Regions that may be allocated to the Strategic Partners.

Table 4 - GSC Market Regions

Market Region	Potential Strategic Partner
Europe	European Strategic Partner
North America	GSC or U.S. Strategic Partner
Central and South America	GSC or open
Africa	Open
Middle East	Open
Eastern Europe	Open
U.S.S.R.	Open
South East Asia	Asian Strategic Partner
Japan	Japanese Strategic Partner
Korea	Asian Strategic Partner
China	Open
Sub Continent	Open
Oceana	Open

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EXHIBIT 1

Operating Agreements for PASI

Country	Entity	Services
UK	British Telecommunications PLC (Heads of Agreement)	All private telecom services.
Brazil	Victori	All private telecom services.
Ecuador	Instituto Ecuatoriano de Telecommunicaciones (IETEL)	All private telecom services.
Costa Rica	Radiografica Costarricense S.A. RASCA	All private telecom services.
Bahamas	Bahamas Telecommunications Corporation (BATELCO)	All private telecom services.
Haiti	Telecommunications d'Haiti (TELECO)	All private telecom services.
Honduras	Empresa Hondurena de Telecomunicaciones	All private telecom services.
Colombia	Empresa Nacional de Telecomunicaciones	Private point-to-point or point-to-multipoint integrated digital services.
Italy	Telespazio S.p.A.	All private telecom services.
Netherlands Antilles	Antilles Telecommunication Administration	All telecom services
Curazao	Landsradio	All private data services
Panama	Intel	All private data services
Germany (FDR/GDR)	Infoware GmbH	Al private telecom services
Guatemala	EMPRITEL, S.A.	All private data services
	Contingent on authorization from Guatel	
Chile	VSAT Telecomunicaciones, S.A.	All private telecom services
Guatemala	Industria Telepuerto de Guatemala 90, S.A.	All private data services
	Contingent on authorization from Guatel	
Costa Rica	Industria Telepuerto Ican S.A. DATAPORT	Private point-to-point IDS services

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ALPHA LYRACOM
MEMORANDUM

Douglas Goldschmidt
Vice President
Market Development

Telephone: 203-622-6664
Facsimile: 203-622-9163

July 13, 1991

TO: Fred Landman, Tom Whitehead

RE: Herb Walker and Pacific Marketing

Herb Walker called today to ask whether we might be able to use him for some marketing/sales services. He particularly noted his contacts in the Pacific.

I think that we might be able to use Herb. As you know, we've just been authorized to act as an Intelsat carrier. I've received scattered inquiries about service to Asia over the past month, and Jack has periodically indicated that he could probably sell some Asian video services, particularly for connection with PAS-1. It would be useful to start exploring the market for Asian data and video services by having Herb market Alpha Lyracom provided video and IBS circuits between the U.S. and Asia with the clear idea that the circuits will migrate to PAS-3 in 1994.

Naturally, we will have to arrange connecting rights for IBS and video services in Asia, particularly in Japan, Hong Kong, Korea, and Singapore. However, as both video IBS are already authorized Intelsat services in these countries, arranging the connecting rights will be relatively simple. I believe that we can make the necessary arrangements for connecting rights in the normal course of our Asian travel.

Herb will work for us on a split retainer/commission basis. Hence, he won't cost us very much. I think that, looking forward to 1994, and also building confidence among our investors, we should start the Asian marketing as soon as possible.

Rather than build any new facilities right away, we should have Herb identify potential earth station facilities on the west coast which can access Intelsat's POR capacity. We can then negotiate some type of lease arrangement for the services.

Let's discuss this further during the week.

Analysis of Japanese Strategic Partner Marketing and Service Rights

Concept

A Strategic Partner will "own" those Global Satellite Corporation (GSC) customers headquartered in its Market Regions or using GSC services in its Market Regions. Thus, the Japanese Strategic Partner shall receive revenues from all companies that use GSC services in Japan and from Japanese companies that use GSC services anywhere. The percentage allocation of revenues however, will depend on who markets the services and whether the services are provided in Japan or elsewhere. Each Strategic Partner shall receive two forms of revenues i) an Agent's Fee on GSC space segment revenues and ii) value added services revenue on services marketed by the Strategic Partner.

Satellite Segment Agent's Fee

The Agent's Fee on GSC space segment revenues has three components:

i) Market Ownership[(1)] = 20%: Each Strategic Partner will receive 20% of the Agent's Fee for GSC space segment revenues derived from circuits in the Strategic Partner's Market Region. Thus the Japanese Strategic Partner will receive 20% of the Agent's Fee for the Japanese leg of all GSC circuits connected to Japan, whether or not the user is located in Japan or the Japanese Strategic Partner marketed the services to the user. For circuits that extend outside a Strategic Partner's Market Region the Strategic Partner would be entitled to a proportionate interest in the GSC space segment revenues based on the fraction of the circuits within the Strategic Partner's Market Region.

ii) Company Ownership[(1)] = 20%: Each Strategic Partner will receive 20% of the Agent's Fee for GSC space segment revenues derived from circuits used by companies headquartered in the Strategic Partner's Market Region. Thus, the Japanese Strategic Partner will receive 20% of the Agent's Fee for all GSC space segment revenues from Japanese companies, whether or not the services are sold in Japan or marketed by the Japanese Strategic Partner. The country where the customer is headquartered is a guideline only for the company ownership test. For example, while a corporation may be headquartered in the U.S., its Asian subsidiary with a head office in Japan may be owned by the Japanese Strategic Partner.

iii) Contract Ownership = 60%: The Strategic Partner that markets GSC services to a customer will be entitled 60% of the Agent's Fee for GSC space segment revenues derived from the customer. Thus the Japanese Strategic Partner will be entitled to 60% of the Agent's Fee for all GSC services marketed by the Japanese Strategic Partner, whether or not the customer is Japanese, or the services are sold in Japan. To qualify as the marketer of GSC services, the Strategic Partner shall be responsible for marketing, selling, contr[illegible] and administering the services for the customer. In cases where a Strategic Partner an[illegible]C jointly market GSC services, the Contract Ownership percentage would be shared equally between the Strategic Partner and GSC.

Table 1 on the following page summarizes the allocation of the Agent's Fee.

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To Tom Whitehead | From Kathy
Co. Quest | Co. DLJ
Dept. | Phone # 212-504-3945
Fax # 213-417-3608 | Fax # 504-4519

(1) Initially some market regions will not be assigned to Strategic Partners, GSC or local marketing agents. Until these regions are assigned, any party that sells GSC services in these regions may be entitled to the Company Ownership percentage and Market Ownership percentage of the Agent's Fees.

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Table 1 - Allocation of Space Segment Agent's Fee

Company That Markets GSC Services	Country Where Customer Company Headquartered	Country Where GSC Services Provided	Share of Space Segment Agent's Fee							
			Japanese Strategic Partner				GSC or Other Strategic Partner			
			Contract Ownership	Company Ownership	Country Ownership	Total	Contract Ownership	Company Ownership	Country Ownership	Total
Japanese Strategic Partner	Japan	Japan	60%	20%	20%	100%	0%	0%	0%	0%
Japanese Strategic Partner	Outside Japan	Japan	60%	0%	20%	80%	0%	20%	0%	20%
Japanese Strategic Partner	Japan	Outside Japan	60%	20%	0%	80%	0%	0%	20%	20%
Japanese Strategic Partner	Outside Japan	Outside Japan	60%	0%	0%	60%	0%	20%	20%	40%
GSC or Other Strategic Partner	Japan	Japan	0%	20%	20%	40%	60%	0%	0%	60%
GSC or Other Strategic Partner	Outside Japan	Japan	0%	0%	20%	20%	60%	20%	0%	80%
GSC or Other Strategic Partner	Japan	Outside Japan	0%	20%	0%	20%	60%	0%	20%	80%
GSC or Other Strategic Partner	Outside Japan	Outside Japan	0%	0%	0%	0%	60%	20%	20%	100%

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The Agent's Fee will be established by GSC and approved by a super majority of the board of directors of GSC. It represents the difference in the price of space segment charged to Strategic Partners (the Wholesale Price) and the price charged to other customers (the Retail Price). Table 2 below gives a preliminary indication of the Agent's Fee for a variety of services. These will be refined after negotiations with Strategic Partners and continued study of the market place.

Table 2 - Preliminary Agent's Fee Factors

GSC Service	Agent's Fee	Retail Space Segments Cost	Agent's Fee
Transponder Sale	10%	$11.1 million for early purchase of C Band transponder	$1,110,000
Transponder Full Term Lease	10%	$2.22 million/year for early lease of Ku Band transponder	$220,000/year
Occasional Video	20%	$1000/hour for spot C Band Transponder	$200/hour
IDS	40%	$48,000/year for duplex 64 kbs circuit	$38,400/year
VSAT	40%	$9,600/year for each VAT	$884/year
PSTN Circuit	40%	$33,600/year for duplex 64 kbs PSTN Circuit	$13,440/year

Value Added Services Revenue Sharing

Alpha Lyracom expects that the satellite segment revenues will represent a small portion of the overall revenues to be generated by each Strategic Partner. Table 3 below identifies some of the additional revenue generating opportunities available to the Strategic Partners.

Table 3 - Potential Value Added Services to be Marketed by Strategic Partners

	Digital Networks	Video Services
Equipment Sales	-earth stations -VSAT's -network interfaces -video conferencing station -digital switching systems	-earth stations -DBS terminals -satellite news gathering vehicles -video production facilities -cable system infrastructure
Services	-network design -network monitoring -network billing/reporting -custom network software -equipment maintenance -equipment least financing -shared hubs	-equipment maintenance -satellite news gathering vehicle rentals -equipment least financing

much or

In general, the Strategic Partner marketing GSC services will also provide all the value added services. Hence, the Strategic Partner will be entitled to 100% of the value added service revenues generated. In certain cases this may not be the case. For instance, the European Strategic Partner is likely to want the Japanese Strategic Partner to provide value added services to European companies using GSC services in Japan. The [illegible] service a limited number of European customers there. In this case the Japanese Strategic Partner would provide the value added services under a revenue sharing agreement between the two Strategic Partners. Such revenue sharing agreements will be established as needed by the Strategic Partners but will be subject to approval by GSC.

Non-Exclusive Nature of Rights

Alpha Lyracom is not granting exclusive marketing rights to any Strategic Partners as it is possible that they may take advantage of a monopoly position to set excessive service pricing and provide reduced service offerings. However, each Strategic Partner will always receive a share of the Agent's Fee for GSC space segment sold in the Partner's Market Region even if a competitor sells the value added services. The following two examples outline the competitive advantage the Japanese Strategic Partner will enjoy:

i) Competition with a company that is not a GSC Strategic Partner: If a local telecommunication company elected to buy satellite capacity from GSC and remarket the services in Japan, its cost for the space segment would include an Agent's Fee to the Japanese Strategic Partner. Hence, the competitor would pay up to a 40% premium (for digital services) for GSC space segment over what the Japanese Strategic Partner would pay. The competitor would only be competitive if it had significantly superior value added services.

ii) Competition with a GSC Strategic Partner: If, for example, the European Strategic Partner attempted to compete in Japan with the Japanese Strategic Partner then GSC space segment cost for the European Strategic Partner would be up to 16% more expensive (for digital services) than for the Japanese Strategic Partner. Alpha Lyracom expects such competition would only make sense for very specialized service offerings not offered by the Japanese Strategic Partner. In any event, such competition will only be permitted if approved by a super majority of the board of directors of GSC.

