



ALPHA LYRACOM

PAN AMERICAN SATELLITE

Broadcast Services

Broadcast & Video

7.89
3.66

43	23%	58
30		40
12		33
65		12
20		65
5.3		20
7.4		5.3
15.40		7.4
2.7		15.40
6.1		2.7
10.6		6.1
19.3%		10.6
21.2		19.3%
26.2		21.2
27.3%		26.2
27.3%		27.3%
16.2%		27.3%
41%		16.2%
7.4%		41%

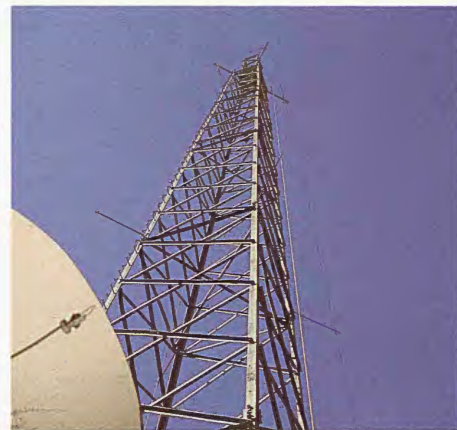
Alpha Lyracom Broadcast Services

With Alpha Lyracom's video and audio services, broadcasters can finally have it all: the power of a domestic satellite, the reach of an international satellite system and the flexibility to create, design and maintain control over your own networks. Plus, end-to-end cost savings that result from independent ownership and technology designed to meet today's broadcasting needs.

As the world's first private international satellite system, Alpha Lyracom brings new freedom to the realm of international broadcasting. With direct satellite access, you can construct and contract for the networks and services you need.

In addition, the power of our PAS I satellite permits the use of small, inexpensive earth stations for both transmission and reception. These small, low cost earth stations deliver high-quality signals and also make it possible to locate distribution facilities practically anywhere: from a rooftop in the city to a remote rural area.

Using a combination of regional and spot beams on PAS I, Alpha Lyracom offers broadband coverage throughout Latin America, the Caribbean, the U.S. and Europe. As a result, our service is ideal for broadcasters, businesses, governments and others who require a cost-effective means for transmitting and receiving quality television signals domestically or internationally.



Pan American Satellite delivers broadcast quality signals to stations in North America, Latin America and Western Europe.

The PAS I user is not subject to any unnecessary restrictions on the type of earth station used or on the operation of the transponder.

Dedicated Capacity

Alpha Lyracom provides customers with dedicated capacity on a flexible, full- or part-time lease basis. Since ours is a private satellite—unencumbered by restrictive international tariffs and usage limits—you can tailor the access plan to meet your precise needs.

Long-term, Full-time Use.

Alpha Lyracom offers full-time use contracts covering periods of 5, 7, 10 years or longer. This gives customers guaranteed satellite access 24 hours a day, 365 days a year.

Long-term, Part-time Use.

Alpha Lyracom also offers part-time use contracts for periods of a year or longer. This gives you guaranteed satellite access one or more hours per day, one or more days per week. Alternatively, we can arrange to provide you with a requirements agreement with a specified number of access hours per year, which may be used at your discretion.

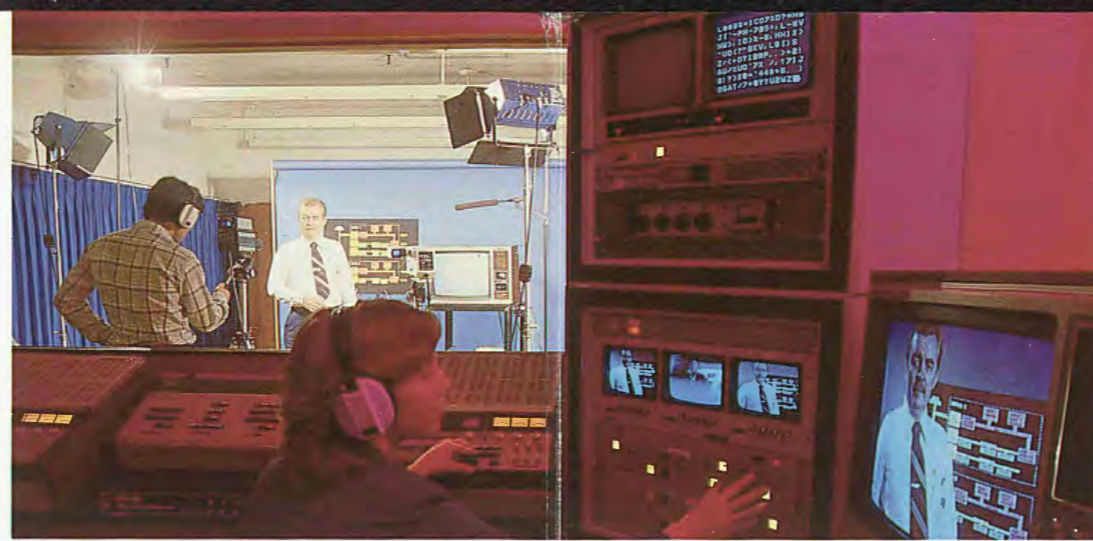
Applications

Alpha Lyracom's Broadcast Service opens up a wide range of opportunities to help you create and expand programming coverage. Our service makes it possible to link major urban centers—on the national or international level—and to expand the reach of your network to remote population centers within a country. Our dedicated capacity particularly suits the needs of:

- Broadcasters • Pay TV Services
- Cable Networks • Program Syndicators
- News Services • Business Television
- Special Interest Programming
- Radio Networks

Using our service, customers can:

- Distribute live sports or special events programming to networks and affiliates located anywhere within PAS I's coverage area;



Broadcasters can configure any network that meets their needs.

- Initiate satellite newsgathering for transmitting up-to-the-minute news reports directly to regional news distribution centers;



Cover special events using Pan American Satellite's flexible service arrangements.

- Establish national, regional or international video-conferencing networks;
- Create or expand educational networks throughout a nation's borders;
- Provide direct-to-home reception via small, low-cost earth stations;
- Access new markets in special interest programming for SMATV, hotels and cable systems;
- Reach new listeners for national and international radio networks.

PAS I Coverage

PAS I uses a combination of C- and Ku-band transponders to provide national, regional and international distribution of broadcast signals. Two major types of service are available on PAS I: Intercontinental and Domestic/Regional.

Intercontinental Service

PAS I Intercontinental Service is for customers who wish to distribute

high-quality signals throughout the Caribbean, Latin America, the U.S. and Europe.

By leasing an international transponder from Alpha Lyracom, customers can receive the same quality and reliability for their international service that they've come to expect from domestic satellites.

PAS I Intercontinental Service allows for the design of the most cost-effective and flexible networks available today. By simply placing a small earth station where you want, you can have direct satellite access to any location in our coverage area.

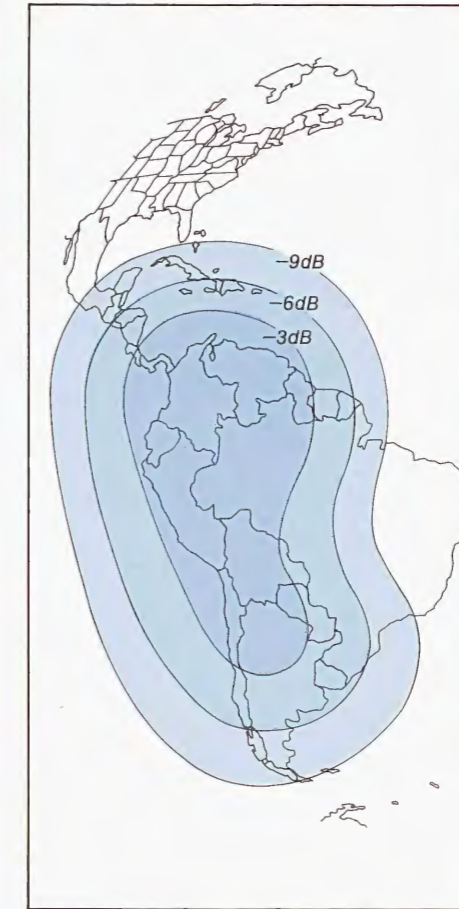
Domestic/Regional Service

PAS I Domestic Spot Beam and Regional Service provides the equivalent of a dedicated communications satellite for individual countries or groups of countries within the PAS I coverage area, at a fraction of a dedicated satellite's cost.

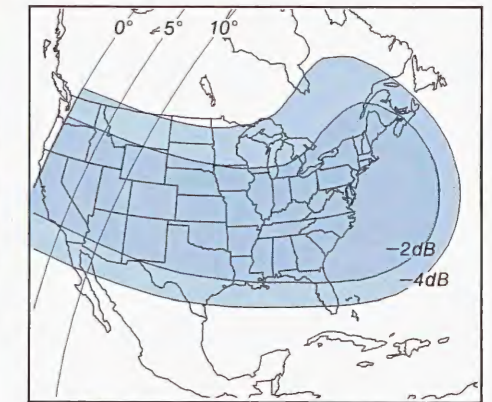
The service can provide full national or regional coverage of even the most remote population centers; facilities for extensive educational networks; capabilities for establishing business, military and government video-conferencing networks; direct-to-home television reception; and the ability to utilize multiple uplinks for regional broadcast and news distribution.

Dedicated capacity for domestic use on PAS I is available for purchase from Alpha Lyracom.

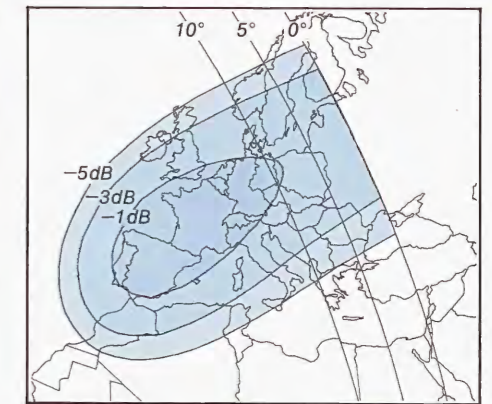
PAS I International coverage EIRP values (± 1 dB)



Latin American beam has a 37dBW beam center.



U.S. coverage provides a 45dBW beam center.



Pan American Satellite covers Europe with a 47dBW beam center.

Typical Antenna Sizes

	UPLINK		DOWNLINK		
	Fixed	Mobile	Home	Cable SMATV	Broadcast
Ku-Band					
Europe	7 Mtr	2.4 Mtr	1.8 Mtr	2.4 Mtr	3.7 Mtr
U.S.	5.6 Mtr	2.4 Mtr	2.4 Mtr	3 Mtr	4.5 Mtr
C-Band					
Latin America	7 Mtr	5.5 Mtr	(in the 3dB contour)		
			2.4 Mtr	2.4 Mtr	4.5 Mtr
Spot Beams	7 Mtr	5.5 Mtr	(in the 6dB contour)		
			3 Mtr	3.1 Mtr	4.5 Mtr
Spot Beams	7 Mtr	5.5 Mtr	2 Mtr	3 Mtr	3.5 Mtr

Advanced satellite technology allows small, inexpensive antennas to be used throughout the coverage area.

Alpha Lyracom Assistance

Alpha Lyracom is available to assist you in setting up and managing your satellite network. Working with your own specialists, we can help to determine the equipment and capabilities that will deliver full value on your investment.

Alpha Lyracom also provides international customers with the services of our Miami International Gateway for uplinking and downlinking. The Gateway gives you simultaneous access to North America, the Caribbean, Central America, South America and Western Europe.

Contact Alpha Lyracom for further information and for a program to handle all your regional and international broadcast requirements.

Alpha Lyracom Space Communications, Inc.
One Pickwick Plaza, Suite 270
Greenwich, CT 06830
(203) 622-6664
FAX: (203) 622-9163



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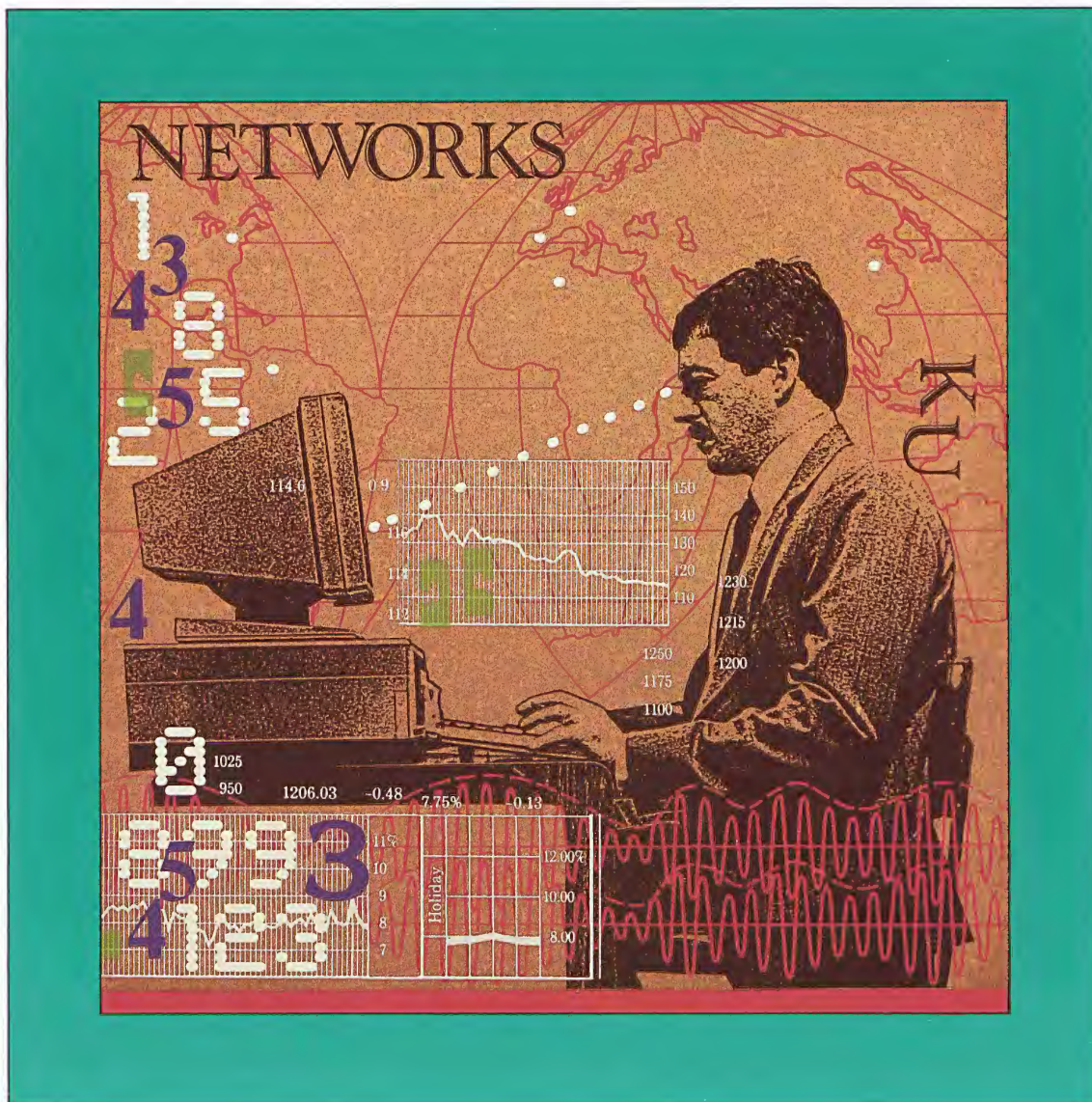
Alpha Lyracom Space Communications, Inc.
is the exclusive marketing and managing
agent for Alpha Lyracom/Pan
American Satellite.



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Data Services





PAS 1 private satellite business networks include voice and data.

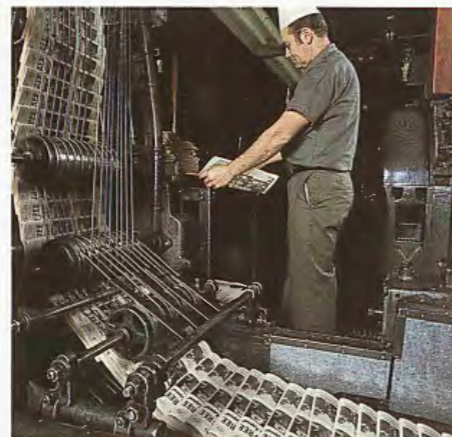
International Satellite Networks

Alpha Lyracom's data services allow multinational businesses to extend the reliability, flexibility and efficiency of their national data networks to overseas facilities and offices in North America, Latin America and Europe. With Alpha Lyracom's PAS 1 satellite customers can combine voice, data, facsimile, video, electronic mail and a host of other vital communications services in a single all-digital network. And, PAS 1's power promotes the use of low-cost VSAT terminals located directly on customer premises.

As the world's first private international satellite system, Alpha Lyracom offers businesses and institutions increased freedom in meeting their international communications needs. From 56 kbps to T1s and higher, Alpha Lyracom can provide the data, voice or video circuits businesses demand. It's the ideal communications technology for:

- Multinational corporations building private networks to link all their offices for voice, data and video communications.
- Companies with remotely-located mining and offshore drilling facilities that cannot be reached by terrestrial lines.
- Financial institutions needing instant access to international business centers for electronic funds transfers and credit card processing.

- Newspapers and magazines developing or extending remote publishing services.
- International news wire, weather and financial reporting services.
- National governments and institutions that need satellite services to link facilities and offices.



PAS 1 meets publishers' needs for multiple printing locations.

End-to-End Service

North America

Alpha Lyracom uplinks both C-band and Ku-band intercontinental traffic through its International Gateway in South Florida. Customers can deliver their communications to the Gateway using a long-distance carrier, or Alpha Lyracom will provide channels from users' North American offices to the Gateway. Customers with communications to Europe can

also directly access PAS 1 using their own earth stations or earth stations provided by third parties anywhere within the coverage areas.

Europe and Latin America

In Western Europe and throughout Latin America, Alpha Lyracom will assist satellite users in establishing end-to-end circuits. Through a network of affiliated data communications companies throughout Latin America, Alpha Lyracom can provide full, end-to-end services to international customers. In both Latin America and Europe, users can access the satellite through shared antennas, with terrestrial links, or dedicated antennas, located directly on customer premises.

Alpha Lyracom customers will have complete flexibility in designing and reconfiguring their networks, subject, of course, to any existing national regulations.

Flexible Network Design

Alpha Lyracom's PAS 1 satellite can accommodate a variety of network architectures, including:

Data Broadcasting Networks, where a single source delivers traffic to multiple facilities. Spread spectrum technology allows multiple 19.2 kbps data streams to be delivered to many small (60 cm), inexpensive earth stations. For point-to-multipoint applications, this technology is extremely cost effective.

Hub-Based VSAT Networks, in which a central hub facility communicates with several very small aperture terminals (VSATs), offer the most economical means of establishing large corporate data networks. These VSAT antennas can be as small as 1.2 meters, resulting in significant ground segment savings. Individual and shared hub systems can readily utilize PAS 1's high powered beams. And, most importantly, these services can be established for the first time between North America and Europe using PAS 1's Ku-band common uplink

beam. This beam permits a user to simultaneously access both the U.S. and Europe with the same earth station without having to reconfigure the satellite or incur additional operating costs.

Point-to-Point Networks, in which every facility has unlimited access to every other facility. These can employ a *mesh* architecture with direct satellite links between all points, a *star* design in which all points communicate through a central point, or a combination of the two.

Low-Cost Earth Stations

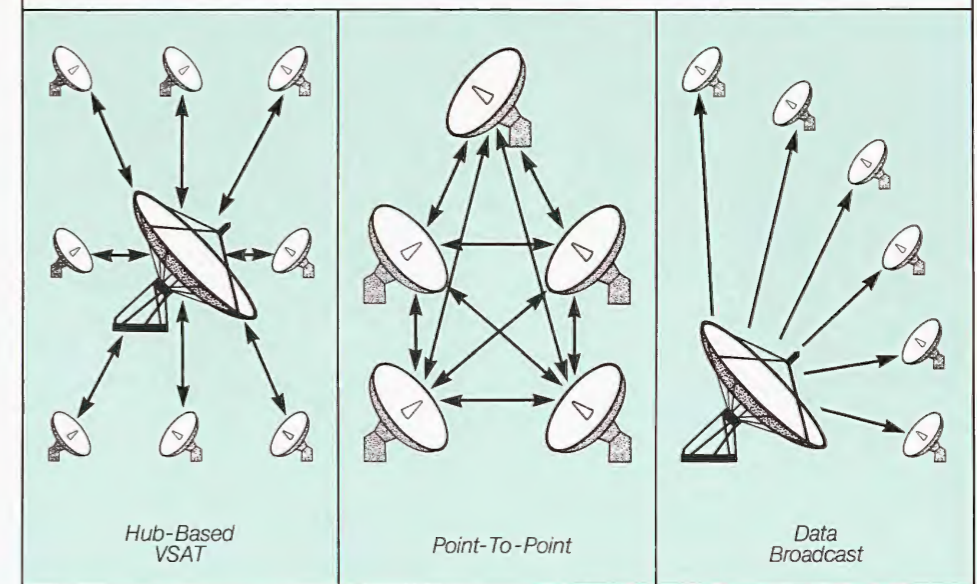
Small, low-cost antennas can be used throughout PAS 1's coverage area because of the satellite's signal strength. SCPC earth stations as small as 2.4 meters in diameter can be used for transmitting and receiving data streams up to a T1, and data receive antennas can be as small as 60 cm. Two-way VSAT antennas can be as small as 1.2 meters in diameter. While antenna sizes may vary slightly according to the satellite power at each location, Alpha Lyracom will assist in specifying the precise terminal equipment required for each customer site.

Note that due to the satellite's high power, there is no compromise between using small antennas and achieving excellent Bit Error Rates and system margins. Alpha Lyracom's data services are more than competitive with existing international satellite data services, and far superior to international digital services previously available in Latin America.



With PAS 1, customers can use data receive antennas as small as 60 cm.

SATELLITE NETWORK ARCHITECTURES



PAS 1's power allows for flexible network design.

PAS 1 Coverage

The PAS 1 satellite uses a combination of regional and spot beams to provide national, regional and intercontinental distribution of voice and data signals.

Intercontinental Services

Ku-band links North America with Western Europe, and C-band connects the U.S. with Latin America. Alpha Lyracom can distribute traffic to any of these destinations from the U.S., either via direct customer access to the satellite or through our South Florida International Gateway.



High-speed data capability serves the communications needs of large EDP centers.

Regional Services

For regional businesses in South America and Europe, users can access the satellite directly. European customers are able to establish regional communications networks, using PAS 1 as a European satellite. In the same way, customers in Central and South America and the Caribbean can build regional networks using PAS 1 as a Latin American satellite.

National Services

PAS 1 covers Latin America with three C-band spot beams, designed for national data services, government administrative networks or for telephone services within a specific country. National data services can be arranged by working with the Alpha Lyracom affiliate in each country.

PAS 1's European Beam can similarly be used for national services, particularly for data distribution services and digital video conferencing.

By using combinations of these various types of coverage, Alpha Lyracom customers can design a network to fit their most demanding communications needs, and minimize their costs in the process.

Alpha Lyracom Assistance

Alpha Lyracom engineers and data communications specialists are available to assist in defining the services you need. Together with a network of experienced affiliates, ALSC can help customers build and maintain state-of-the-art satellite-based data networks.

Our professional staff can specify the terminals required for each location and assist in acquiring and installing terminal equipment. Alpha Lyracom will also arrange with national and regional carriers for local terrestrial links that may be required to build an end-to-end network. And we provide the full service of our South Florida International Gateway for network management.

Contact Alpha Lyracom with your international communications needs and plans. We'll respond with a proposal that delivers a new level of communications performance, and significant savings in your communications costs.

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Greenwich, CT 06830
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Alpha Lyracom Space Communications, Inc. is the exclusive marketing and managing agent for Alpha Lyracom/Pan American Satellite.

The New York Times

Business

New Competition in the Sky,
And Just in Time for the War

A private satellite is meeting demand for TV reports from the gulf.

By EDMUND L. ANDREWS

MILITARY contractors have not been the only companies to get a lift from the United States-led war against Iraq. The nearly insatiable demand for live television reports about the war has been a bonanza for companies providing satellite services.

But few operators have enjoyed the sweet vindication of Rene V. Anselmo, the founder of Pan American Satellite of Stamford, Conn. Two years ago, in what seemed like a good way to lose a fortune, Mr. Anselmo gambled \$85 million from the sale of his former broadcasting businesses to buy and launch the first privately owned communications satellite over the Atlantic Ocean.

At the time, he faced heated opposition from regulators, had no assured customers and enough insurance to recover only half his costs if his satellite blew up during the launch. And he was lunging into a market controlled by Intelsat, a satellite consortium owned by organizations in 119 nations.

But today, Mr. Anselmo is virtually booked solid, offering cut-rate prices and fast bookings for television networks around the world. With 1991 sales likely to climb well beyond the company's initial projection of \$25 million, he is now busy raising money for three more satellites.

To be sure, boom times have come to almost everybody in the satellite business since the war began. Intelsat has seen "spot" bookings for satellite time — those not reserved far in advance — surge to 400 programs a day, up from about 150. Bright Star Communications Ltd., based in London, which buys satellite time in large volume from Intelsat and then resells it, has roughly doubled its business. Even American companies like GTE Spacenet are busy, relaying signals from abroad to local stations across the United States.

While Pan American's satellite does not reach the Persian Gulf, it, too, has benefited from the war. Revenues from spot bookings surged to about \$2 million for the last three weeks of January, up from \$200,000 a month before the war, although business has dropped slightly as stations have trimmed back war coverage. There are also revenues from long-term leases with television networks on both sides of the Atlantic.

"It was busy before, but it's pandemonium now," said Mr. Anselmo.

The company's satellite has become a key link for European news organizations that broadcast live from Washington, like the British

Broadcasting Corporation or SAT 1, the German network. It is also used heavily by American networks like CBS and ABC to transmit programming abroad and to supplement their direct satellite links to the Mideast by sending material through Europe.

The company's arrival has not brought prices down but has helped to improve service. "Pan Am Sat has been very good for the industry," said Charles E. Hoff, managing director for Cable News Network's satellite news gathering operations. "They offer a non-Intelsat alternative, essentially a free-market availability, and that has been good for all of us."

ONE of Pan American's first customers, CNN, has used its satellite mainly to send programming abroad but also to get material from overseas bureaus.

For Mr. Anselmo, who is 65 years old, Pan American is the second major project of his career. Born in Medford, Mass., he spent 11 years after college in Mexico, working for the Mexican television network, Televisa, and as an independent producer. In 1961, he came to the United States and, with other investors, bought a bankrupt UHF station and subsequently started up 14 others, all broadcasting in Spanish. That led to the founding of the Spanish International Network, financed in part by Televisa and offering Spanish-language programming to stations and cable systems in the United States and Latin America.