Selection of Strategic Partner for each Market Region

Each potential Strategic Partner will submit a list of the Market Regions in which it would hope to market GSC services and a description of the marketing resources it has or plans to have in each Market Region so requested. Alpha Lyracom will allocate the Market Regions based on the resources offered by potential Partners and also based on the terms and conditions of the Partner's proposed investment. In some Market Regions GSC may directly market services and in other regions GSC may enter into marketing agreements with strong local telecommunication companies. Exhibit 1 lists such marketing agreements that Alpha Lyracom has in place for PAS I services. The following is a list of the Market Regions that may be allocated to the Strategic Partners.

Market Region	Potential Strategic Partner
Europe	European Strategic Partner
North America	GSC or U.S. Strategic Partner
Central and South America	GSC or open
Africa	Open
Middle East	Open
Eastern Europe	Open
U.S.S.R.	Open
South East Asia	Asian Strategic Partner
Japan	Japanese Strategic Partner
Korea	Asian Strategic Partner
China	Open
Sub Continent	Open
Oceana	Open

EXHIBIT 1

Operating and Maintenance Agreements for PASI

Operating Agreement

Country	Entity	Services
UK	British Telecommunications PLC (Heads of Agreement)	All private telecom svces.
Ecuador	Instituto Ecuatoriano de Telecommunicaciones (IETEL)	All private telecom svces.
Costa Rica	Radiografica Costarricense S.A. RASCA	All private telecom svces.
Bahamas	Bahamas Telecommunications Corporation (BATELCO)	All private telecom svces.
Haiti	Telecommunications d'Haiti (TELELCO)	All private telecom svces.
Honduras	Empresa Hondurena de Telecomunicaciones	All private telecom svces.
Colombia	Empresa Nacional de Telecomunicaciones	Private point-to-point or point-to-multipoint integrated digital svces.
Italy	Telespazio S.p.A.	All private telecom svces.
Netherlands Antilles	Antilles Telecommunication Administration	All telecom services
Curazao	Landsradio	All private data services
Panama	Intel	All private data services
Germany (FDR/GDR)	Infoware GmbH	Al private telecom services
Guatemala	EMPRITEL, S.A.	All private data services
	Contingent on authorization from Guatel	
Chile	VSAT Telecomunicaciones, S.A.	All private telecom services

Country	Entity	Services
Guatemala	Industria Telepuerto de Guatemala 90, S.A. Contingent on authorization from Guatel	All private data services
Costa Rica	Industria Telepuerto Ican S.A. DATAPORT	Private point-to-point IDS services

Maintenance Affiliates

Country	Company Name
Brazil	VICTORI
Ecuador	GRAPHCOM
Honduras	TELEMATIC

cc [illegible]

Communication Research Institute
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중앙대학교 언론연구소
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FAX TRANSMISSION COVER SHEET

TO : Fredarick A. Landman
FROM : Yong Son
DATE : 91/7/2
TELECOPIER NO :0011-203-622-9163
NUMBER OF PAGES(INCLUDING COVER) : 1

※ ☞ IF YOU HAVE ANY QUESTIONS OR DO NOT RECEIVE ALL PAGES,
PLEASE CALL (02) 798-5365 OR (02) 810-2366.

NOTES/COMMENTS :

Dear Mr. Landmand:

I received your fax messages of June 27 and July 1, 1991. Today I spoke with Mr. Neil Noh at Samsung concerning your fax messages. Also I informed to Mr. Noh your visit schedule in Seoul, the week of August 19th. According to Mr. Noh it was Mr. Suh, one of the executive officer under the Mr.O.B. Chae, has visited Itoh in Japan.

Since Samsung is awared that PAS is involved satellite business with C. Itoh, it was possible Mr. Suh has contacted C. Itoh and raised few points relative to PAS. Mr. Noh said that Samsung Co. Ltd has just been sent their final review of PAS proposal to the office of Chairman Mr. Lee. As I previously mentioned, Samsung Group level is now reviewing on the investment of PAS because of the high amount of investment.

Therefore after they reviewed investment plan, Samsung will send you directly the result of their participation on satellite business.

Sincerely Yours

Yong Son

DOCUMENTS WITHHELD FROM PRODUCTION
ATTORNEY CLIENT PRIVILEGE

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DOCUMENTS WITHHELD FROM PRODUCTION
ATTORNEY CLIENT PRIVILEGE

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4.0 MARKET FOR KU-BAND TRANSPONDERS AT LEASE EXPIRATION

In general, the fact that the remaining life of transponders is short does not preclude their utility in many transponder applications: e.g., point-point communications, ad-hoc backhaul networks, trunking, etc. Short-lived transponders would not be as attractive for new broadcast applications, where a large number of earth stations are involved. However, if the transponders were already being utilized in a broadcast network, as would be the case for K-2, their attractiveness to the broadcasters would be increased: the cost of repointing the earth station network, if programming were moved to another satellite, would be avoided.

Since they can continue to be used in many standard applications, it is reasonable to assume that the transponders would not need to be discounted at the end of their lease term. In fact, a case could be made for the expectation, at initiation of the original lease contract period, that lease rates in the future would be higher, since the cost of satellite manufacture and deployment would be greater. There would thus have been reason to expect in 1985 that lease rates for the K-2 transponders would be higher in the 1993+ time frame.

In summary, it is our belief that the market for the transponders would not be affected by a remaining life of two years, that their lease rates would not be discounted relative to other transponders, and in fact might increase.

ALPHA LYRACOM

PAN AMERICAN SATELLITE
ENGINEERING AND OPERATIONS
1350 CONNECTICUT AVENUE, NW, SUITE 610
WASHINGTON, DC 20036

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Date: 6/17 Page 1 of 13

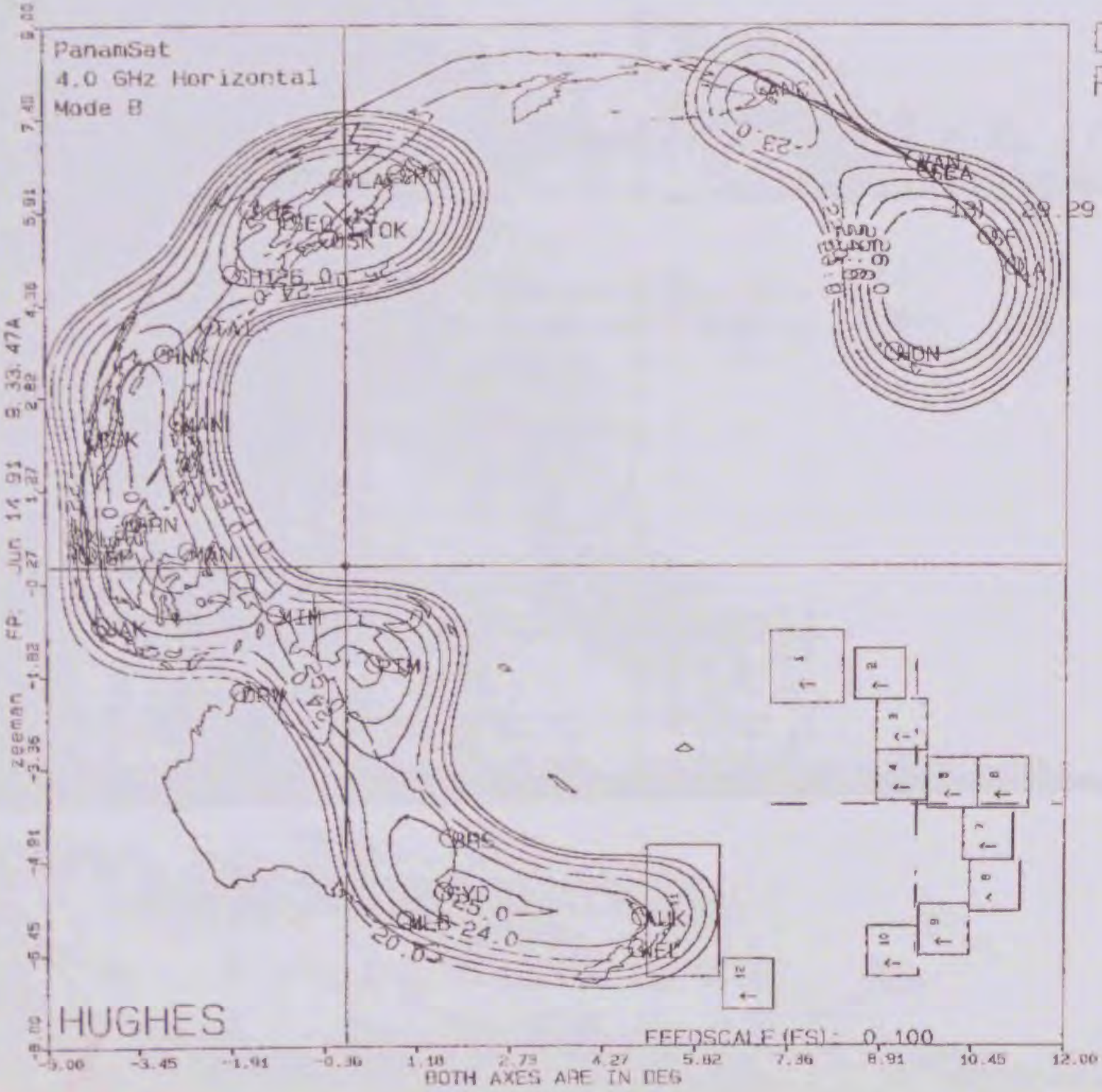
To: Tom

Fm: Paul

MESSAGE:

DIRECTIVITY PREDICTIONS

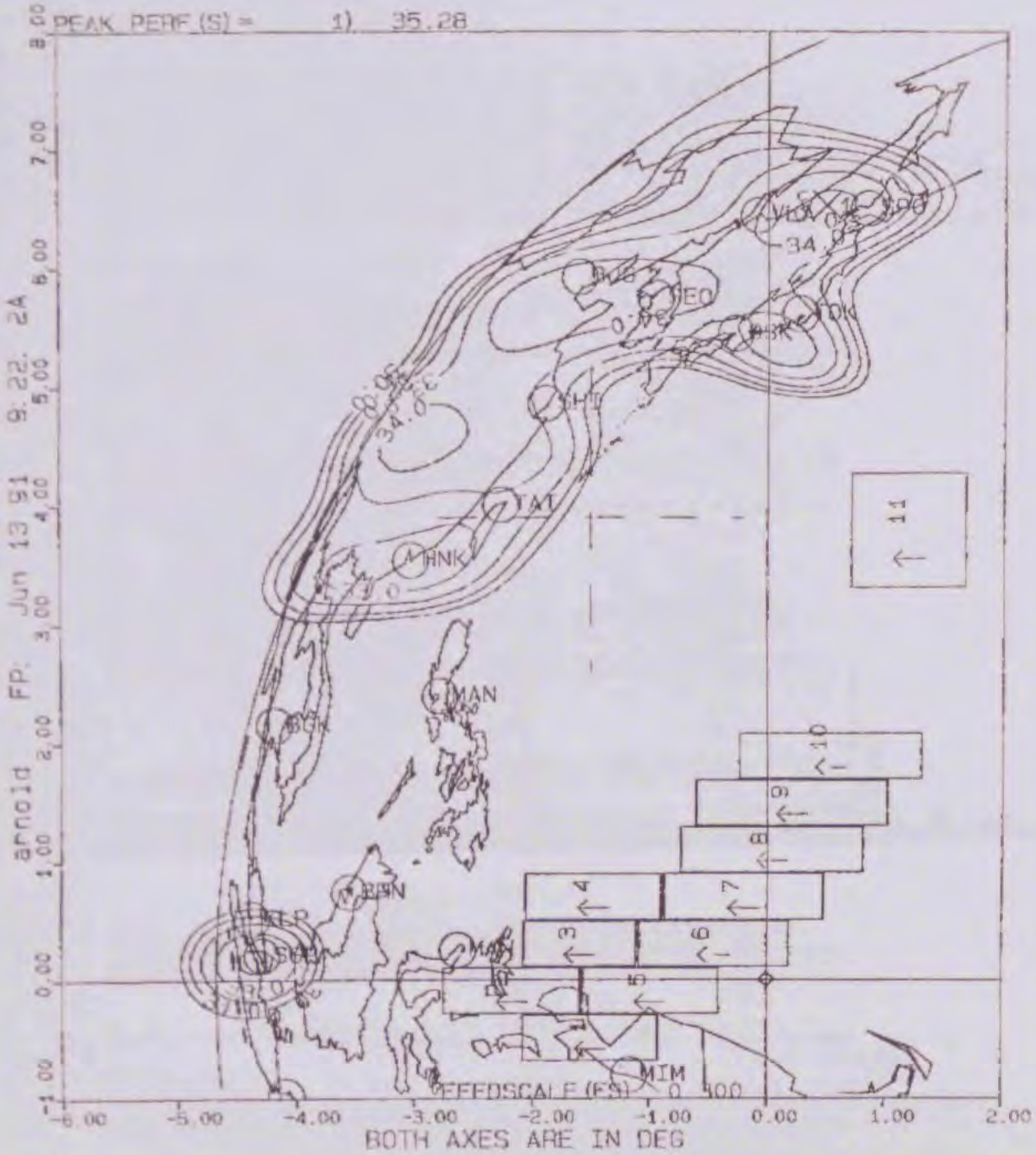
DIRECTIVITY PREDICTIONS



NO	CITY	GMIN	GMAX	SLMIN	SLMAX
1	LA	24.38	25.89	4.24	5.72
2	SF	25.42	26.60	3.52	4.65
3	SEA	21.97	23.84	5.45	7.07
4	ANC	23.36	23.87	0.97	2.34
5	VAN	21.00	23.00	5.77	7.53
6	WEL	22.74	23.90	2.95	4.83
7	BGK	23.87	25.18	3.49	5.31
8	HNK	25.49	25.93	1.18	2.01
9	KLP	21.74	23.50	5.22	6.95
10	MAN	24.84	25.81	2.46	4.09
11	BRN	25.65	26.22	1.36	2.52
12	MAN	26.06	26.46	0.71	1.89
13	MIM	23.63	24.00	0.11	2.18
14	MLB	21.77	23.26	4.24	5.87
15	SEO	28.03	28.66	1.69	2.72
16	SGP	22.20	23.83	4.90	6.15
17	SYD	24.74	25.12	0.55	2.06
18	TOK	28.52	29.14	1.12	3.19
19	BRS	23.61	24.51	2.14	3.92
20	JAK	21.62	23.06	4.39	5.18
21	BJG	25.29	26.80	4.10	5.80
22	TAI	23.52	24.39	1.87	3.96
23	DRW	17.10	19.88	7.65	10.96
24	HON	24.14	25.64	4.26	5.54
25	AUK	23.96	24.41	1.11	2.09
26	PTM	25.97	26.17	0.12	1.25
27	VLA	27.52	28.64	2.81	4.70
28	SPO	26.32	27.63	3.64	5.16
29	OSK	28.39	29.12	1.30	3.51
30	SHI	24.90	25.65	2.03	2.94

../maps/pan192W_LAND-MAPYAWOUT
get-hor-tx-b_TAPE1-SRES-SREOUT

JUN-17-91 MON 13:02



HUGHES

PANAM 601

HORIZ XNIT; pos mode
innermost of freq
panHxmitP12

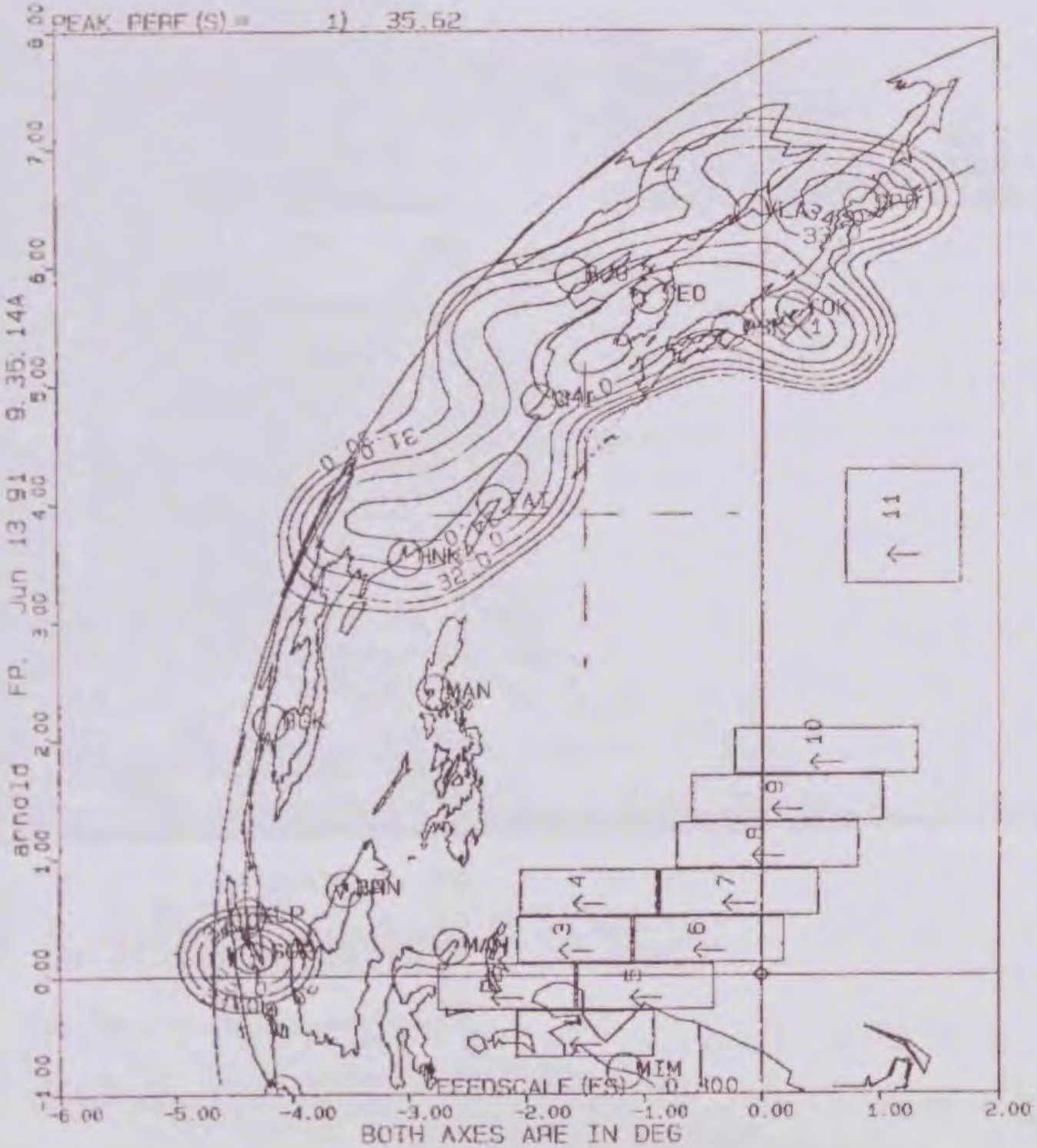
POS MODE

Jun 13 10:34 1991 14 user:arnold file:panHxmitP12_GAIN-CGEOUT Page 1

NO	CITY	AZ	EL	GMIN	AZ	EL	GMAX
1	SPO	0.91	6.36	33.69	0.70	6.53	35.12
2	VLA	-0.22	6.51	33.39	0.06	6.42	34.48
3	TOK	0.39	5.69	32.63	0.18	5.49	34.33
4	OSK	-0.37	5.33	33.19	-0.13	5.43	34.29
5	SEO	-0.92	5.59	34.08	-1.10	5.78	34.73
6	BJG	-1.63	6.06	33.74	-1.58	5.76	34.95
7	SHI	-1.74	4.84	32.06	-2.02	4.77	33.12
8	TAI	-2.15	3.90	32.45	-2.27	4.15	33.06
9	HNK	-3.06	3.67	33.22	-2.88	3.52	33.62
10	SGP	-4.25	0.35	33.48	-4.29	0.20	34.20
11	KLP	-4.39	0.67	28.77	-4.36	0.37	33.39
12	BGK	-4.30	2.05	12.53	-4.21	2.29	17.81
13	MAN	-2.77	2.54	12.59	-2.93	2.36	18.43
14	BRN	-3.42	0.81	11.46	-3.65	0.62	23.59
15	MIM	-1.03	-0.76	-13.69	-1.26	-0.69	-4.18
16	MAN	-2.49	0.28	1.92	-2.77	0.18	15.56

../maps/pan192W_rp15_y00_cit
panHxmitP12_TAPE1-SRES-SREOUT

JUN-17-91 MON 13:03


PEAK PERF (S) = 1) 35.62
arnold FP, Jun 13 91 9.35.14A
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panHxmitN12
EO
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FEEDSCALE (FS) 0 300
BOTH AXES ARE IN DEG
-6.00
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NEG MODE

Jun 13 10:34 1991 13 user:arnold file:panHxmitN12_GAIN-CGEOUT Page 1

NO	CITY	AZ	EL	GMIN	AZ	EL	GMAX
1	SPO	0.88	6.35	33.69	0.71	6.56	34.69
2	VLA	-0.24	6.45	31.85	0.06	6.48	32.89
3	TOK	0.32	5.75	34.58	0.30	5.47	35.62
4	OSK	-0.31	5.30	33.15	-0.19	5.57	34.77
5	SEO	-1.02	5.87	34.15	-0.81	5.69	34.92
6	BJG	-1.66	6.05	31.08	-1.52	5.79	33.03
7	SHI	-2.04	4.83	33.35	-1.80	4.98	34.29
8	TAI	-2.17	3.88	33.80	-2.42	4.01	34.40
9	HNK	-3.05	3.38	32.64	-3.00	3.68	33.98
10	SGP	-4.25	0.35	33.54	-4.29	0.20	34.35
11	KLP	-4.39	0.67	28.51	-4.36	0.37	33.47
12	BGK	-4.08	2.04	14.07	-4.21	2.29	18.33
13	MAN	-2.77	2.54	13.00	-2.92	2.33	20.15
14	BRN	-3.42	0.81	10.02	-3.65	0.62	23.21
15	MIM	-1.02	-0.79	-28.51	-1.26	-0.93	-2.06
16	MAN	-2.51	0.34	-0.01	-2.75	0.16	15.31