Satellites

More Fallout from the War

It seemed like a good way to lose a fortune when Rene Anselmo gambled \$85 million two years ago to launch a privately owned communications satellite. He faced heated opposition from regulators and had no assured customers. Today, Mr. Anselmo is virtually booked solid, offering cut-rate prices and fast bookings for TV networks around the world. Sales are climbing, thanks in part to the Persian Gulf war, and Mr. Anselmo plans more satellites. By Edmund L. Andrews.

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Richard Atolsis



Alpha Lyracom

Rene V. Anselmo started Pan American Satellite, a rival for the Intelsat consortium.

But Mr. Anselmo ran afoul of the Federal Communications Commission, which prohibits foreign control of television stations and contended that his were under foreign control because of Televisa's stake in SIN. After years of litigation, Mr. Anselmo sold his stations and separated himself from SIN in 1986. It was the \$100 million from these sales that enabled him to buy and launch the satellite.

His timing turned out to be excellent. Mr. Anselmo bought a satellite from RCA and was able to take advantage of special incentives offered by Arianespace, the European rocket company, to launch the satellite for only \$9 million. Arianespace was having trouble getting customers for a new launch rocket in part because of an explosion of an earlier rocket.

As a result, Mr. Anselmo was able to become operational for about \$85 million. Buying and launching a comparable satellite today would cost \$180 million to \$200 million.

The satellite became operational just before the breakdown of Communist regimes in Eastern Europe and the fall of the Berlin wall generated a surge in demand for satellite capacity. "They were in the right place at the right time," remarked Timothy Logue, space and telecommunications analyst with the Washington law firm of Reid & Priest. "News organizations have an insatiable drive to beat their opponents, and they will turn to whatever means are available."

The start-up of Pan American would have come off without a hitch if not for regulatory barriers.

Under longstanding international agreements, the Intelsat consortium had until Pan American's arrival enjoyed a virtual monopoly over international satellite communications. Under the system, participating countries designate companies — usually government-owned telephone companies — that serve as their representative to Intelsat. These companies transmit and receive material from Intelsat satellites and charge their customers, who supply telephone, data and television services. In the United States, access to Intelsat is controlled by the Communications Satellite Corporation, a for-profit company.

IN part because regulators feared that a competitor would undermine Intelsat, and in part because Pan American would inevitably deprive governments of Intelsat fees, Mr. Anselmo's plan to offer a competitive service generated heated opposition.

Although the Reagan Administration in 1983 endorsed the idea of limited competition with Intelsat, it took Mr. Anselmo from 1984 to September 1987 to get final launch approval from

the Federal Communications Commission. Even then, he didn't have a viable business because only one other country, Peru, had agreed to allow people within its borders to communicate over the new satellite.

WITH patience, persistence and pressure from major communications users, Mr. Anselmo began receiving "landing rights" for his satellite from other countries. By the time of the launch in 1988, he had agreements with a half-dozen countries, including West Germany. Almost 70 countries have since opened up to the new satellite.

Today, Pan American, whose communications base in Florida houses 10 earthstations, is booked almost to capacity. Pricing is complicated, but the rates appear to be somewhat

In the beginning,
only the U.S. and
Peru sanctioned
Pan American.

cheaper than the competition's. The company says prices vary from less than \$1,000 for an hour of satellite time to \$2,400, depending on a customer's annual usage. It says most customers pay less than \$1,300. That does not include the charge for using transmission stations on the ground, which can add a few hundred dollars at each end.

By contrast, Bright Star Communications, which resells time with Intelsat, charges \$1,700 to \$2,250 an hour, including earthstation fees. Comsat, the American Intelsat representative, charges a flat rate of \$2,637 an hour, which includes earthstation fees.

Mr. Anselmo said he never conducted formal market research to predict where customers would come from. The whole gamble was based on instinct. "My theory," he said, "was that I couldn't imagine putting a satellite up there and offering all this technology without it being used." ■

Who's Who in the Satellite Business



The major organizations in the trans-Atlantic satellite business:

Intelsat is an international satellite consortium owned by 119 governments. It owns 15 satellites worldwide.

Communications Satellite Corporation is a for-profit company acting as Washington's signatory to Intelsat. It charges \$2,637 per hour to send a signal from New York to London on Intelsat satellites.

Bright Star Communications Ltd., based in London, acts as a broker, buying time on Intelsat satellites, then re-selling it in small amounts to end-users. New York to London transmissions cost \$1,700 to \$2,250 per hour, depending on volume discounts.

Pan American Satellite, which is not related to the airline, owns one satellite, and plans to launch three more. It charges \$960 to \$2,400 per hour for New York to London transmissions, depending on volume discounts. Linking charges are additional.

Orion Network Systems Inc., based in Rockville, Md., plans to launch two satellites over the Atlantic by 1993, but needs \$300 million in addition to the \$90 million already committed by investors

Big, but Believable, Ambitions

WITH Pan American Satellite's one satellite virtually booked solid, both Rene V. Anselmo, its founder, and other entrepreneurs want to launch more of them.

Orion Network Systems, a start-up company in Rockville, Md., wants to launch two satellites over the Atlantic Ocean in 1993.

This week, the company said it had obtained investor commitments for \$90 million — about one-quarter of what it will need. The Federal Communications Commission has approved Orion Network's launch plans, subject to the company's ability to raise

the rest of the money it needs.

Meanwhile, Mr. Anselmo is trying to launch two satellites over the Pacific and Indian Oceans. He is looking for investors in Japan and Taiwan as well as in the United States.

Audacious as his goals may be, few seem inclined to belittle them right now.

"Pan Am Sat has come into its own," said Scott Chase, editor of *Via Satellite*, an industry magazine. "While Pan Am Sat's plans for first truly global satellite system may seem grandiose, their track record is such that no one can doubt their ability to put in a good run at pulling it off."

PANAMSAT TAKES OFF

SATELLITE SHAKEUP ROCKS LATIN TV BIZ

By PETER BESAS

NEW YORK The star of Latin American broadcasting this year is the PanAmSat-1 satellite, which is revolutionizing television from Buenos Aires to Mexico City.

Broadcast heavyweights such as Turner, HBO, CNN, ESPN and Galavision have pounced on this bird in an unprecedented scramble to reach the burgeoning cable markets of Latin America, and are jostling to grab a transponder and deliver programming south of the border in English, Spanish and Portuguese.

The target is an estimated 2.5 million homes served by anywhere from 300 to 1,000 cable operators.

Given the glutted, flat domestic U.S. market, the tv majors are seeking expansion overseas in Europe, the Pacific Rim and Latin America. Chances are that hundreds of millions of dollars will initially be lost by the suppliers until sufficient cable growth accrues in Latin countries; breakeven, it is hoped, will be three or four years down the road.

Mum's the word

Suppliers are mum on budgets and estimated revenue. However, even if suppliers receive \$1 a month per subscriber from the cable operators, it would work out as only \$30 million a year in revenue. It is more likely that the fee will be less than half that amount and that it will take years before the 100%-pirated DBS market will yield substantial returns. Some systems such as Galavision, which are going out unscrambled, obtain revenue from sponsors and advertising.

Said Steven Rosenberg of HBO Olé, a new service planning to enter the fray in the late spring: "We're already being pirated anyway. There are anywhere between 1 million and 2 million

so the only way to stop piracy is to set up a legal service, whereupon local governments will be more apt to crack down."

The thinking is similar to the majors' mindset when CIC Video pioneered entry into Latin America in the mid-1980s to set up the first legal homevid operation in Brazil, a country formerly dominated by vid pirates but now a key Latin market.

The explosion of satellite broadcasting has been paralleled over the past two years by the growth of cable systems in Latin America. Reaping the greatest benefits is Alpha Lyracom, the Connecticut-based company headed by former SIN topper Rene Anselmo, which launched the region's first private communications satellite, PanAmSat-1, in June 1988.

Alpha Lyracom's Lourdes Saralegui said the transponders have virtually been sold out and that the company is planning to launch a new bird at the end of 1993. The outfit already has 16 requests for transponders on the newly projected satellite, she claimed.

In addition to carrying CNN, ESPN, TNT and Galavision, PAS-1 also carries part-time RAI (the Italo government web), Visnews, special events and MTV Music on its Latin Beam. When HBO Olé starts up, it will ride on the PAS-1 bird's South Beam, together with TVN from Chile and Space, the new Argentine cable tv service. On the North Beam, PAS-1 reserves two slots for Venezuelan and Caribbean operators; on its Central Beam, it transmits Peruvian Channels 2, 4, 5, 7 and 13, which cover Peru, Ecuador and Bolivia.

Probably the most active territory for cable at this time is Argentina, where two Buenos Aires channels were privatized last year. One of these, Telefe (Channel 11), has already pulled ahead of Alejandro Romay's Channel 9, which heretofore was the only private channel in the capi-

revenue for the past few years.

Telefe has now linked with Imagen Satelital of Argentina, in turn a joint venture between Alberto Gonzalez's Telecinema and Cintelba. Imagen Satelital expects to launch Space, a 24-hour pay-tv movie channel, this month.

Space will premiere 60 new pics a month, drawing from 2,000 titles from such producers as Warner Bros., MGM/UA, Turner, Protele, Thames, Telepictures and RTVE.

In Mexico, Multivision, a branch of Telerey, is already transmitting eight channels since it started up on Sept. 1, 1989, and plans to add four more channels to its operation. Multivision reaches 90 other cable systems in Mexico via a multiple-point over-the-air system totaling some 600,000 subscribers.

Further south, in Caracas, Venezuela's largest cable operator Omnivision inked a deal for a 50-50 joint venture with HBO to create a Spanish-language premium movie and entertainment service called HBO Olé for all of Latin America and the Caribbean Basin. The service is skedded to be launched in the second quarter of '91.

Omnivision, controlled by Rafael Urbina and Hernan Perez Belisario, plans to launch an eight-channel MDS service in Venezuela. Until now, Omnivision broadcast only one channel to nine over-the-air cities. Estimates for HBO Olé's startup costs range from \$50 to \$100 million.

Three-way action

HBO's moves come on the heels of TNT's Latin launch Jan. 28 of TNT Latin America, the first trilingual web (English, Spanish and Portuguese). The web is primarily a movie service grinding pics from the Turner library of MGM, RKO and pre-1950 Warner product.

Sister service CNN Intl. bowed in the region Feb. 4 with a 24-hour feed, and features two 30-minute Spanish-lingo newscasts daily. The new CNNI signal replaced the domestic CNN signal previously transmitted in the region. CNN is officially released through 35 broadcasters, 125 hotels and 46 cable services catering to 220,000 subscribers in Latin America and the Caribbean.

In January, TNT and MVS Multivision in Mexico inked a multi-million-dollar pact to bring the new service to cable subscribers in Mexico.

Already in the market for nearly two years, ESPN was the first service to sign with PanAmSat's satellite, and uses a 24-hour feed with six separately encrypted multi-audio-tracked channels. Although programming is run in English, ESPN's Andrew P. Brilliant said that some premiere events are also carried in Spanish, and that these would be expanded.

As for Mexican-based Galavision (a subsid of Televisa), it has been beaming to Latin America since last spring and links to about 70 cable systems in Argentina, Venezuela, Chile, Colombia and Uruguay, charging 42¢ per viewer. The unscrambled program is essentially Televisa's Channel 2 (El Canal De Las Estrellas). Galavision runs commercials for multinational advertisers ranging from Pepsi to Colgate.

"The cable market is growing enormously in Latin America," commented Univisa's Fernando Diez Barroso.



ALPHA LYRACOM
SPACE COMMUNICATIONS

ALPHA LYRACOM SPACE COMMUNICATIONS, INC.
SATELLITE CONTROL CENTERS AND ALLIED TELEPORTS

PAS-1 Operations Control Center:

Homestead International Gateway Teleport
143 North Flagler Avenue
Homestead, Florida 33031
Phone: 305-247-7055
Facsimile: 305-245-3720
Station Manager: Wil Zarecor
24-Hour Satellite Control Center
Ad-Hoc bookings, goodnights and trouble reports

Headquarters/Main Office:

Alpha Lyracom Space Communications, Inc.
One Pickwick Plaza
Suite 270
Greenwich, Connecticut 06830
Telephone: 203-622-6664
Facsimile: 203-622-9163
24 hour traffic number: 203-622-8704
Broadcast Services Group:
Jack Albert: Vice President
Mike Antonovich: Manager, Video Services
Steve Cadden: Supervisor, Video Services
Luann Davis-Beckett: Satellite Coordinator, Video Services
Future ad-hoc and contract bookings, inquiries and general
information
9 am to 6 pm ET

Independent U.S. Earth Stations licensed to access PAS-1:

Atlantic Satellite Northvale, NJ
9.2 meter Ku, transmit/receive Europe
Tel:201-784-2841 Fax:201-767-0781

Auburn University Auburn, GA
9.2m C-band - 7.0m Ku-band transmit/receive
Tel:205-844-5707 Fax:205-844-5708

Cable News Network Atlanta, GA
7.0 meter Ku, transmit/receive Europe
Tel:404-827-1816 Fax:404-827-2564 Telex#:154162 UT

Contel ASC₁ Ellenwood, GA
13.0m C-band transmit/receive Latin America
Tel:404-244-2300 Fax:404-244-2330

revised 4/15/91

(continued)

Independent U.S. Earth Stations licensed to access PAS-1:

Century III Orlando, Fl.Inc. Orlando, FL
6.1 meter Ku, transmit/receive Europe
Tel:407-297-1000 Fax:407-352-8662

CONUS Communications Co. Washington, DC
4.6 meter Ku, transmit/receive Europe
Tel:202-955-7370 Fax:202-955-7314

Crescomm Transmission Services Holmdel, NJ
7.0 meter Ku, transmit/receive Europe
Tel:201-739-2874 Fax:201-575-1191 TX:642776

Capitol Satellite Raleigh, NC
7.0m Ku-band transmit/receive Europe
Tel:919-834-3265 Fax:919-850-4554

Crawford Satellite, Atlanta, GA
7.0m Ku-band transmit/receive Europe
6.1m Ku-band transmit/receive Europe
Tel:404-876-7149 Fax:404-876-8956

Dallas/Fort Worth Teleport Irving, TX
6.1 meter Ku, transmit/receive Europe
Tel:214-869-4622 Fax:214-869-2302

EDS Spectrum Corp Detroit, MI
4.5 meter Ku, transmit/receive Europe
Tel:313-262-5021 Fax:313-262-7117

EDS Spectrum Corp Plano, TX
7.0 meter Ku, transmit/receive Europe
Tel:214-604-9659 Fax:214-604-9323

GE Americom Vernon Valley, NJ
9.0 meter Ku, transmit/receive Europe
Tel:800-255-6122/OUTSIDE USA 201-827-9400
Fax: 609-987-4445

Group W Satellite Comm., Stamford, CT
7.0 meter Ku, receive Europe
Tel:203-965-6300 Fax:203-358-9765

Home Box Office Communications, Inc.
9.0 Meter Ku, transmit/receive Europe
Tel:516/361-8210;Fax:516/361-8382 (after hrs)
Tel:212/512-7806;Fax:212/512-7959 (bus. hrs)

Keystone Communications Orange, NJ
(Hamilton Satellite)
9.2 meter Ku, transmit/receive Europe
Tel:201-673 -1251 Fax:201-674-8289

Keystone Communications San Diego, CA
(Simmons Satellite)
5.0 meter Ku, transmit/receive Europe
Tel:569-8451 Fax:619-569-2948

Megastar, Inc. Dallas, TX
Ku, transmit/receive Europe
Tel:702-224-0556 Fax:702-388-1250

Microspace Communications Corp.Raleigh, NC
7.0 meter Ku, transmit/receive Europe
Tel:919-850-4515 Fax:919-850-4518

Montana State University, Bozman, MT
5.0 meter Ku, transmit/receive Europe
Tel:406-994-3437 Fax:406-994-2893

Pittsburgh Int'l Teleport New Kensington, PA
(Mobile Satellite Comms.)
9.2 meter Ku, transmit/receive Europe
Tel:412-337-1808 Fax:412-337-1754

Professional Video Trans. Serv. Washington, DC
5.0 meter Ku, transmit/receive Europe
Tel:202-775-0894 Fax:212-775-1288

Satellite Transmission and Reception Specialists
(STARS) Sylmar, CA
6.1 meter Ku, transmit/receive Europe
Tel:818-906-8753 Fax:818-906-9658

U.S. Satellite Corp., Salt Lake City, Utah
5.5 meter Ku, transmit/receive Europe
Tel:801-263-0519 Fax:801-263-0796

Washington International Teleport₁ Washington, DC
4.5 meter Ku, receive Europe
Tel:202-785-8300 Fax:703-642-8672

Notes: ₁ - Indicates that an uplink license application is pending before the FCC.

Fixed earth stations already licensed to provide domestic satellite transmission services can add PAS-1 international service to their license by filing a Form 403 (modification to license) with the FCC. The nominal filing fee is approximately \$120.

Transportable earth stations can provide direct access to the PAS-1 spacecraft, provided that a special temporary authority ("STA") is granted by the FCC International bureau.

revised 4/15/91



ALPHA LYRACOM
SPACE COMMUNICATIONS

THE INTERNATIONAL DECADE

ALPHA LYRACOM'S LIST OF COUNTRIES

Albania	Canada	Haiti	Romania
Anguilla	Cayman Is.	Hondoras	St. Lucia
Antigua & Barbuda	Chile	Hungary	St. Kitts & Nevis
Argentina	Colombia	Ireland	St. Vincent
Aruba	Costa Rica	Italy	Soviet Union
Austria	Czechoslovakia	Luxembourg	Spain
Bahamas	Denmark	Mexico	Suriname
Barbados	Dominica	Monaco	Sweden
Barbuda	Dominican Republic	Montserrat	Switzerland
Belgium	Ecuador	Netherlands	Trinidad & Tobago
Belize	France	N. Antilles	Turks & Caicos Is.
Bermuda	Germany	Panama	United Kingdom
Bolivia	Greece	Paraguay	United States
Brazil	Grenada	Peru	Uruguay
British Virgin Is.	Guatemala	Poland	Venezuela
Bulgaria	Guyana	Portugal	Yugoslavia

ALPHA LYRACOM IN ACTION: BROADCAST SERVICES July 1990 - March 1991

- * Extended coverage of the latest developments in the Persian Gulf. With the addition of ground war coverage, PAS-1 operated at full capacity at all peak times, averaging over 80 hours per day.
- * Signed Agreement with HBO for "HBO Ole" to Latin America, featuring 24 hour a day entertainment programming.
- * Signed Agreement with Telecinema for "Space/Canal 24" Pay TV service in Argentina.
- * Extended contract with VISNEWS for distribution of news feeds to Latin America.
- * Signed BBC for news feeds from the United States to London. Signed BBC Radio for long term agreement for radio services to Latin America directly from London.
- * Telefe Argentina began full-time network television distribution via PAS-1 with its own 7 meter Buenos Aires uplink.
- * Augmented CBS International regular contract services for daily US to UK program syndication, with short term, full and part-time service for UK to US news feeds.
- * Signed ABC Inc. for international distribution of daily prime time news and informational television programs to Europe.
- * Renewed RAI Corp. Fixed Program Service for Latin America.
- * Initiated Los Angeles to Paris "one-hop" broadcast service with France Telecom.
- * Sports: US Open Tennis to Europe for SAT.1; US Open Golf to ARD Germany; Goodwill Games to Latin America; US Grand Prix Auto Racing to Europe; ATP Tennis from US to Europe and Latin America; Championship Boxing to Europe and Latin America including Douglas vs. Holyfield and Tillman vs. Tyson.
- * Specials: 1991 Academy Awards to Latin America; 1991 British Film and Television Awards Los Angeles segment for the BBC; MTV Music Video Awards to Europe and Latin America; 6th Annual International AIDS Conference; Vina del Mar Music Festival for TVN



ALPHA LYRACOM
SPACE COMMUNICATIONS

The following countries have coordinated with Intelsat under Article XIV of the Intelsat Agreement for the Pan American Satellite System:

North America

Mexico
United States
Canada*

Central America

Belize
Costa Rica
Guatemala
Honduras
Panama

Caribbean

Anguilla
Antigua & Barbuda
Aruba
Bahamas
Barbados
Barbuda
Bermuda
British Virgin Islands
Cayman Islands
Dominica
Dominican Republic
Grenada
Haiti
Montserrat
Netherlands Antilles
St. Kitts & Nevis
St. Lucia
St. Vincent & Grenadines
Trinidad and Tobago
Turks and Caicos Islands

South America

Argentina
Bolivia
Brazil
Chile
Colombia
Ecuador
Guyana
Paraguay
Peru
Suriname
Uruguay
Venezuela

Western Europe

Austria
Belgium
Denmark
France
Germany
Greece
Ireland
Italy
Luxembourg
Monaco
Netherlands
Portugal
Spain
Sweden
Switzerland
United Kingdom

Eastern Europe

Albania
Bulgaria
Czechoslovakia
Hungary
Poland
Romania
Soviet Union
Yugoslavia

April 1991

*Pending June Board of Governors meeting.

PAS-1 CLIENTS AND END-USERS:
revised 4/16/91

DATA SERVICE AGREEMENTS

Associated Press
Banco del Pacifico (Ecuador)
Boeing
Citibank
Compania de Telefonos de Chile (CTC)
Contel Federal Systems
El Tiempo (Colombia)
Filan Banco
Glaxo
Intelfax, Inc.
L.H. Research
Microspace
NASA
Pittsburgh Teleport
Radiográfica Costarricense
Sertelsa (Peru)
Sita (Costa Rica)
Tecsel
Teleco (Haiti)
Telepuerto San Isidro S.A. (Dominican Republic)
TRT/FTC
University of Costa Rica
UNOCAL
U.S. Department of Defense
Volvo GM Heavy Trucks (Sweden)

BROADCAST SERVICE AGREEMENTS

ABC Broadcast & Operations
Allen-Bradley Europa (Netherlands)
Antenna 3 TV (Spain)
ARD Television (FRG)
Arts & Entertainment Network
Atlantic Satellite
British Broadcasting Company
British Telecommunications plc (UK)
Business TV Corporation
Brightstar Communications
Cable Satellite Public Affairs Network (C-Span)
Canal Plus (France)
Canal Plus (Spain)
Caracol, S.A.
CBS International
CBS News
Crescomm Transmission Services
Deutsche Bundespost Telekom (FRG)
EDS
European Broadcasting Union
Eurovisa
Federal Express
France Telecom
Fujisankei Communications (Japan)
GE Medical
GE Captital
Globo International Ltd.
Hewlett-Packard
Imagine Films
Keystone Communciations

MacNeil-Leher Reports
Miami Children's Hospital
MTV Music Television
MWIL Network
NBC
The Network Group, Atlanta
Organization de la Television Iberoamericana
Pittsburgh Teleport
Private Satellite Network
Production & Satellite Service Corp.
Professional Video Transmission Services Corp.
Radio Caracas Television (Venezuela)
Radiomar (Peru)
RAI Corporation (Italy)
Rede Manchete de Televisao (Brazil)
Retevison (Spain)
RTL Plus (West Germany)
Satellite Management International (UK/USA)
Satelliten Fernsehen SAT-1 (Germany)
Satellite Network Systems
Sea World
Sky-TV (UK)
The Space Connection
Spin TV International
STARS
Sure Shot Productions
Telemundo Group
Telespazio S.p.A. (Italy)
Texas Instruments
TPI
Trans World International
TV Marti
TVI (UK)
United Latin TV
University of Florida
Univision
Uplinger Enterprises

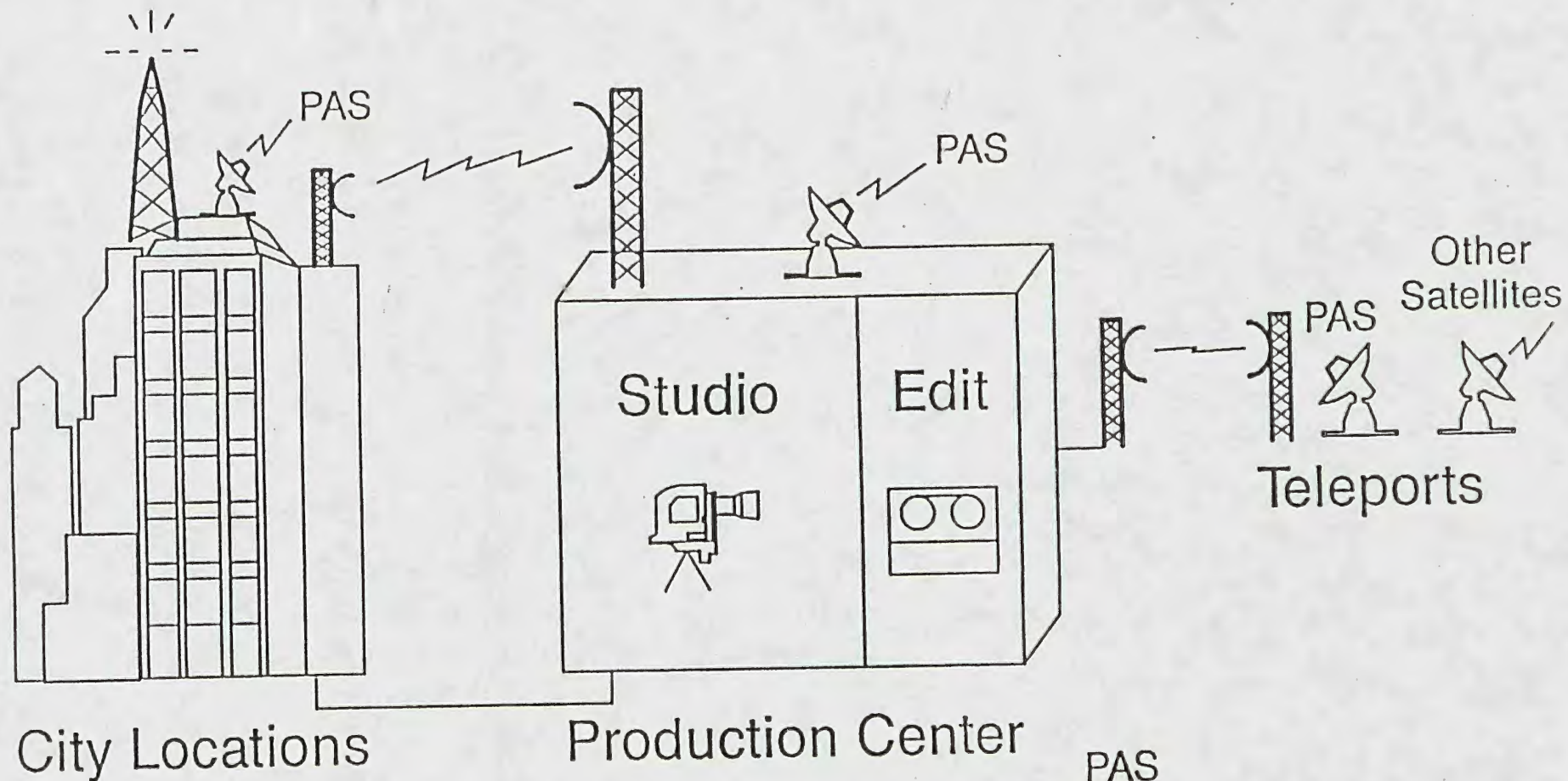
BROADCAST SERVICE AGREEMENTS CONT'D

Videostar
Venevision (Venezuela)
Voice of America
Visnews Ltd. (UK)
WCIX
WNET
World Plan Executive Council
WSVN
WTN Worldwide Television News
ZGS Television Productions