../maps/pan192W_rp15_y00_cit
panHxmitN12_TAPE1-SRES-SREOUT

PANAM 601

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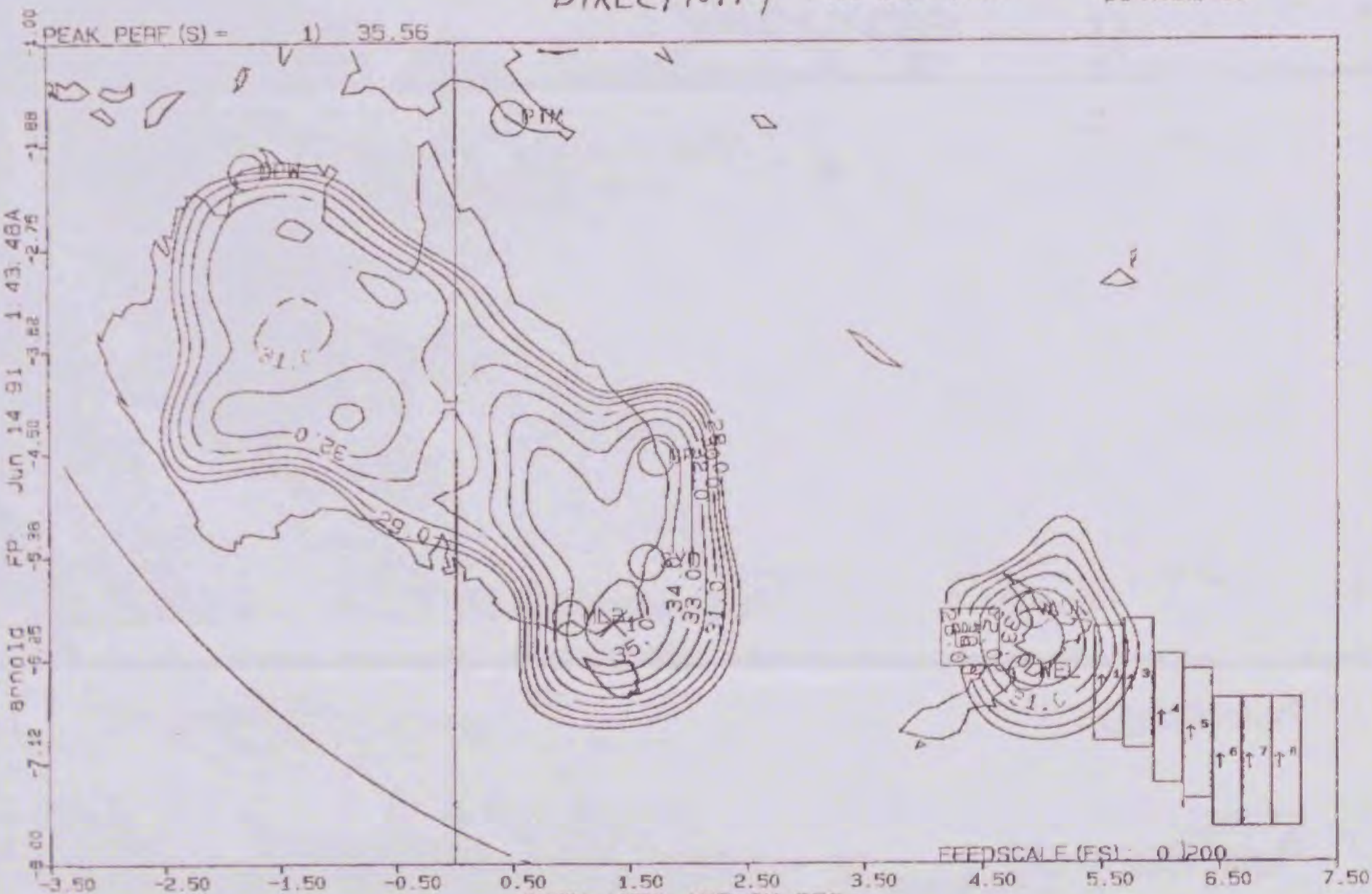
innermost of freq
panVxmitS9

DIRECTIVITY PREDICTIONS



DIRECTIVITY PREDICTIONS VERT MINUS SOUTH

Jun 14 09:22 1991 50 user:arnold file:panVxmitS9_GAIN-CGEOUT Page 1

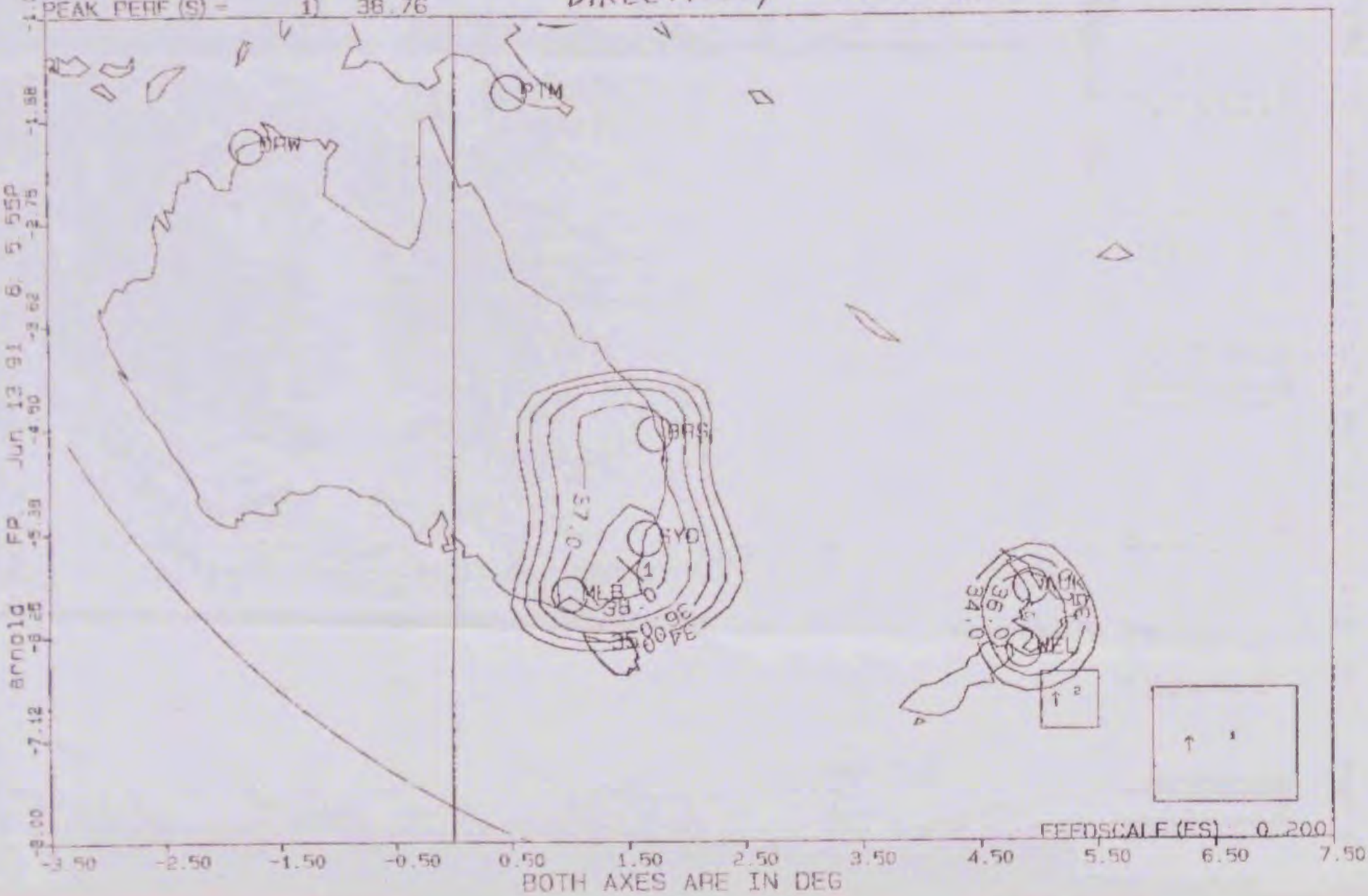
NO	CITY	AZ	EL	GMIN	AZ	EL	GMAX
1	MLB	0.84	-5.91	32.83	1.14	-5.94	35.08
2	BRS	1.61	-4.44	34.27	1.71	-4.70	34.76
3	SYD	1.79	-5.44	34.27	1.54	-5.55	34.90
4	AUK	4.88	-5.72	32.21	4.95	-6.01	33.51
5	WEL	4.80	-6.52	31.62	4.90	-6.24	33.25
6	DRW	-1.78	-1.95	23.89	-1.75	-2.24	30.18
7	PTM	0.55	-1.78	5.94	0.32	-1.52	9.75

../../maps/out
panVxmitS9_TAPE1-SRES-SREOUT

PANAM 601

VERT XMIT.
innermost of freq
panVxmitS3

DIRECTIVITY PREDICTIONS



DIRECTIVITY PREDICTIONS V-RI XMIT SOUTH

Jun 14 09:22 1991 52 user:arnold file:panVxmitS3_GAIN-CGEOUT Page 1

NO	CITY	AZ	EL	GMIN	AZ	EL	GMAX
1	MLB	0.84	-5.94	36.81	1.14	-5.88	38.16
2	BRS	1.87	-4.55	36.78	1.57	-4.53	37.66
3	SYD	1.77	-5.38	38.03	1.56	-5.57	38.68
4	AUK	4.97	-5.71	35.89	4.92	-6.01	37.11
5	WEL	4.80	-6.52	35.45	4.90	-6.24	36.90
6	DRW	-1.69	-2.22	-23.04	-1.93	-2.11	-11.19
7	PTM	0.40	-1.78	-17.54	0.52	-1.50	8.97

../../maps/out
panVxmitS3_TAPE1-SRES-SREOUT

ALPHA LYRACOM

PAN AMERICAN SATELLITE
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1350 CONNECTICUT AVENUE, NW, SUITE 610
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FACSIMILE MESSAGE

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Page 1 of 3

Date: 6/13

To: ~~Fred~~ Tom

Fm: Phil

MESSAGE:

06/17/1991 16:43 FROM ANTENNA SYSTEMS(S12/1120 TO P.01

FAXED 6-18-91

Post-it™ brand fax transmittal memo 7671	# of pages ▸ 2
To Dick Granger/	From D. Paul
cc Phil Rueben	Co. Hughes Aircraft
Dept.	Phone # 213-648-0702
Fax # 202-296-9383	Fax # 213-647-0487

6-17-91

The following is the latest iteration of the Pan Am antenna vertical transmit beam that covers Australia and New Zealand. Note that Perth is now covered. This beam is produced by a feed array consisting of 13 feed horns. This complex an array could be a concern to our antenna organization programmatically. We can talk about this tomorrow on our 11 AM E.S.T. conference call.