FULL TRANSPONDER SERVICE

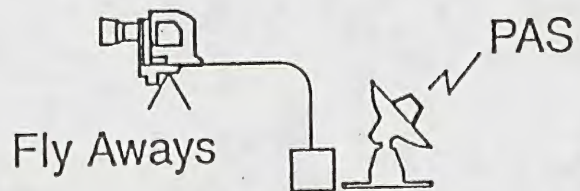
Canal 2 TV (Peru)
Canal 4 TV (Peru)
Canal 5 (Peru)
Canal 13 TV (Peru)
CNN
Compania de Telfonos de Chile (CTC)
Empresa Hondureña de Telecomunicaciones
(HONDUTEL)
ESPN International

Eurovisa (Mexico)
Government of Peru
Home Box Office, Inc.
NHK Satellite Operations (Japan)
Omnivision
Telecinema
Televisa S.A. (Mexico)
Television Federal (Argentina)
TNT
Television Nacional de Chile



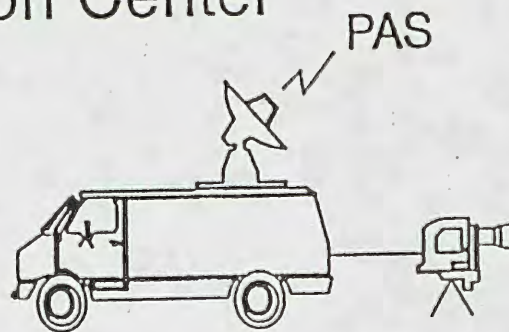
City Locations

Production Center



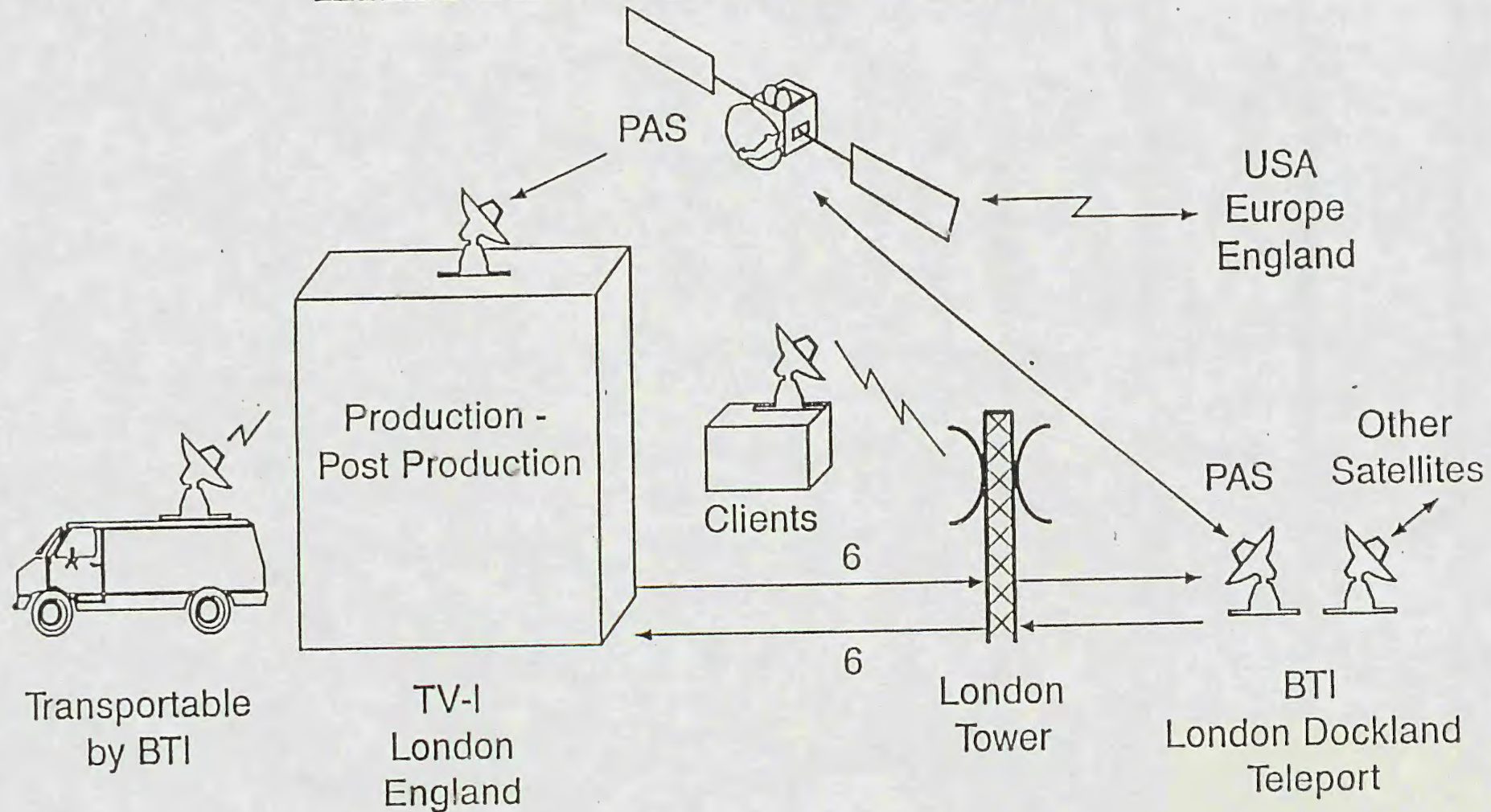
Fly Aways

SNV




ALPHA LYRACOM

EXISTING APPLICATION



ALPHA LYRACOM

PAN AMERICAN SATELLITE

Comunicado

Ku

C-BAND

DOWNLINK

Astro

1990

123456

BEAM

M

U4

U5

U6

R1

R2

R3

R4

R5

R6

R7

R8

R9

R10

R11

R12

R13

R14

R15

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U9

R1

R2

R3

R4

R5

R6

R7

R8

R9



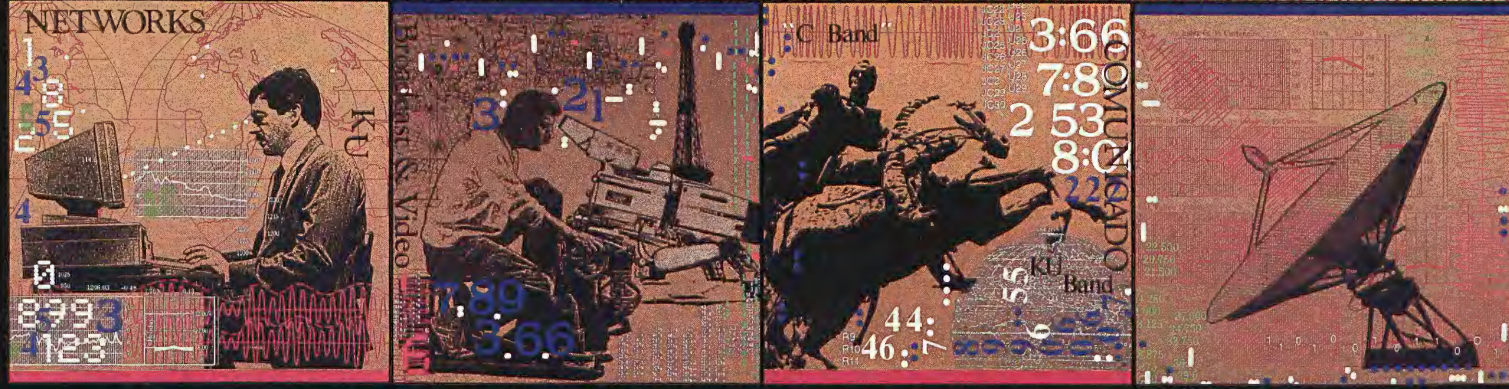
ALPHA LYRACOM

Pan American Satellite
One Pickwick Plaza, Suite 270
Greenwich, CT 06830
(203) 622-6664



ALPHA LYRACOM
 PAN AMERICAN SATELLITE

Launching A New Age In Satellite Communications.





Alpha Lyracom is an international satellite communications company doing business as Pan American Satellite. The company was founded in 1984 to provide competitively priced satellite communications for a variety of customers throughout the U.S., Latin America and Europe.

The World's First Private International Satellite System.

The 1988 launch of PAS I—the first of two planned satellites—marks Alpha Lyracom's entry as the first private company in history to own and operate an international communications satellite outside of the Intelsat consortium.

By providing flexible, low-cost business communications and broadcast links between the U.S., Latin America and Europe, it also marks the beginning of a bold new age in international satellite service.

With PAS I, you can custom-design your own international networks or have us create them for you. Either way, you'll enjoy all the benefits of a privately owned satellite facility—including direct access, use of inexpensive on-premise earth stations and unparalleled design flexibility to meet a broad range of needs.

In addition to providing satellite capacity, Alpha Lyracom can also provide a wide variety of turnkey communications services. From planning and designing complex international networks, to managing their operation and future growth.

If you ever considered international satellite communications before and found it either too expensive or too limited, now is the time to re-examine your alternatives. Because Alpha Lyracom's PAS I finally brings the ease, flexibility and low cost of domestic satellite service to the realm of international communications.



PAS I's Advanced Satellite Technology

The Alpha Lyracom PAS I is an RCA Astro Series 3000 Hybrid Communications Satellite, with 24 transponders operating in both the C- and Ku-band. It can accommodate many different types of international, regional and domestic communications needs.

To make the system more accessible and substantially reduce user costs, PAS I's transponders have been specially designed for access via small, inexpensive antennas. These antennas are small enough to be located directly on a customer's premises.

Gateways to PAS I satellite are provided through Alpha Lyracom's South Florida International Gateway. Among other things, this gateway provides the necessary "double-hop" for customers whose international communications needs combine European and Latin American coverage.



Alpha Lyracom's South Florida International Gateway provides the link between Europe and Latin America.

PAS I maintains a geostationary orbital position of 45° West Longitude. The satellite's monitoring and control services (tracking, telemetry and command functions) utilize our South Florida International Gateway control center and Contel ASC's state-of-the-art facility in Atlanta.



Contel ASC's Atlanta facility helps perform control and monitoring for the PAS I.

PAS I Covers All Your Satellite Communication Needs

PAS I Coverage Areas

PAS I provides international, regional and domestic coverage to five major geographic areas: Latin America, the Caribbean, Europe, the continental United States and Canada.

International Coverage

U.S./Latin America

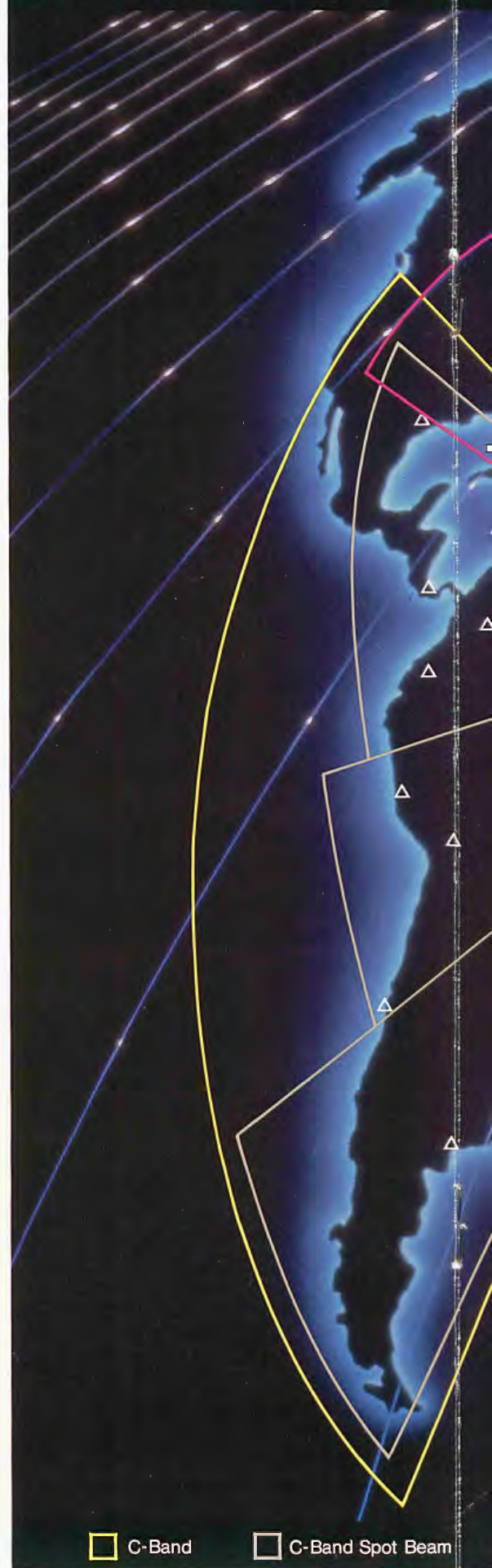
PAS I's regional service to Latin America provides C-band coverage to an area that includes South-eastern and Gulf Coast States, the Caribbean, Central America and South America. This beam operates at power levels equal to those of a U.S. domestic satellite and far in excess of any other system serving all of Latin America.

Our Latin America service makes possible for the first time the development of television, data and voice communications between all the countries of the Western Hemisphere.

U.S./Europe


PAS I also provides high-quality transatlantic communications service between the U.S. and Europe, using a total of six Ku-band transponders (three for the U.S. and three for Europe). The area covered by this service includes the sections of Europe west of Vienna and those parts of the U.S. and Canada east of the Sierra Mountains.

PAS I Coverage Map

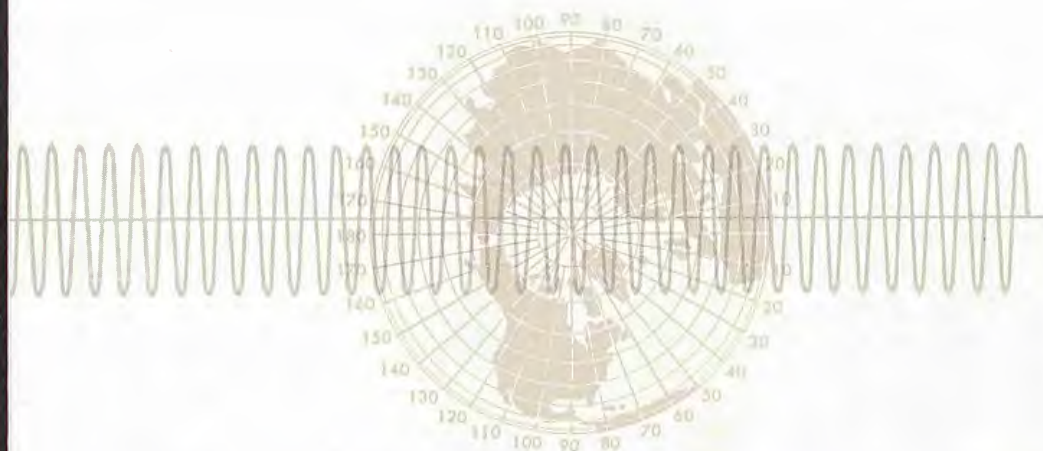




am □ Ku-Band

 South Florida International Gateway (C-Band and Ku-Band)

△ Major Worldwide Communications Center



Since Alpha Lyracom offers a common uplink for the U.S. and European transponders, all six transponders may be accessed from either location to provide maximum flexibility in routing your communications.

Due to the high power and advanced design of our transponders, customers may use small aperture earth stations to establish transatlantic video, private voice and data communications networks at a very low cost.

U.S./Latin America/Europe

Using a combination of C- and Ku-band transponders, PAS I easily addresses the needs of those whose communications span Latin America, the U.S. and Europe.

Under this service, a signal originating in Latin America would be carried via C-band to our South Florida International Gateway, then transmitted to Europe via Ku-band. Signals originating in Europe would work in a similar fashion, operating on the Ku-band to the U.S., then simultaneously relayed in the C-band to Latin America.

Taken together, the international coverages offered by PAS I give you unprecedented flexibility and scope for creating advanced satellite networks throughout Europe and the Western Hemisphere.

PAS I can carry live or taped programming and bring high-quality video to a broad geographic area.

Domestic Coverage

Latin America-Domestic

In addition to its long-distance intercontinental transmission capabilities, Alpha Lyracom's PAS I also offers three highly-focused spot beams to bring power to specific countries in Northern, Central and Southern Latin America.

These spot beams are specially contoured to provide maximum power within the national boundaries of each country. This makes them ideally suited to the inexpensive development and expansion of domestic and sub-regional telephone, data and television networks.

The North Beam covers Central America, Colombia, Venezuela and the Caribbean. The Central Beam's coverage includes Ecuador, Peru and Bolivia. And the South Beam extends over Argentina, Chile, Paraguay and Uruguay.



One Satellite... A Wide Spectrum of Uses.

Broadcast and Video

The Alpha Lyracom PAS I is ideally suited to the national and international transmission of broadcast and video signals for television and cable networks, news-gathering and special events coverage, educational networks, and teleconferencing purposes.

The satellite enables users to distribute high-quality video signals in the same manner as a domestic satellite system. Due to its high power, earth stations as small as 2.8 meters may be used for transmission and reception, allowing inexpensive access and providing coverage to geographically remote areas.

PAS I will carry programming from any point within our satellite's coverage area to any others for a single charge—there is no additional cost for multi-point distribution.

Private Networks

Businesses that wish to set up private networks can use PAS I's services to interconnect numerous, geographically distant offices.

In addition to carrying voice and data signals, the satellite can accommodate telex, facsimile, video, teletext, and a host of other communications.

There are many industries and applications for which PAS I offers a perfect solution. A few of these include:

News Agencies and Financial Information Services—Expand networks internationally, using on-premises terminals at customer locations.

Banks and Financial Services Companies—Design interactive data networks for electronic funds transfers or credit card processing and verification.

Manufacturers and Retailers—Control inventory over multiple locations and set up point-of-sale transaction systems.

Petroleum and Mining Industries—Collect data gathered at remote or inaccessible sites and relay it to central offices for processing and analysis.



PAS I private networks can include voice, data, video, telex, facsimile and many other communications.

Alpha Lyracom's PAS I offers reliable, high-capacity data transmission capabilities, with transmission rates ranging from 64kbps to T1s and higher.

Again, because PAS I's power lets it be accessed by on-premise antennas less than 2 meters in size, businesses can establish satellite links almost anywhere there's an



The PAS I brings national satellite network capabilities within reach of any country.

office. From the most isolated outpost to the most densely populated urban area. By eliminating the need for large earth stations, PAS I makes it practical to establish wide-ranging networks that can improve the flow of information and sharpen your business's competitive edge.

National Satellite Networks

With PAS I, Latin American and Caribbean countries can finally enjoy all the advantages of a dedicated national communications satellite without concern for the financial commitment or excess capacity in owning one for themselves.

Through PAS I satellite service, governments and private industries can economically establish or expand the reach of telephone, television, education and information services throughout their nation's borders.

Our satellite's powerful spot beams operating with small earth stations mean no area is too remote to be reached. As a result, truly comprehensive national coverage becomes an immediate and affordable reality.

In telephony, PAS I can be used to expand existing trunk groups or provide telephone service to rural areas that previously could not be eco-

nomically served. In broadcasting, the satellite can carry radio or television programming to every populated area in your country—no matter how small or remote. Through PAS I, information from the capital can at last be brought to *all* of the nation's people.

PAS I represents an important opportunity for Latin American countries to unlock the power and potential of an advanced national communications system. By providing the means to expand and improve national communications, this cost-effective tool can vitally enhance your country's social and economic progress.

Accessing the PAS I.

International and Domestic transponders on PAS I are available for sale or long-term lease on a condominium basis to television networks, foreign governments, communications companies and businesses in need of state-of-the-art telecommunications capabilities.

Alpha Lyracom is responsible for all required U.S. licenses necessary for the operation of the system, and will provide an experienced management team to help our customers obtain any foreign approvals that may be needed.

PAS I Technical Overview

<i>Manufacturer:</i>	<i>RCA Astro Electronics</i>
<i>Launch Vehicle:</i>	<i>Ariane 401</i>
<i>Orbital Location:</i>	<i>45° West Longitude</i>
<i>Service Date:</i>	<i>June 28, 1988</i>
<i>Satellite Launch Weight:</i>	<i>2690 lbs.</i>
<i>Satellite Weight in Orbit:</i>	<i>1560 lbs.</i>
<i>Stabilization:</i>	<i>3-axis</i>
<i>Stationkeeping:</i>	<i>±0.1°</i>
<i>Peak Power Required:</i>	<i>1235 W.</i>
<i>Eclipse Capability:</i>	<i>100%</i>
<i>Life Expectancy:</i>	<i>13.25 years at launch</i>
<i>Reliability:</i>	<i>99.99%</i>
<i>Frequency Bands:</i>	<i>C-Band (4/6 GHz)</i> <i>Ku-Band (11/14 GHz)</i>
<i>Transponder Configuration:</i>	
<i>C-Band:</i>	<i>12 narrowband (36 MHz) transponders using 8.5 Watt, solid-state power amplifiers</i> <i>6 wideband (72 MHz) transponders using 16 Watt traveling wavetube amplifiers</i>
<i>Ku-Band:</i>	<i>6 wideband (72 MHz) transponders using 16 Watt traveling wavetube amplifiers</i>
<i>Redundancy Communication System:</i>	
<i>C-band (36 MHz):</i>	<i>7 for 6 (SSPA)</i>
<i>C-band (72 MHz):</i>	<i>4 for 3 (TWTA)</i>
<i>Ku-band (72 MHz):</i>	<i>7 for 6 (TWTA)</i>
<i>Ku-Band Receivers:</i>	<i>2 for 1</i>
<i>C-Band Receivers:</i>	<i>4 for 2</i>

Alpha Lyracom is proud to initiate the age of private satellite communications to serve a variety of government and industry needs.

Combining advanced technology, inexpensive earth station requirements, direct customer access and a comprehensive range of services, we are an attractive alternative to any form of information transmission available today.

If you or your company would like to find out more about Alpha Lyracom's PAS I and its services, please contact:

Alpha Lyracom Space
Communications, Inc.
One Pickwick Plaza, Suite 270
Greenwich, CT 06830
(203) 622-6664
FAX: (203) 622-9163



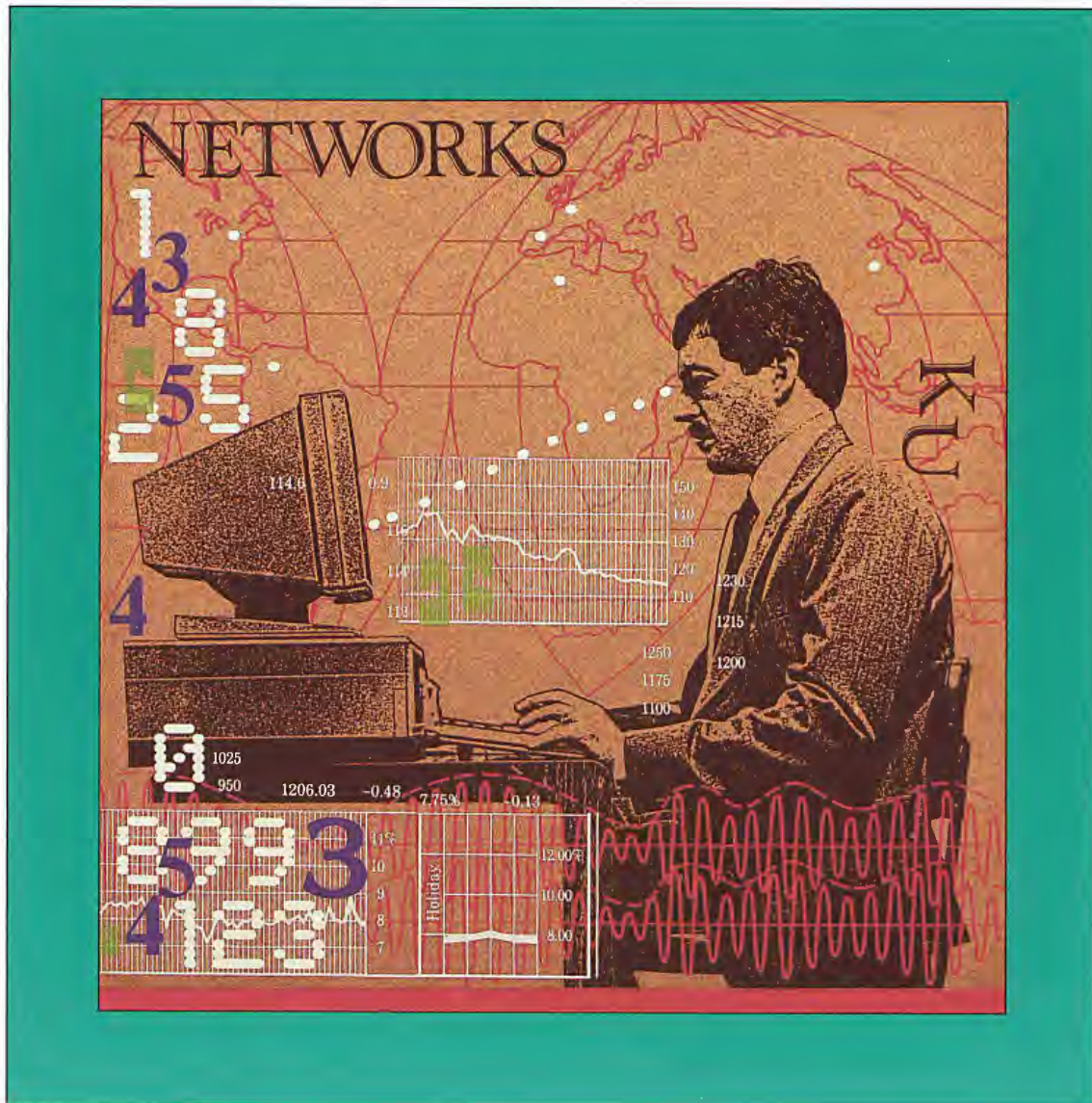
ALPHA LYRACOM®
PAN AMERICAN SATELLITE

Alpha Lyracom Space Communications, Inc. is the exclusive marketing and managing agent for Alpha Lyracom/Pan American Satellite.