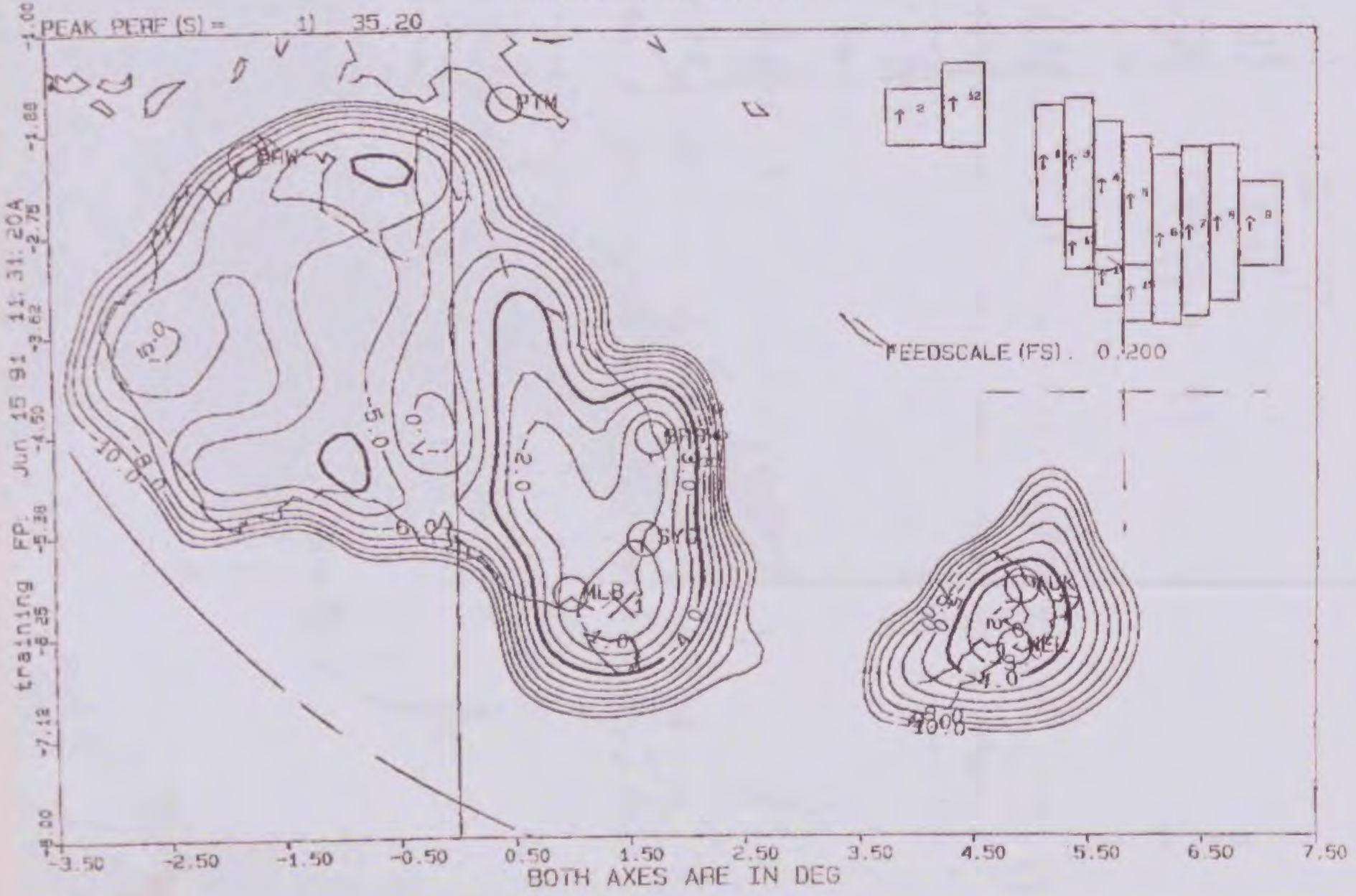
-Dean Paul

PANAM 601

VERTICAL TRANSMIT

innermost of freq (12.25, 12.5, 12.75)

PREDICTED DIRECTIVITY



JUN-18-91 TUE 9:50 P.03

29/17/1991 16:44 FROM ANTENNA SYSTEMS:512/1120 TO P.02

TOTAL P.02

2 DOCUMENTS WITHHELD FROM PRODUCTION
ATTORNEY CLIENT PRIVILEGE

103
104

PanAmSat 'COMICS,' NEWSPAPER EDITORIAL THROW SPOTLIGHT ON CLOSED-DOOR POLICY REVIEW

With a decision said to be imminent in an executive branch review of U.S. restrictions on services that can be provided by separate international satellite systems, a policy debate that had been effectively shielded from the public view burst into the light last week via two odd avenues--a comic strip run as a Pan American Satellite paid advertisement in the May 6 New York Times and the lead editorial in the May 8 Wall Street Journal. The PanAmSat comics and the Journal's editorial views both urged the Bush administration to grant PanAmSat's petition to remove the restriction on provision of services interconnected to the public switched networks (TR, July 23 and Dec. 10, 1990; and Feb. 11).

The heads of the National Telecommunications and Information Administration and the State Department's Bureau of International Communications and Information Policy wrote to FCC Chairman Alfred C. Sikes in February, asking the agency to postpone action on PanAmSat's petition pending completion of an executive branch policy review, which they indicated would take about 75 days. In the weeks since, numerous TR inquiries about the review to staff-level officials responsible for international satellite policy have yielded a consistent stream of "no comments."

Representatives of separate satellite companies--PanAmSat, Orion Satellite Corp., and Columbia Communications Corp.--reported running up against the same stone wall in attempts to stay abreast of the Bush administration's interagency policy review, although attorneys and officials for the companies said that they had been asked on occasion to provide information. Satellite policy staff of the three agencies confirmed that interagency meetings were taking place but declined even to hint at the substance of the discussions.

PanAmSat Chairman Rene Anselmo met with Secretary of Commerce Robert Mosbacher in April but said he learned little that would indicate how the government policy review was heading. One point made by Secretary Mosbacher--that the U.S. could not act unilaterally in imposing a policy on Intelsat--convinced him that it was time to make his case in public, Mr. Anselmo said last week. He did so via a 17-panel comic strip run as a New York Times ad. It portrayed Mr. Anselmo as an entrepreneur beset by a "Comsat Intelsat A team" of high-powered Washington lobbyists and "foreign PTTs," and it urged President Bush to "strike a blow for global telecommunications liberalization" by lifting the restriction on interconnection with the public switched networks.

The Wall Street Journal editorial two days later picked up on the theme of the PanAmSat comics, describing "a remarkable lobbying campaign to prevent greater competition to Intelsat, the global satellite cartel." The Journal editorialist also lambasted the Communications Satellite Corp.--the U.S. Intelsat signatory--which it described as "growing fat" on "windfall" fees charged for access to Intelsat. As the PanAmSat comics had portrayed earlier, the Journal flatly stated that Comsat was paying "many big-time lobbyists to stop any change" in the U.S. policy restrictions, which were adopted to protect Intelsat's core revenue streams.

The Journal editorial also raised publicly an issue that had been discussed privately by representatives of PanAmSat and other separate satellite companies in recent weeks--the apparent surfacing of a national security issue in the executive branch policy review. Reports that the Policy Coordinating Committee of the White House National Security Council took the lead initially in coordinating interagency discussions

spooked separate satellite officials into a frenzy of inquiries to see what national defense issue might be at stake. Again, because of the apparent efficiency of the Bush administration at keeping the lid on information about the ongoing policy review, their inquiries proved unsuccessful at turning up any details.

But representatives of all three separate satellite companies have told TR that they had learned from credible sources that a national security issue had been raised in the interagency discussions. A theme repeated by all three was that, somehow, the electronic intelligence mission of the National Security Agency might be affected, but no detailed explanations were offered. Government officials asked to comment on the matter declined, saying they had been instructed from the outset not to discuss the policy review publicly.

With no hint on the source of its information, the Journal's editorial last week stated flatly that NSA was concerned "that greater satellite communications will make it harder to listen in on our adversaries. But that's not really true. Satellites ar easy to tap, no matter who owns them. More important, if satellite progress is slowed down, countries will simply turn to fiber optic phone cables, which are much harder to tap than satellites. Our spooks will be shooting themselves in the ear."

Government officials, asked about the Journal's implied statement that NSA routinely monitors Intelsat traffic, either declined to comment or suggested that Mr. Anselmo was the source of the charge. Mr. Anselmo denied that, saying he has been frustrated in recent weeks in attempting to determine whether the administration actually has any national security concern related to Intelsat policy.

Asked whether the Journal was correct in its implications about NSA monitoring of Intelsat traffic, or whether Comsat or Intelsat have cooperated with such efforts, a Comsat spokesman told TR, "There's no way we would know that. All we do is sell the satellite time; we don't run the earth stations. I just don't see any functional way for us to have any role in such a program." TR was not able to reach an Intelsat spokesman by its news deadline. -End-

SWB SAYS BUREAU WRONGLY TREATED RATE ADJUSTMENT AS PRICE CAP FILING, SEEKS FCC REVIEW

If not reversed by the Commission, a Common Carrier Bureau's order "will have effectively confiscated $37,600,000 of earnings" that Southwestern Bell Telephone Co. "is lawfully entitled to under rate of return regulation," SW Bell has argued. It has requested FCC review of the bureau's order denying its proposal to retarget access rates to recoup underearnings for the remainder of the 1990-1991 rate period (TR, April 15). SW Bell said that the bureau "misinterpreted" tariff transmittal no. 2051 "as a price cap filing," instead of "a rate of return filing." As a result, the bureau's order effectively denies SW Bell's investors a "reasonable opportunity to earn the authorized rate of return during the 1990-1991 tariff period" and "severely impacts SW Bell's ability to improve the telecommunications infrastructure," it said. -End-

- - - - -

Timothy S. Duffy, former Director for development of video communications markets for GEC Plessey Telecommunications in the United Kingdom, has been named Managing Director for Europe, Middle East, and Africa for PictureTel Corp., Peabody, Mass. Mr. Duffy will be based in the U.K., reporting to Jeffrey E. Schiebe, PictureTel Vice President-international sales. -End-

DOCUMENTS WITHHELD FROM PRODUCTION
ATTORNEY CLIENT PRIVILEGE

105

ALPHA LYRACOM
SPACE COMMUNICATIONS

FACSIMILE MESSAGE SHEET
Fax: 203-622-9163

Date: 5-15-91

TO: CLAY WHITEHEAD

FROM: TOM CARROW

Fax No: 703-847-4804

Number of pages to follow: 2.

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Hatching HutchVision

If others' examples are anything to go by, now is not a propitious time to be launching satellite ventures. But the launch of a programme package along the lines of Sky Television is exactly what HutchVision, the programming offshoot of Hutchison Whampoa in Hong Kong, aims to do this year. Moreover, the Star venture will consist of new channels wholly dependent on advertising revenue and without additional programmers on its AsiaSat satellite to share the burden or the financial underpinning of a terrestrial relay.

HutchVision is pursuing a deliberate policy of going it alone. It has taken over the EZ TV music venture, the only other satellite channel to be announced for AsiaSat to date, and holds exclusive rights to offer direct broadcast television from the satellite. (On the other hand, HutchVision is able to sub-lease capacity on the satellite to other programmers).

Richard Li, the 24 year-old who heads up HutchVision, is cool and confident about the company's plans. He is the son of Li Ka-shing, the onetime plastic flower manufacturer who has built up one of the top three industrial groups in Hong Kong. Li intends to hand over the reins to a yet-to-be hired chief executive, but it is clear that for the moment HutchVision is his baby.

Li's response to questions doubting the wisdom of the HutchVision venture hinges on a faith in the burgeoning Asian economy, whose growth prospects outshine those for Europe and the United States. He is confident of the advertising potential of the "five per cent cream" of Asian households, as he puts it. Such households represent 145 million out of the 2.9 billion people under the AsiaSat beams.

Even more against the tide of what has been learnt at Sky, where Sky News ratings have been disappointingly low, HutchVision sees a news channel as the "flag carrier" of its programming package.

The news service will not be launched first, however. A pop music service and a sports channel will be the first off the ground this year.

The music service, says Li, will be considerably different from MTV. There will be classical and light music as well as rock. Whether there will be any association with MTV is a moot point.

The sports channel will have an American flavour, at least initially; tennis and golf are very popular in Asia. A regional input from Asia — Thai boxing, Sumo wrestling and so on — will have to wait until HutchVision becomes more established.

So too will a separate Mandarin Chinese

The youthful head of HutchVision, Richard Li, told Simon Baker why he does not believe what has happened in Europe need put off his ambitions for AsiaSat

channel, the only part of the main channel package which will not be in English. At present the Hong Kong authorities have banned a channel in the local Cantonese dialect. In type of content, if not the dialect in which it is presented, the HutchVision channel may not vary significantly from standard Hong Kong fare, a none-too inspiring mix of Kung Fu and low budget movies. An executive from Sir Run Run Shaw's television operation has been hired for a key role in the programming operation.

The major cost in satellite television is programming. Here HutchVision's approach is hard-nosed. This will come as no surprise to the Hong Kong business community, where Hutchison has a reputation of being a very tough negotiator. The programmer is aiming to form joint ventures with suppliers; programmes will not be bought but given for free. The suppliers will then be entitled to a minority share in the channel's profits if and when they arise. Deals may therefore be cut with smaller suppliers rather than the more established satellite channels. The tough terms laid down by Hutchison have already put off CNN.

The first two channels will be enough, Richard Li considers, to give HutchVision a reach of half a million viewers by the end of this year. Asian cable is still in its infancy but there are believed to be many connections already, and the prospects of a rapid increase through smatv. HutchVision's hope is for two to three million viewers by the end of 1992.

Timing is a word Richard Li uses a lot. He believes the Asian market is at the right point to welcome satellite television. He notes that after a certain stage of development television viewing declines — with higher disposable income and VCRs in lots of homes, entertainment does not have to come from a broadcast signal.

The economies of Asia, many (though a minority) making a rapid transition from UDC to NIC, from underdeveloped to newly industrialised country, will, Li thinks, be receptive to western satellite television.

Only in Japan has development reached the maturity where television viewing drops off or declines. Japan is already served by its own satellites. HutchVision is instead interested in launching a service to serve expatriate Japanese. Li says this audience is likely to be small "but quality". The channel is therefore likely to be encrypted.

The need to spread the concept of satellite television was a key reason behind the HutchVision decision to start the English-language service in the clear. It also had to bear in mind that many of the world's most adept hackers and reverse-engineering companies operate in its target area.

Another particular difficulty of the Asian market is censorship, which may hamper the news channel. A number of Asian countries, both the underdeveloped (viz China) and the developed (viz Singapore) are notoriously sensitive about criticism of their internal politics and have few qualms about stopping the circulation of foreign publications that in their eyes offend.

It is not at all clear from where the news channel will draw its material. One way out is for the HutchVision news service to con-

centrate on world events. Without confirming this as the motivation, Richard Li says as much as 60 per cent of programming for the news service may come from London. Some observers think this percentage is unrealistically high in that the international news focus of Asia is eastwards to America not westwards.

From whom in London? While Richard Li says that Hutchison Whampoa has no objection in principle to doing a deal with the Murdoch empire, a more likely source is ITN, along with the ABC network in America.

There were reports in London that HutchVision planned to take on a lot of staff from Britain, particularly former employees of BSB. HutchVision's thoughts on the numbers to be recruited have been revised downwards to no more than a handful. "We want HutchVision to be truly international", comments Mr Li, smiling. Britons in fact are rare at Hutchison Whampoa, where business-minded Canadians and Americans seem to be preferred.

To whatever extent HutchVision defrays its programming costs through joint venture arrangements the channel package will be very expensive. Li says he expects that maximum exposure on the whole venture could go as high as US$300-400 million — about half Hutchison Whampoa's profits. These are considered robust, though Hutchison's wealth stems heavily from property rental income in Hong Kong, a market whose prospects cannot be taken for granted with the return of the crown colony to Chinese control in 1997.

Putting so much into HutchVision is a measure of the group's confidence in the satellite project. And of the family's; half of the capital will be put up by the Lis themselves. (The 46th richest family in the world, their personal fortune has been estimated at US$2.7 billion.)

Hutchison Whampoa's commitment goes further, in that by demanding the exclusive right to broadcast television it has held back sales of transponders on AsiaSat 1, of which it is one-third owner.

While risky in itself, the international nature of HutchVision means that the venture is also a hedge against the uncertain future of Hong Kong. Richard Li says that the HutchVision business plan is not dependent on a relay in Hong Kong. There will be an uplink elsewhere in case the service needs to switch base.

HutchVision intends to transmit from AsiaSat in NTSC, which is used around most of Asia but not in China or in Hong Kong, which uses Pal.

Altogether there has been a substantial shift in focus since Hutchison Whampoa's first initiative for cable and satellite investment, its bid for the Hong Kong cable franchise. The group withdrew just days after Tiananmen square.

Richard Li says Hong Kong has not been written off for media investment. He is keen to talk of a new proposal to launch an MMDS service there. Now that the Hong Kong cable consortium which filled the breach has also pulled out, he thinks that MMDS, coupled with digital compression to conserve the use of bandwidth, could pay its way before 1997.

Li couches his pitch in terms of a "technological leapfrog" for the colony and says that he would welcome the participation of local broadcasters for a Cantonese service.

The proposal, yet to be formally submitted to the Hong Kong authorities, will be the latest move in what has been a long and wearisome debate with the authorities over the future direction of the crown colony's media policy. HutchVision wanted its AsiaSat programming package to be freely received, the opposing cable consortium wanted smarv to be banned.

On such careful packaging of proposals, on commercial fleetness of foot and its sense of timing will HutchVision's success heavily depend. ❑

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DOCUMENTS WITHHELD FROM PRODUCTION
ATTORNEY CLIENT PRIVILEGE

106

reading?

advertisement I have ever read.

about, bozo?

drinking dogs, vomiting cousins, philosophical celestials and jokes made at the expense of the hapless kurds.

Comsat next to me. Im homeless

Well, at least they didn't make fun of the Bengladeshis. Is there a point to the ad or is it for Obsession?

It has something to do with PSN, PTTs, Intelsat, Comsat, monopolies, powerful lobbyists and Mother Theresa

Royal Flush

I knew there would be a Bengladesh connection! Really, though, chowderhead, what's the point of the ad?

Either Lyndon Larouche is trying to get into the satellite communication business or this guy Rene Anselmo is trying to make people feel sorry for him by proclaiming his incredibly bad business judgment by paying large bucks for an ad that is incomprehensible to all but those who live on these satellites.

Alms, or arms, for the poor

Or, it could be the first wave of Kurds jokes. You know what they say: where there's a will, there's a whey.

You turkey! Write to your Congressman - or contact him by transponder - and urge him to ban cartoon ads. Oh, my time is up! It's your turn to be chairman. I get to be doorman. Have you noticed that my head is getting smaller?

Sincerely,
Ed Gaedel
EGBL Inc.
33 Crossways
Chappaqua NY 10514

MAY 10 '91 15:28 FROM PAN AMERICAN SATEL PAGE.001

** TOTAL PAGE.001 **

RUBIN, BEDNAREK AND ASSOCIATES
1350 CONNECTICUT AVENUE, NW
WASHINGTON, DC 20036

FACSIMILE MESSAGE

Confidentially Note
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[our fax number 202-296-9383 & phone number 202-296-9380]

Page___ of _____

Date: May 13, 1991

To: Tom Whitehead
Fm: Philip Rubin

Sb: Video Compression

MESSAGE:

I just received in the mail an SOW for an Intelsat study on video compression. This is a proposed 15-month study which has been estimated to be bid at about half a million.

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 1

To Andy Rush	From FAL
Co	Co.
Dept.	Phone #
Fax # 212-504-4091	Fax #

ALPHA D
SPACE COMM

VIA FACSIMILE 011-813-3497 3177

May 8, 1991

Mr. Tetsuzo Matsumoto
General Manager
Communications Business Dept.
C. Itoh & Co., Ltd.
5-1, Kita-Aoyama 2-Chome
Minato-ku
Tokyo, Japan

Dear Mr. Matsumoto:

It was good to visit with you in Paris. Thank you for lunch and the introductions to NEC. I also understand that you had a positive meeting with our Chairman, Mr. Anselmo in Greenwich

As I had previously told you, we had met with Mr. Ogawa of CSK in Tokyo who expressed an interest in our venture. Mr. Ogawa has now visited with Mr. Anselmo in Greenwich subsequent to your visit. Mr. Ogawa had confirmed his strong desire that CSK play a major role in the Global Satellite Venture. Mr. Anselmo told Mr. Ogawa that he would hope that CSK could work with C. Itoh in a Japanese syndicate and that we would welcome CSK's participation on that basis. Mr. Ogawa indicated that he knew C. Itoh well and did not have any problems in principal working with C. Itoh in this project.

I do not know what discussion, if any, C. Itoh has had with CSK to date, but I would urge you to do so. I believe CSK's core business and it's reliance on communication links would be a valuable addition to the Japanese consortium

Sincerely,

Frederick A. Landman
President
FAL:mf

Cable and Wireless
Worldwide Services
A Division of Cable and Wireless plc

19th April 1991

Frederick A. Landman
President
Alpha Lyracom Space Communications
One Pickwick Plaza
Greenwich
Connecticut 06830

Dear Mr. Landman

I refer to your letter dated April 4, 1991 addressed to Mr. Robin Turner. Mr. Turner is currently out of the country and has asked me to respond to you on behalf of Cable and Wireless.

It was a pleasure to meet with you and your representatives on 28th February and discuss the plans for the Global Satellite Venture. Following that meeting, the possibility of C&W participating in an equity holding has been discussed in-house. However I regret that the conclusion that has been reached is not to take discussions any further at this point in time.

This conclusion is purely from an investment view point. It is not intended to infer any decision on the use of capacity on PanAmSat satellites obtained by way of lease, etc.

Sincerely

Chris Gretton
Manager Satellite Policy

CWWS/NS/SP/CG008

Television Broadcasts Limited
電視廣播有限公司

Nicholas James 會惠儀
Assistant General Manager
Television Broadcasting
電視廣播助理總經理

Date : 29th April 1991

Mr Frederick A Landman
President
Alpha Lyracom
One Pickwick Plaza
Greenwich
Connecticut 06830

By Fax : 1-203-622-9163

Dear Fred,

Thank you for your fax of 8th April and indeed all the other information which your company has been supplying over the last few weeks.

TVB has now had an opportunity to consider properly what its position should be with regard to your proposal. We feel that your ideas are sound and that the proposed satellite for this region has an excellent footprint. However, for the time being, we are unable to invest in this project. Our reasons for making this decision relate to recent opportunities for alternative media related investment opportunities in Asia.

Notwithstanding the above, we do see your proposed satellite as a viable programme service delivery vehicle for TVB in the years to come. We would therefore very much like to keep in close contact with you over your plans as they develop and to look at the option of transponder rental at the appropriate time.