ALPHA LYRACOM
PAN AMERICAN SATELLITE

Data Services





PAS 1 private satellite business networks include voice and data.

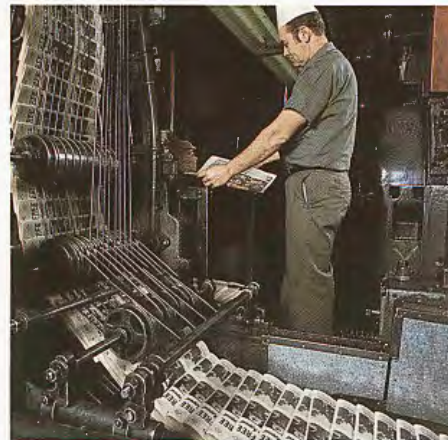
International Satellite Networks

Alpha Lyracom's data services allow multinational businesses to extend the reliability, flexibility and efficiency of their national data networks to overseas facilities and offices in North America, Latin America and Europe. With Alpha Lyracom's PAS 1 satellite customers can combine voice, data, facsimile, video, electronic mail and a host of other vital communications services in a single all-digital network. And, PAS 1's power promotes the use of low-cost VSAT terminals located directly on customer premises.

As the world's first private international satellite system, Alpha Lyracom offers businesses and institutions increased freedom in meeting their international communications needs. From 56 kbps to T1s and higher, Alpha Lyracom can provide the data, voice or video circuits businesses demand. It's the ideal communications technology for:

- Multinational corporations building private networks to link all their offices for voice, data and video communications.
- Companies with remotely-located mining and offshore drilling facilities that cannot be reached by terrestrial lines.
- Financial institutions needing instant access to international business centers for electronic funds transfers and credit card processing.

- Newspapers and magazines developing or extending remote publishing services.
- International news wire, weather and financial reporting services.
- National governments and institutions that need satellite services to link facilities and offices.



PAS 1 meets publishers' needs for multiple printing locations.

End-to-End Service

North America

Alpha Lyracom uplinks both C-band and Ku-band intercontinental traffic through its International Gateway in South Florida. Customers can deliver their communications to the Gateway using a long-distance carrier, or Alpha Lyracom will provide channels from users' North American offices to the Gateway. Customers with communications to Europe can

also directly access PAS 1 using their own earth stations or earth stations provided by third parties anywhere within the coverage areas.

Europe and Latin America

In Western Europe and throughout Latin America, Alpha Lyracom will assist satellite users in establishing end-to-end circuits. Through a network of affiliated data communications companies throughout Latin America, Alpha Lyracom can provide full, end-to-end services to international customers. In both Latin America and Europe, users can access the satellite through shared antennas, with terrestrial links, or dedicated antennas, located directly on customer premises.

Alpha Lyracom customers will have complete flexibility in designing and reconfiguring their networks, subject, of course, to any existing national regulations.

Flexible Network Design

Alpha Lyracom's PAS 1 satellite can accommodate a variety of network architectures, including:

Data Broadcasting Networks, where a single source delivers traffic to multiple facilities. Spread spectrum technology allows multiple 19.2 kbps data streams to be delivered to many small (60 cm), inexpensive earth stations. For point-to-multipoint applications, this technology is extremely cost effective.

Hub-Based VSAT Networks, in which a central hub facility communicates with several very small aperture terminals (VSATs), offer the most economical means of establishing large corporate data networks. These VSAT antennas can be as small as 1.2 meters, resulting in significant ground segment savings. Individual and shared hub systems can readily utilize PAS 1's high powered beams. And, most importantly, these services can be established for the first time between North America and Europe using PAS 1's Ku-band common uplink

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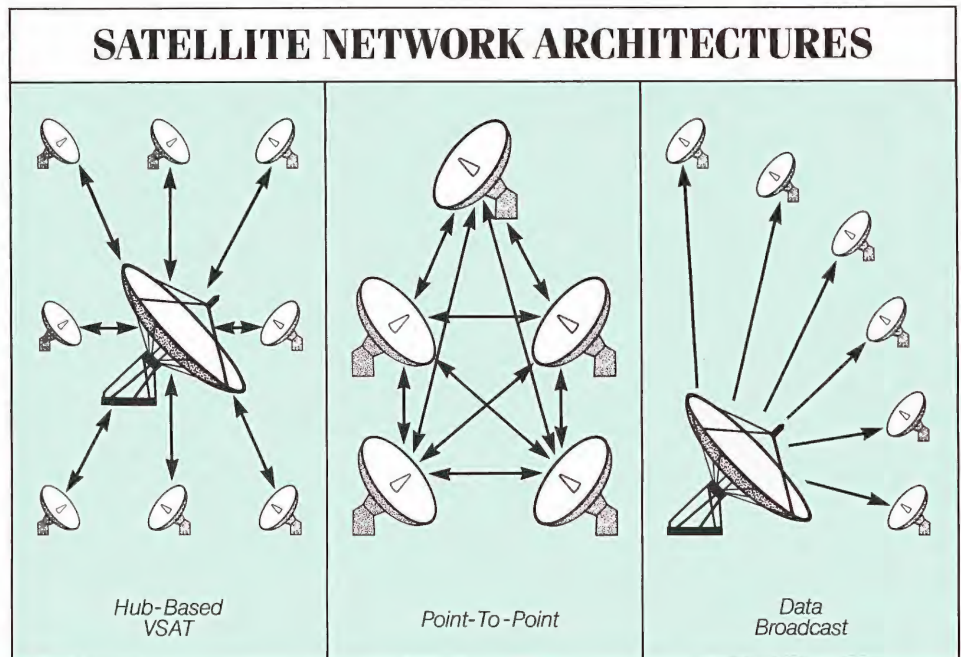
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Note that due to the satellite's high power, there is no compromise between using small antennas and achieving excellent Bit Error Rates and system margins. Alpha Lyracom's data services are more than competitive with existing international satellite data services, and far superior to international digital services previously available in Latin America.



With PAS 1, customers can use data receive antennas as small as 60 cm.



PAS 1's power allows for flexible network design.

PAS 1 Coverage

The PAS 1 satellite uses a combination of regional and spot beams to provide national, regional and intercontinental distribution of voice and data signals.

Intercontinental Services

Ku-band links North America with Western Europe, and C-band connects the U.S. with Latin America. Alpha Lyracom can distribute traffic to any of these destinations from the U.S., either via direct customer access to the satellite or through our South Florida International Gateway.

Regional Services

For regional businesses in South America and Europe, users can access the satellite directly. European customers are able to establish regional communications networks, using PAS 1 as a European satellite. In the same way, customers in Central and South America and the Caribbean can build regional networks using PAS 1 as a Latin American satellite.

National Services

PAS 1 covers Latin America with three C-band spot beams, designed for national data services, government administrative networks or for telephone services within a specific country. National data services can be arranged by working with the Alpha Lyracom affiliate in each country.

PAS 1's European Beam can similarly be used for national services, particularly for data distribution services and digital video conferencing.



High-speed data capability serves the communications needs of large EDP centers.

By using combinations of these various types of coverage, Alpha Lyracom customers can design a network to fit their most demanding communications needs, and minimize their costs in the process.

Alpha Lyracom Assistance

Alpha Lyracom engineers and data communications specialists are available to assist in defining the services you need. Together with a network of experienced affiliates, ALSC can help customers build and maintain state-of-the-art satellite-based data networks.

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Broadcast Services

43%	41%	24%	44%	46%	12%	33%	58
13%	13%	28%	27%	24%	5	17%	40
16%	16%	29%	28%	29%	22%	9%	33
25%	5	26%	26%	26%	24%	10%	12
29%	29%	21	20%	20%	33%	12%	12
24%	24%	29%	29%	29%	26%	21%	12
25%	24%	36	35%	35%	27%	16%	12
22%	22%	14%	14%	14%	53%	41%	12

Alpha Lyracom Broadcast Services

With Alpha Lyracom's video and audio services, broadcasters can finally have it all: the power of a domestic satellite, the reach of an international system and the flexibility to create, design and maintain control over your own networks. Plus, end-to-end cost savings that result from independent ownership and technology designed to meet today's broadcasting needs.

As the world's first private international satellite system, Alpha Lyracom brings new freedom to the realm of international broadcasting. With direct satellite access, you can construct and contract for the networks and services you need.

In addition, the power of our PAS I satellite permits the use of small, inexpensive earth stations for both transmission and reception. These small, low cost earth stations deliver high-quality signals and also make it possible to locate distribution facilities practically anywhere: from a rooftop in the city to a remote rural area.

Using a combination of regional and spot beams on PAS I, Alpha Lyracom offers broadband coverage throughout Latin America, the Caribbean, the U.S. and Europe. As a result, our service is ideal for broadcasters, businesses, governments and others who require a cost-effective means for transmitting and receiving quality television signals domestically or internationally.



Pan American Satellite delivers broadcast quality signals to stations in North America, Latin America and Western Europe.

The PAS I user is not subject to any unnecessary restrictions on the type of earth station used or on the operation of the transponder.

Dedicated Capacity

Alpha Lyracom provides customers with dedicated capacity on a flexible, full- or part-time lease basis. Since ours is a private satellite—unencumbered by restrictive international tariffs and usage limits—you can tailor the access plan to meet your precise needs.

Long-term, Full-time Use.

Alpha Lyracom offers full-time use contracts covering periods of 5, 7, 10 years or longer. This gives customers guaranteed satellite access 24 hours a day, 365 days a year.

Long-term, Part-time Use.

Alpha Lyracom also offers part-time use contracts for periods of a year or longer. This gives you guaranteed satellite access one or more hours per day, one or more days per week. Alternatively, we can arrange to provide you with a requirements agreement with a specified number of access hours per year, which may be used at your discretion.

Applications

Alpha Lyracom's Broadcast Service opens up a wide range of opportunities to help you create and expand programming coverage. Our service makes it possible to link major urban centers—on the national or international level—and to expand the reach of your network to remote population centers within a country. Our dedicated capacity particularly suits the needs of:

- Broadcasters • Pay TV Services
- Cable Networks • Program Syndicators
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Using our service, customers can:

- Distribute live sports or special events programming to networks and affiliates located anywhere within PAS I's coverage area;



Broadcasters can configure any network that meets their needs.

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Cover special events using Pan American Satellite's flexible service arrangements.

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PAS I Coverage

PAS I uses a combination of C- and Ku-band transponders to provide national, regional and international distribution of broadcast signals. Two major types of service are available on PAS I: Intercontinental and Domestic/Regional.

Intercontinental Service

PAS I Intercontinental Service is for customers who wish to distribute

high-quality signals throughout the Caribbean, Latin America, the U.S. and Europe.

By leasing an international transponder from Alpha Lyracom, customers can receive the same quality and reliability for their international service that they've come to expect from domestic satellites.

PAS I Intercontinental Service allows for the design of the most cost-effective and flexible networks available today. By simply placing a small earth station where you want, you can have direct satellite access to any location in our coverage area.

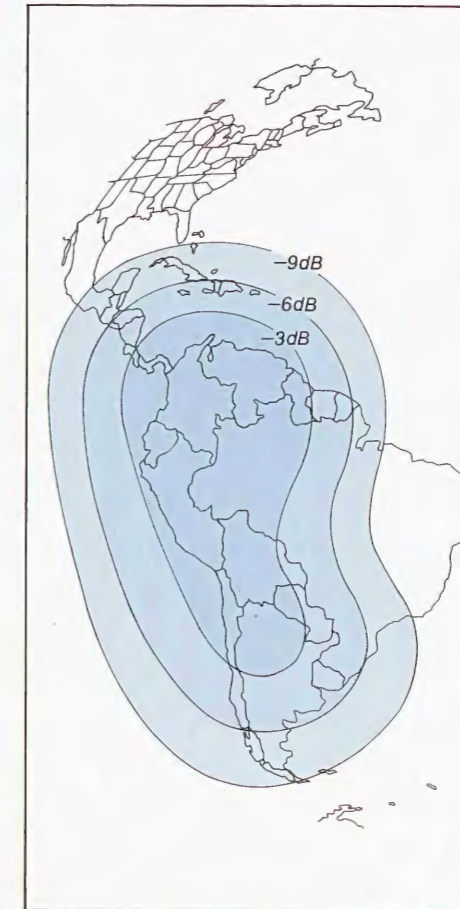
Domestic/Regional Service

PAS I Domestic Spot Beam and Regional Service provides the equivalent of a dedicated communications satellite for individual countries or groups of countries within the PAS I coverage area, at a fraction of a dedicated satellite's cost.

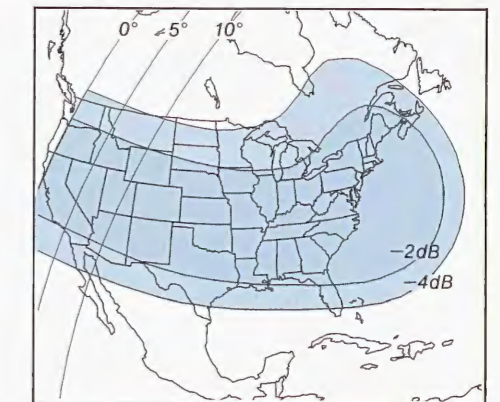
The service can provide full national or regional coverage of even the most remote population centers; facilities for extensive educational networks; capabilities for establishing business, military and government video-conferencing networks; direct-to-home television reception; and the ability to utilize multiple uplinks for regional broadcast and news distribution.

Dedicated capacity for domestic use on PAS I is available for purchase from Alpha Lyracom.