I am sorry the contents of this letter will be disappointing to you, however I do hope we can work together with you over your exciting project in the years to come and I hope you will keep me informed as things develop.

Yours sincerely,

Nicholas James

NJ/ty

c.c. Mr Kuok Koon Seng
Mr S. K. Fung

TV City, Clear Water Bay Road, Kowloon, Hong Kong Telephone: 719-4828 Telex: 43696 TVB HX Fax: 358-1337
香港九龍清水灣道電視城 電話:719-4828 電報:43596 TVB HX 圖文傳真:358-1337

Donaldson, Lufkin & Jenrette

Donaldson, Lufkin & Jenrette Securities Corporation • 140 Broadway, New York, NY 10005 • (212) 504-3000

Andrew H. Rush
Associate
Investment Banking
(212) 504-3149

May 2, 1991

Via Telecopy 011-82-2-751-2776

Mr. Neil Noh
Samsung Co., Ltd.
New Media Biz. Dept.
C.P.O. Box 1144
Seoul, Korea

Dear Mr. Noh:

Attached please find the audited 1990 financial statements for Pan American Satellite and Alpha Lyracom Space Communications, Inc. Also attached is a 1990 Consolidating Statement of Income for Pan American Satellite and Alpha Lyracom Space Communications, Inc. The Consolidating Statement of Income reflects the financial results for the company as a whole

I have attached the financial results for the first quarter of 1991 and 1990, which shows the substantial growth of Alpha Lyracom's business. Also attached is an analysis of 1991's forecasted results.

Alpha Lyracom expects to enter into final agreements with strategic partners for its Global Satellite Venture beginning in June or July.

C. Itoh & Co. and two other major Japanese trading companies have created a task force to form a consortium of Japanese companies to invest as a strategic partner in the Global Satellite Venture. The consortium will also include Japanese telecommunications carriers and broadcasting companies. C. Itoh has recently completed a series of due diligence meetings at Alpha Lyracom's headquarters in Greenwich, Connecticut and Alpha Lyracom expects to receive a formal written proposal from C. Itoh in June.

Alpha Lyracom has also received an alternative investment proposal from a consortium led by two other major Japanese companies. Alpha Lyracom has held meetings in New York and Greenwich, Connecticut with the chairmen of these companies and is continuing to discuss with these companies the final terms of their proposal.

Alpha Lyracom has also held a series of discussions with a number of other companies in the Asia/Pacific region. Alpha Lyracom expects to begin negotiating proposed investment terms with companies in Hong Kong, Taiwan and Singapore in May or June.

Mr. Landman, the President of Alpha Lyracom, is currently in Europe meeting with a number of potential European strategic partners.

Alpha Lyracom recently completed a number of follow-up meetings with potential American partners and Alpha Lyracom has exchanged proposals with a number of these companies.

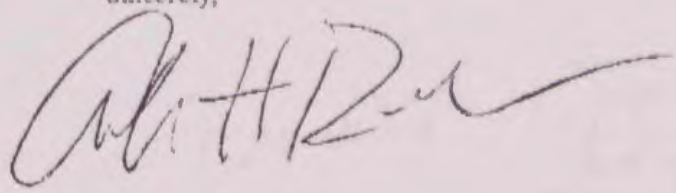
May 1, 1991

As I have indicated previously, we believe Samsung could greatly benefit from its participation in Alpha Lyracom's Global Satellite Venture. In addition, we believe that there are a number of other Korean companies which might be interested in forming a consortium to invest together as a strategic partner.

We would be glad to provide you with any further information you may need. In addition, we would welcome a visit by you to Alpha Lyracom's headquarters in Greenwich, Connecticut and its data services headquarters and main teleport facility in Homestead, Florida.

I look forward to discussing with you further your participation in Alpha Lyracom's Global Satellite Venture.

Sincerely,



The International Division of Samsung Group

SAMSUNG CO., LTD.

FACSIMILE

C.P.O BOX 1144, SEOUL, KOREA

OUR FAX NO.(02) 25L→226

TO		FROM	
FAX NO.: 212-504-4991		DATE: 4/30/91	REF NO.:
TO: DLJ		FROM: Neil Noh	
ATTN: Mr. Andy Rush		SECTION: SEL PLC OF SAMSUNG CO., LTD	
CC:			

SUBJECT: PanAmSat '90 Financial Statements

Mr. Rush, if the final audited financial statements have been completed, please send them to us as soon as possible. Please advise us on the current developments of the PanAmSat partnership project. Thank you.

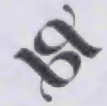
Sincerely yours,

Neil Noh

A. Mgr.

New Media Biz. Dept.

삼성물산주식회사



ALPHA LYRACOM
SPACE COMMUNICATIONS

Demand for Satellite Services in the Pacific Ocean Region

June 24, 1991

PAN AMERICAN SATELLITE • ONE PICKWICK PLAZA • GREENWICH, CONNECTICUT 06830 • TELEPHONE 203/622/6664 • FAX 203/622/9163

Alpha Lyracom has utilized Intelsat's market projections as the base for its own projections. Intelsat's projections are updated each year at its Global Traffic Meeting (GTM). During the GTM each Intelsat Signatory submits its projections of traffic which will be routed via Intelsat capacity for its domestic and international requirements. All international traffic forecasts are based on bilateral consultations (eg. Japan and the U.S.). The Signatory forecasts are then used as the basis for projecting capital requirements for satellites and ground equipment.

The Intelsat projections have historically been overly conservative for everything other than telephone (Category A) services. The non-telephone services, which encompass video and data services, have traditionally been under-reported for the following reasons:

1. Video projections are based on forecasts provided to the Signatories by their national broadcasters. The experience in most countries is that broadcasting service provided via Intelsat signatories is very expensive relative to the prices charged by domestic satellite systems. And, as Intelsat's satellites provide relatively low EIRP (power) levels, small and inexpensive earth station networks could not be created for multipoint distribution. As liberalization and satellite competition has lowered both the prices of video transmission and the cost of ground networks, video demand by national broadcasters has increased.

2. Signatories tend to have no experience in offering video services. As a result, they have not been able to develop the markets. The growth in the demand for video transponders results directly from the development of new video networks as a result of technological changes along with changes in program availability. The Signatories have traditionally not been positioned to predict this growth.

3. Outside of Europe, North America, Japan, and several other nations, wideband data facilities are difficult to acquire, and costly when they are available. Intelsat's wideband data forecasts have been consistently conservative. Its Signatories have been unprepared for the surge in demand following the fall in prices resulting from the introduction of satellite based digital services.[1]

---

[1] Prior to the availability of satellite based wide band data, customers were forced to utilize lower speed analogue carriers which had poor reliability and quality. In Latin America a 9.6 kbps analogue

4. International satellite based video and data are relatively new and immature services. Video programming has been growing rapidly as a function of the growth of specialized networks and cable television systems. Data applications have grown due to changes in computer and software availability as well as to the greater availability of data transmission facilities at lower costs. Both data and video display high degrees of price elasticity. As a result, small price changes have caused significant demand swings.

One final note specific to the Pacific Ocean Region. Intelsat has traditionally relegated its oldest satellites to the POR. The lack of availability of modern, high powered satellites has helped to suppress demand in the region. We expect that the introduction of newer satellites -- the Intelsat VII series and PAS-3, will change the demand composition in the region.

I. The Intelsat Projections for the Pacific

Intelsat's projections for the Pacific Ocean indicate the following:

	1989[2]	1993[3]	1999[4]
Category A (64 kbps units)	20,400	13,936	30,900
IBS (64 kbps units)	2,277	6,982	13,000
Video (36 Mhz units)	6.3	11.5	49
Domestic (36 Mhz units)	10	4.5	22

---

carrier is more costly and less reliable than the newly available 64 kbps satellite circuits.

[2] Actuals for 1989.

[3] Based on 1988 GTM figures. More current breakouts are not publicly available.

[4] Intelsat GTM 1990.

II. Additional Satellite Projections

Intelsat's projections reflect only the traffic its signatories plan to put through the Intelsat system. Hence, aside from the traffic noted above, there will be other satellite traffic for non-Intelsat systems, as well as traffic which could either go on terrestrial or satellite media, depending on cost.

The non-Intelsat traffic data are far less formal as there are no organized user meetings. The other satellite systems serving the region include Aussat (Australia, New Zealand, New Guinea), Palapa (Indonesia, Malaysia, Thailand, Singapore, Philippines, New Guinea), and AsiaSat (regional). There are also satellites providing solely domestic service to Japan and China, and planned satellite systems for Thailand and Korea.

The majority of the demand for these satellites will be for domestic services, particularly in Indonesia, China, Australia, and Japan. However, as discussed below, much of the domestic demand will, due to liberalization, be available to the PAS system.

III. Alpha Lyracom Projections

A. Category A Services (telephony): For Category A services Alpha Lyracom generally adhered to the basic Intelsat projection for 1999, but changed the spreading of the growth to a smooth 3% per year between 1990 and 1999. Alpha Lyracom's projections for 1999 are approximately 10% lower than Intelsat's. The reasons for this conservative projection are clear:

1. Fiber optic growth in the POR has been proceeding at an extremely rapid pace, with competitive international fiber cables serving all of the region's major cities. Given that telephone companies overwhelmingly prefer fiber to satellites for dense route transmission, we anticipate that much of the high density telephony traffic will migrate to cable systems.

2. Satellite systems are moving from analogue transmission using FDM/FM technology to digital transmission using the ISDN compatible IDR standard. Digital transmission offers the dual advantage of higher quality with far higher throughput per unit of bandwidth. Hence, the same satellite capacity can carry far more circuits. This obviously affects satellite capacity requirements for telephony.

B. Wideband Data Services: This category encompasses the rapidly growing range of data transmission services operating at speeds of 64 kbps and greater. It does not include VSAT services, which are categorized separately. Alpha Lyracom's projections follow Intelsat's, but concluded with a 1999 estimate which is 35% higher. The reasons for this higher growth rate, which we believe to be very conservative, are as follows:

1. The development of wide-band data is dependent on the continued liberalization of national and international satellite telecommunications within Asia, as well as the movement by established monopoly telecommunications providers to aggressively diversify their service offerings in the face of national pressure to liberalize services and lower prices. We believe that such liberalization is likely to continue taking account of:

a. The continued development of value added services requiring primary transport level services. While VAS throughout the region is currently channeled through monopoly providers, the diversity of VAS growth will place growing pressure on the governments to liberalize the means of acquiring the primary transport level services.

b. Particular country developments of interest include:

(1) Australia -- the privatization of Aussat combined with the openings for a second carrier will stimulate the already robust growth in the international and domestic wideband leased markets, and create the opportunity for a new international satellite carrier to permit the second carrier competitive access to space segment.

(2) Korea -- Korean government [policy has been to open competition to private sector and limited foreign competition. While telecommunications facilities are still protected, it is likely that the government will substantially open competition for satellite transmission services during the early 1990's, opening the wideband market to companies like Alpha Lyracom, particularly for private corporate networks.

(3) New Zealand -- Leased line demand has been extremely rapid, with a growth rate above 85% since 1985. Competition, already encouraged in the telecommunications sector, will develop for private networks.

(4) ASEAN -- While all of the ASEAN nations except the Philippines maintain monopoly control over network provision, there is substantial erosion of the monopolies developing due to more relaxed rules about the private provision of VAS networks and, more importantly, the introduction of competition by cellular providers. The opening of limited competition will almost inevitably put growing pressure on the government to loosen the rules on the provision of facilities for private networks, opening the leased circuit market to carriers like Alpha Lyracom.

2. Overall data for leased circuits in the Asia-Pacific region show a high rate of growth. Leased data circuits in the region grew at approximately 15% per year between 1987 and 1990, and if Japan[5] is excluded, the averages are far higher for individual countries (see Table 1). While many of these leased circuits are currently on terrestrial networks, many destinations cannot be reached economically or at all through terrestrial facilities. We believe that the drop in satellite transmission costs will further stimulate demand growth for leased circuits between 1990 and 1999.

3. Intelsat's projections continue to be based on the use of relatively large gateway earth stations, while the movement in the U.S. and elsewhere is towards customer premise earth stations (CPS), particularly where high power Ku-band transmission is available. As the cost of CPS terminals has diminished, the demand for data services has increased. Two studies commissioned by NASA on U.S. based CPS in 1982 found that customers favored customer premise stations over conventional common carrier type services. Among the reasons for favoring CPS services are:

- their relatively low cost for the volume of information transferred;
- customer control over end-to-end costs;
- high system reliability;
- ability to transmit at high data rates without the impediments offered by terrestrial facilities;
- customer imposed security, and
- guaranteed system access.

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[5] Telecommunications users in Japan and Australia have a wider array of network offerings than is the case elsewhere in Asia. Hence, they are less dependent on leased circuits to establish digital networks than would be the case in the ASEAN countries, Korea and Taiwan.

Table 1

Leased Circuits in Asia-Pacific
(U.S. $millions)

	1987	1988	1989	1990
Japan	576,100	647,800	752,300	627,000
Australia	96,000	104,050	112,800	122,250
S. Korea	103,008	126,496	169,594	219,000
Thailand	6,888	9,437	14,931	22,967
Hong Kong	67,940	67,642	65,134	65,700
New Zealand	18,887	25,233	33,700	45,000
ASEAN	59,987	81,447	94,116	109,109
TOTAL	**928,810**	**1,062,105**	**1,242,575**	**1,411,026**

These factors will be even more important for international communications where costs start at a higher level than domestic communications, where access to satellite data services in many countries is unreliable and costly, and where security is more difficult to control. The major limitation on CPS outside of the U.S. is the lack of suitable space segment. The launch of PAS-3 in the Pacific will quickly stimulate the CPS market.

4. There is a movement in the Atlantic, soon to be followed elsewhere, from full-time point-to-point services to ISDN type services which are variable rate and fully switched. The introduction of switched wide-band satellite services opens the digital market to considerable growth, particularly for teleconferencing and CAD/CAM applications, which require large data rates for short periods of time.

5. The Intelsat projections neither take account of digital transmission via terrestrial media which may be attracted to satellites, nor to the need for ISDN type services to locations where such service is not available terrestrially.

C. Very Small Aperture Terminals: Alpha Lyracom's projected market for VSAT's is based on a combination of vendor reports and consultant estimates rather than the user base found in the Intelsat projections. First, Intelsat doesn't provide VSAT services. Rather, as VSAT's are a form of value added service, Intelsat only provides aggregate space segment for the service. Intelsat satellites are not well suited for VSAT applications and, as VSAT service is a new product, Intelsat's Asian signatories have not yet projected any specific VSAT requirements.[6]

Second, VSAT services outside of the U.S. are still in an embryonic stage. The largest obstacles to the widespread creation of VSAT networks have been national regulations which hinder international networks with a hub in one country and remote terminals in many others as well as the lack of appropriate space segment for VSAT applications. Moreover, the VSAT technology is still relatively new and requires the creation of both a technical and a demand infrastructure before it can make a significant penetration.

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[6] VSAT's would generally be provided under Intelsat's Intelnet tariff. We were not able to find any Intelnet projections, other than for existing data broadcast services, for the POR.

Growth of the Asia-Pacific VSAT market stems from the robust growth seen in the overall Asia-Pacific Value Added Services (VAS) market. VAS encompasses multiple levels, the significant one for Alpha Lyracom's market being data transport, including all necessary hardware and software services. VSAT networks are a major component of the VAS market as, unlike point-to-point networks, they encompass extensive protocol processing and switching as part of the data transport.

VAS services have been growing rapidly in the Asia-Pacific region, in no small part due to the rapid deregulation of the industry throughout the world, and particularly in Australia, New Zealand, and Japan, with further liberalization expected elsewhere in Asia over the next year. The largest of the VAS markets will be Japan, with significant markets throughout the region.

Data transport will be the most rapidly growing portion of the overall VAS market. Total data transport revenues have grown by 64.6% per year between 1987 and 1990 and are projected to grow by approximately 50% per year between 1991 and 1995 (see Table 2).[7] Data transport revenues are projected to increase from $214,000,000 in 1987 to $7,444,100,000 in 1995.

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[7] Pyramid Research, Value Added Service Markets in Asia-Pacific, 1991, Exhibits 1-9, 1-12.

Table 2

Asia-Pacific VAS Data Transport Revenues
1987-1991*
(U.S. $millions)

	1987	1988	1989	1990	1991	1992	1993	1994	1995
Japan	160.5	262.4	521.4	761.2	1103.7	1600.4	2320.6	3364.9	4879.1
Australia	15.4	23.4	37.0	60.3	101.3	170.2	285.9	480.3	807.0
S. Korea	4.8	10.0	22.5	44.7	75.1	126.2	212.0	356.1	598.2
Thailand	2.4	3.7	6.2	12.3	20.6	34.6	58.1	97.6	163.9
Hong Kong	9.2	11.2	12.4	16.8	28.2	47.4	79.7	133.8	224.8
New Zealand	0.9	1.4	2.1	3.2	5.4	9.0	15.1	25.4	42.7
ASEAN	20.4	29.6	40.6	54.4	91.4	153.6	258.1	433.5	728.4
TOTAL	213.6	341.7	642.2	952.9	1425.7	2141.4	3229.4	4891.7	7444.1

* Pyramid Research, Value Added Service Markets in Asia-Pacific, Figures 1-9, 1-12.

The growth in VAS is reflected in the growth of VSAT's in the POR. Comsys, a London based satellite communications consulting firm, reported 200 VSAT dishes installed and operational in the Pacific ocean region during 1990. However, since that time, VSAT equipment orders have experienced robust growth. Vendors of VSAT equipment reported to Alpha Lyracom that customers in the Pacific ocean region have installed or ordered 5,452 VSATs as of June 1991 (see Table 3).

This significant growth can be attributed to the following:

1. VSAT networks offer enormous efficiencies over terrestrial multipoint networks, particularly in the absence of a pervasive digital infrastructure. The ability to bypass the terrestrial network and to isolate the investment from other public expenditures will make VSAT's particularly attractive in Southeast Asia and China.

2. As a service, VSAT's can meet many of the most significant commercial data requirements. These include banking and other financial services, inventory management, and electronic mail and facsimile. The relatively low cost of VSAT networks relative to other technologies will promote the development of networks which would, in the absence of VSAT's, not be economical.

3. The VSAT architecture assures a very high level of reliability as the failure of remote points have no effect on the operation of the overall network. The two points of failure, the satellite and the Hub, have sufficient redundancy to assure continuous operations except in the case of catastrophic failure.

4. The VSAT architecture is perfectly suited for many of the countries with thinly distributed populations in the Pacific Basin. In fact, the largest growth in VSAT's has been in Indonesia, where terrestrial based infrastructure is difficult, and very large growth is expected in the Philippines.

5. VSAT's are an adjunct to the rapidly growing Value Added Networks in the region, particular for international networks where the terrestrial ISDN will not be able to connect multiple points for many years.

Table 3

Asia-Pacific VSAT Market

Andrews	Units Ordered or Installed
China	450
TBD	60
GTE SpaceNet	
Australia	145
China	600
TBD	125
Hughes Network Systems	
Australia	227
China	125
Indonesia	250
Philippines	100
Thailand	280
Taiwan	10
Mitsubishi	
Japan	355
NEC	
Australia	254
Japan	300
Thailand	100
TBD	521
Scientific Atlanta	
China	200
Indonesia	650
Malaysia	200
Philippines	100
Thailand	400
Total	**5,452**

Total number of VSAT units are projected to increase by a factor of four over the next ten year period.

D. Video Services

Prior to 1986 there was virtually no demand for full time video channels outside of the Atlantic Ocean Region. In the POR historical demand for video services has been low, with only 6 transponders in use in 1989. Intelsat however, now projects 49 video transponders in service by 1999 due to the record of rapid growth of video services in the AOR and more specifically, the growth in demand for video networking and point-to-point transmission in Asia-Pacific due to the development of cable television and the expansion of national and regional networks. Alpha Lyracom has forecasted 63 total video transponders for the POR in 1999, reflecting what we believe is a more robust market for video transponders based on the following:

1. There has been a shortage of Intelsat transponders for video in the POR, and the transponders which have been available have offered relatively low power levels. As a result, establishing video networks has been costly and difficult.

2. ASTRA and PAS-1 have shown that the establishment of high powered satellites optimized for video networking creates extensive video networking markets. The success of both satellite systems demonstrates that the video market was suppressed by cost and lack of appropriate capacity both in Latin America and in Europe.

3. The demand for video programming services for the region, for regional, international and domestic communications is enormous. Among the potential customers are:

International Channels

ABC
AFRTS
BBC
Brightstar
CBS
CNBC/FNN
CNN
CONUS Communications
Disney
ESPN
HBO
MTV
NBC
NHK
Pay Per View
Sky News
Sky Television/Fox
TCI/United Artists:
Prime Sports, Discovery
TNT
Worldnet

Regional and Domestic Services

ABC HACBSS/Australia
Bond Movie Channel
RCTS/Australia
Skychannel 1&2/Australia
JISO/Japan
RTM2/Malaysia
TV3 Malaysia
New Zealand Cable
BBTV Thailand
Channel3/Thailand
Channel9/Thailand
Channel 5/Thailand

E. Occasional Video Services: Intelsat does not forecast occasional video traffic. This traffic has been steadily growing over the past three years, largely due to the growing availability of Electronic News Gathering equipment, allowing coverage of sports and news events which would have been ignored in the past.

F. Domestic Services: Intelsat's domestic transponder services are relatively new, dating back only to 1986. This program has been highly successful, and Intelsat projects a growth in the number of domestic transponders to 23 by 1999. This number does not take account of Aussat, Palapa, East-is-Red, and other planned national and regional satellites offering domestic services which collectively will offer more than 240 thirty-six Mhz equivalent domestic transponders by the mid-1990's, excluding the Japanese domestic satellites and AsiaSat. The majority of these transponders will be to provide video, data and telephone services.

Our experience in Latin America and Europe has clearly demonstrated that where national laws permit competition, Alpha Lyracom has been consistently competitive against national satellite systems. While it is unlikely that Alpha Lyracom will make significant penetration of the Indonesian domestic market, now served by the Indonesian owned Palapa, it will be a significant competitor of Palapa for the other Asean nation's domestic transponder market. And, Alpha Lyracom will be able to compete with the extremely costly Aussat system in both Australia and New Zealand, where the laws have been considerably liberalized, and may well be able to offer limited competitive services into the PRC.