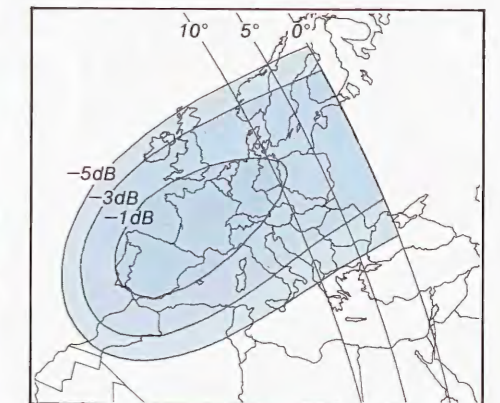
PAS I International coverage EIRP values (±1 dB)



Latin American beam has a 37dBW beam center.



U.S. coverage provides a 45dBW beam center.



Pan American Satellite covers Europe with a 47dBW beam center.

Typical Antenna Sizes

	UPLINK		DOWNLINK		
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Ku-Band					
Europe	7 Mtr	2.4 Mtr	1.8 Mtr	2.4 Mtr	3.7 Mtr
U.S.	5.6 Mtr	2.4 Mtr	2.4 Mtr	3 Mtr	4.5 Mtr
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Advanced satellite technology allows small, inexpensive antennas to be used throughout the coverage area.

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Alpha Lyracom is available to assist you in setting up and managing your satellite network. Working with your own specialists, we can help to determine the equipment and capabilities that will deliver full value on your investment.

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Broadcast Services



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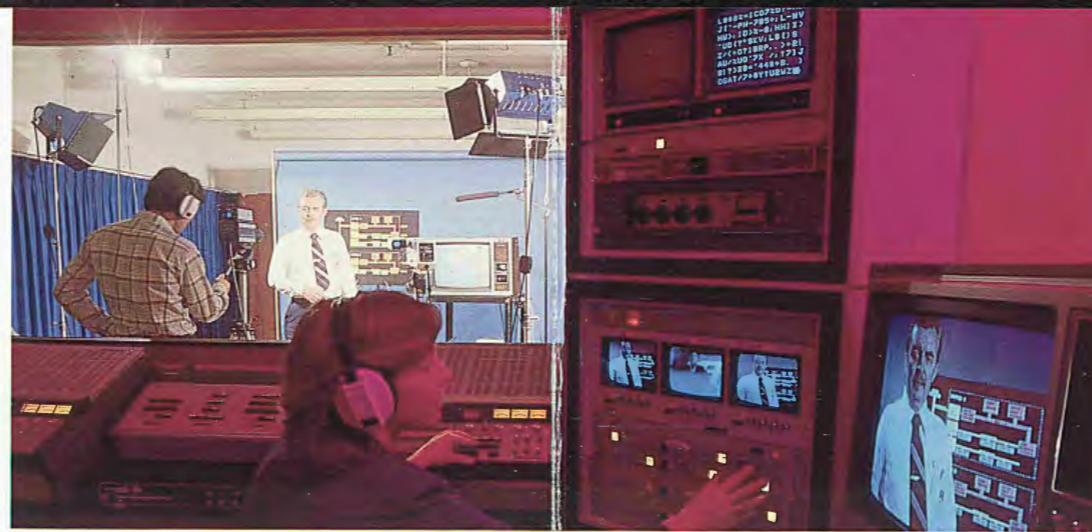
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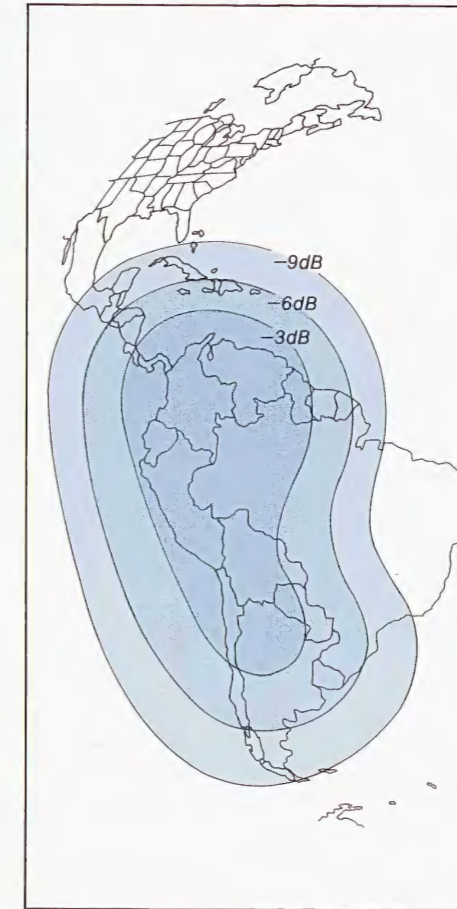
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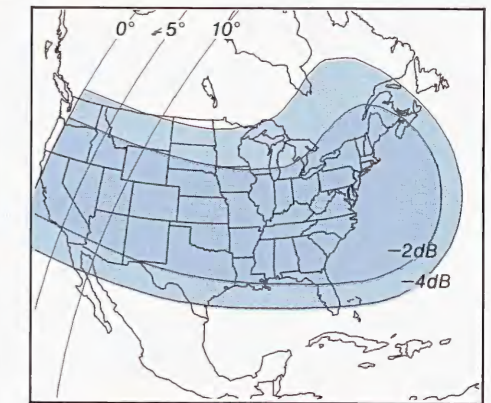
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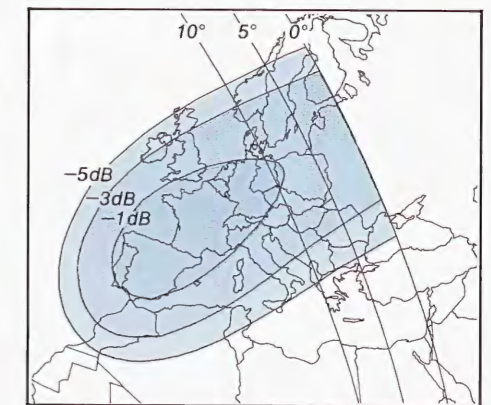
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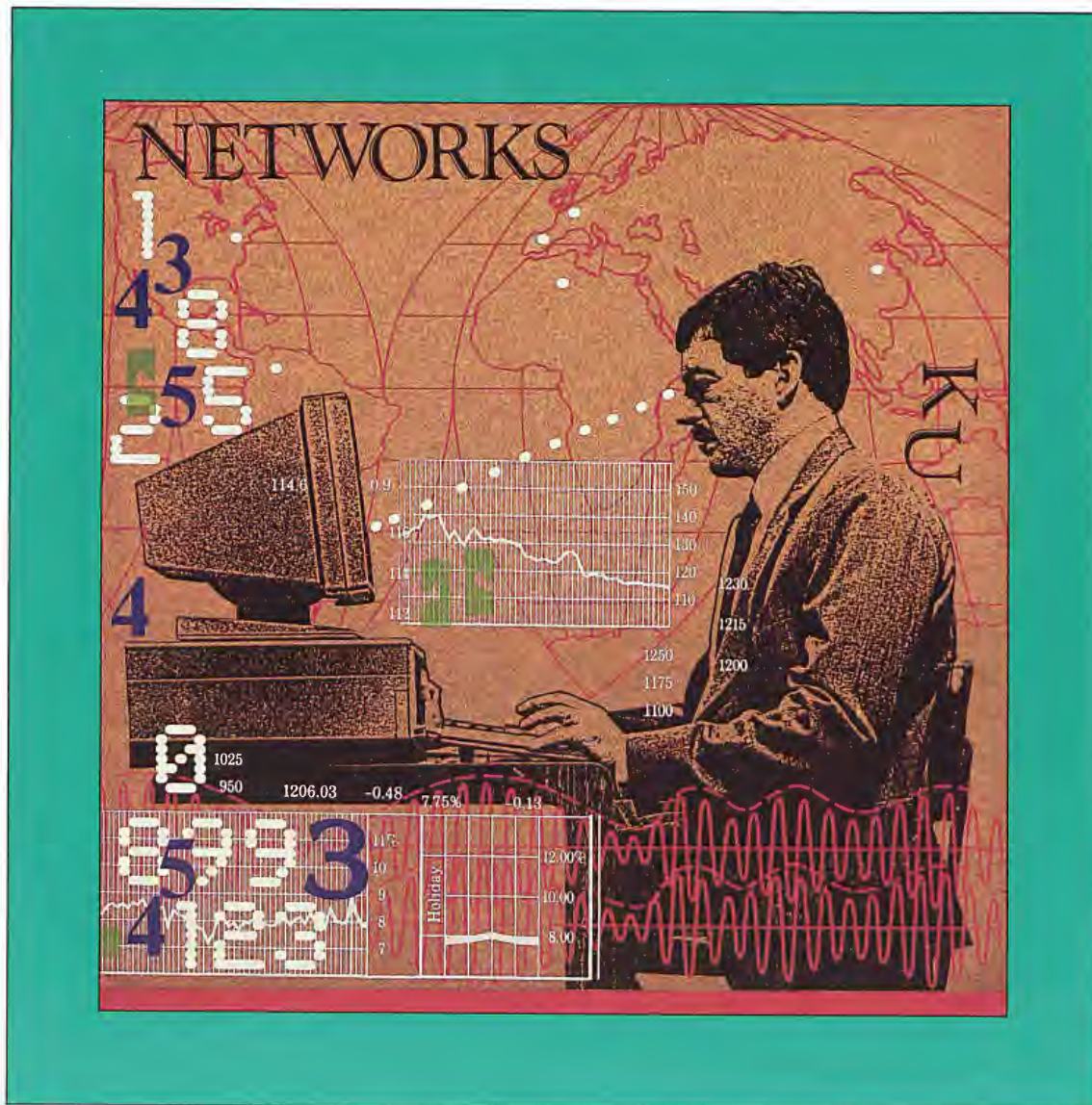
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Data Services





PAS 1 private satellite business networks include voice and data.

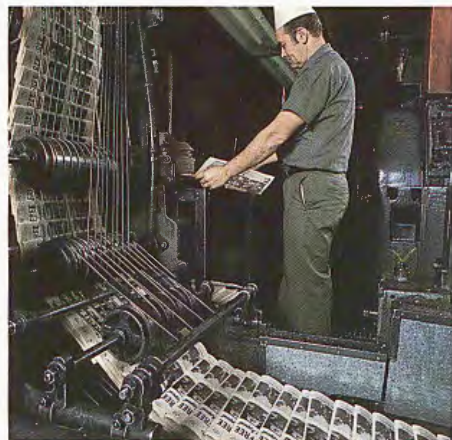
International Satellite Networks

Alpha Lyracom's data services allow multinational businesses to extend the reliability, flexibility and efficiency of their national data networks to overseas facilities and offices in North America, Latin America and Europe. With Alpha Lyracom's PAS 1 satellite customers can combine voice, data, facsimile, video, electronic mail and a host of other vital communications services in a single all-digital network. And, PAS 1's power promotes the use of low-cost VSAT terminals located directly on customer premises.

As the world's first private international satellite system, Alpha Lyracom offers businesses and institutions increased freedom in meeting their international communications needs. From 56 kbps to T1s and higher, Alpha Lyracom can provide the data, voice or video circuits businesses demand. It's the ideal communications technology for:

- Multinational corporations building private networks to link all their offices for voice, data and video communications.
- Companies with remotely-located mining and offshore drilling facilities that cannot be reached by terrestrial lines.
- Financial institutions needing instant access to international business centers for electronic funds transfers and credit card processing.

- Newspapers and magazines developing or extending remote publishing services.
- International news wire, weather and financial reporting services.
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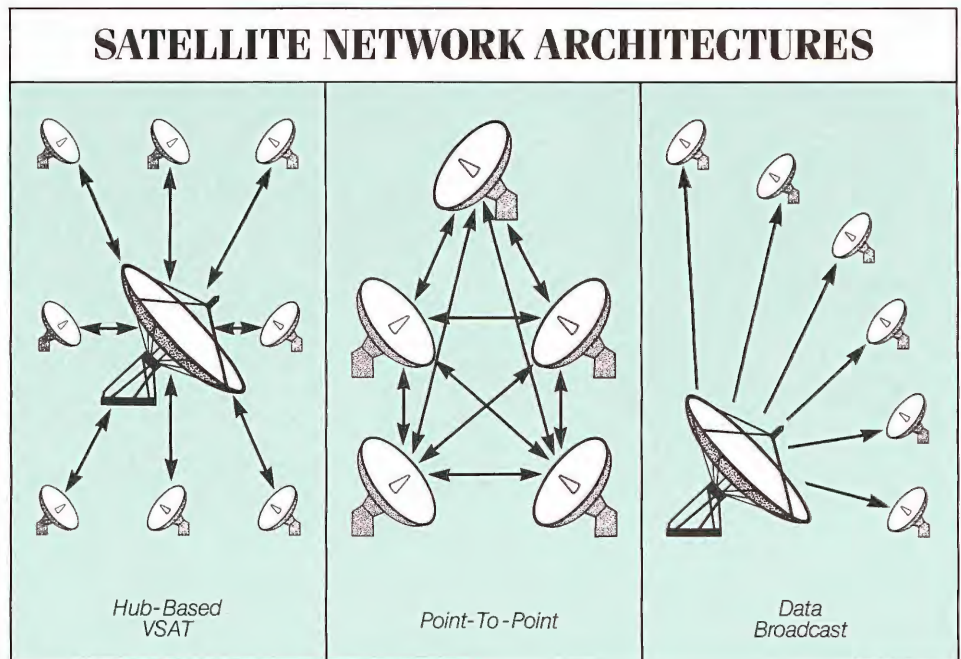
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