ShawPittman LLP

*A Limited Liability Partnership Including Professional Corporations*

March 7, 2002

**Via Electronic Filing**
Mr. William F. Caton
Acting Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

**Re: Mobile Satellite Ventures Subsidiary LLC**
***Ex Parte* Presentation**
**IB Docket No. 01-185**
**ET Docket No. 95-18**
**File No. SAT-ASG-20010302-00017 et al.**

Dear Mr. Caton:

On March 5, 2002, representatives of Mobile Satellite Ventures Subsidiary LLC ("MSV") met with Commission staff to discuss MSV's proposal to deploy an ancillary terrestrial component ("ATC") to supplement its mobile satellite service ("MSS") in the L-band. A list of the attendees is attached as Exhibit A. MSV distributed and discussed the information contained in the attached set of presentation materials. MSV explained that severing MSS operations from terrestrial operations in the L-band will cause debilitating interference to current and future satellite operations in the band. Terrestrial operations in the L-band can occur only if the satellite and terrestrial operations are integrated under the control of one entity. MSV further explained that the international coordination process and priority and preemptive access requirements in the L-band for aeronautical and maritime safety services are a further obstacle to severing terrestrial operations.

Please direct any questions regarding this matter to the undersigned.

Very truly yours,

David S. Konczal

cc: Attendees listed on Exhibit A

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# Exhibit A

## FCC

### International Bureau

Don Abelson
Jim Ball
Breck Blalock
Richard Engelman
Howard Griboff
Trey Hanbury
Paul Locke
Ronald Repasi
Thomas Tycz
Douglas Webbink

### Wireless Telecommunications Bureau

David Furth
Kathleen Ham
William Lane
Blaise Scinto
John Spencer
Martha Stancill
Thomas P. Stanley
Margaret Wiener
Mary Woytek

### Office of Engineering and Technology

Tom Derenge
Bob Eckert
Julius Knapp
Geraldine Matise
Gary Thayer

### Office of Plans and Policy

Evan Kwerel
Robert Pepper

## Mobile Satellite Ventures Subsidiary LLC

Carson Agnew
Bruce Jacobs (Shaw Pittman LLP)
Peter Karabinis
David Konczal (Shaw Pittman LLP)
Lon Levin
Serge Nguyen

## ICO

Mark Grannis (Harris, Wiltshire, and Grannis)
Suzanne Hutchings
Paul Regulewski
Cheryl Tritt (Morrison and Foerster)
Lawrence Williams

# MSV's Next Generation Satellite System

## The Need to Integrate ATC with Satellite Service

Presented to the

Federal Communications Commission

March 5, 2002

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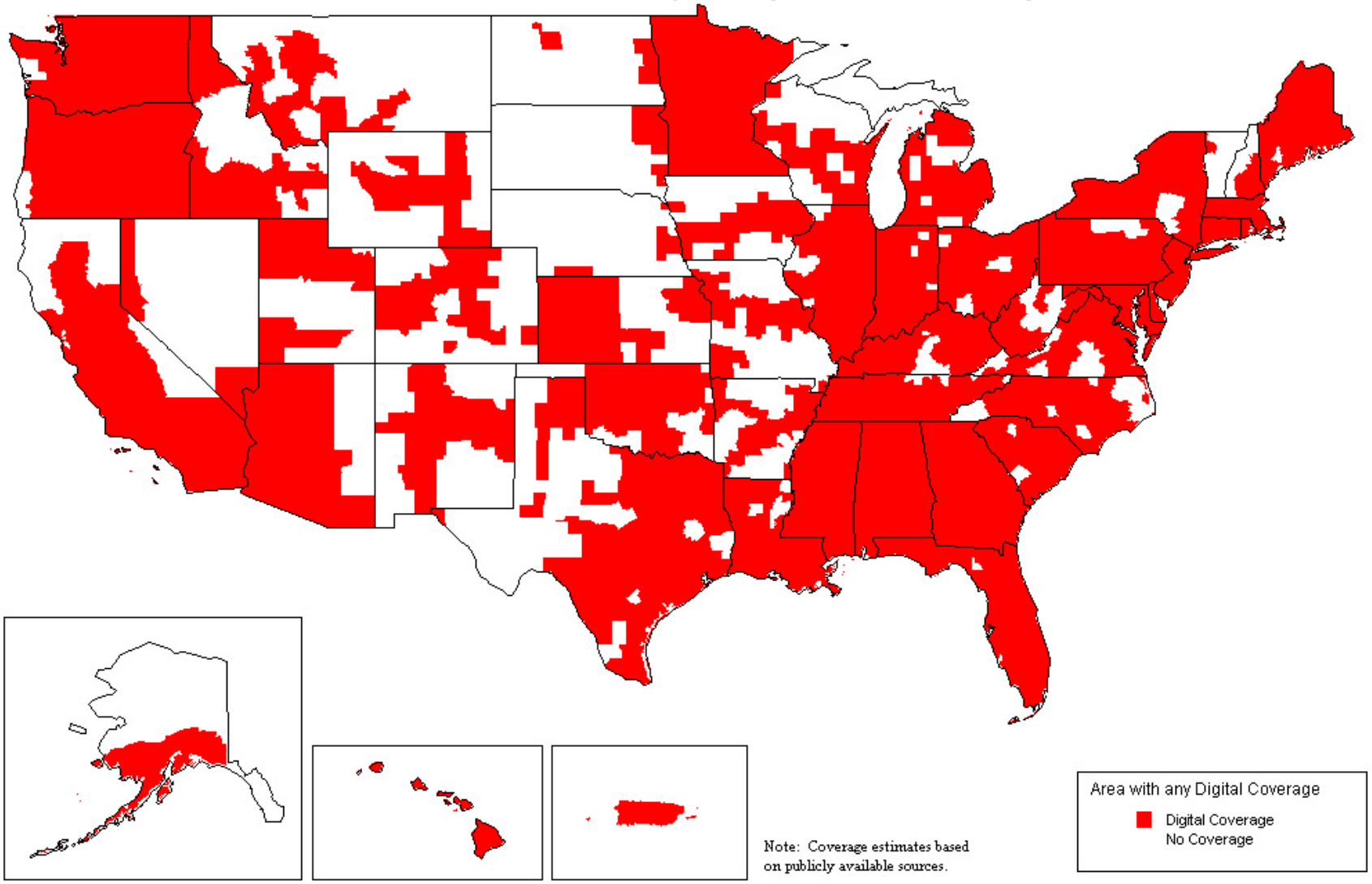
# Counties With Any Digital Coverage

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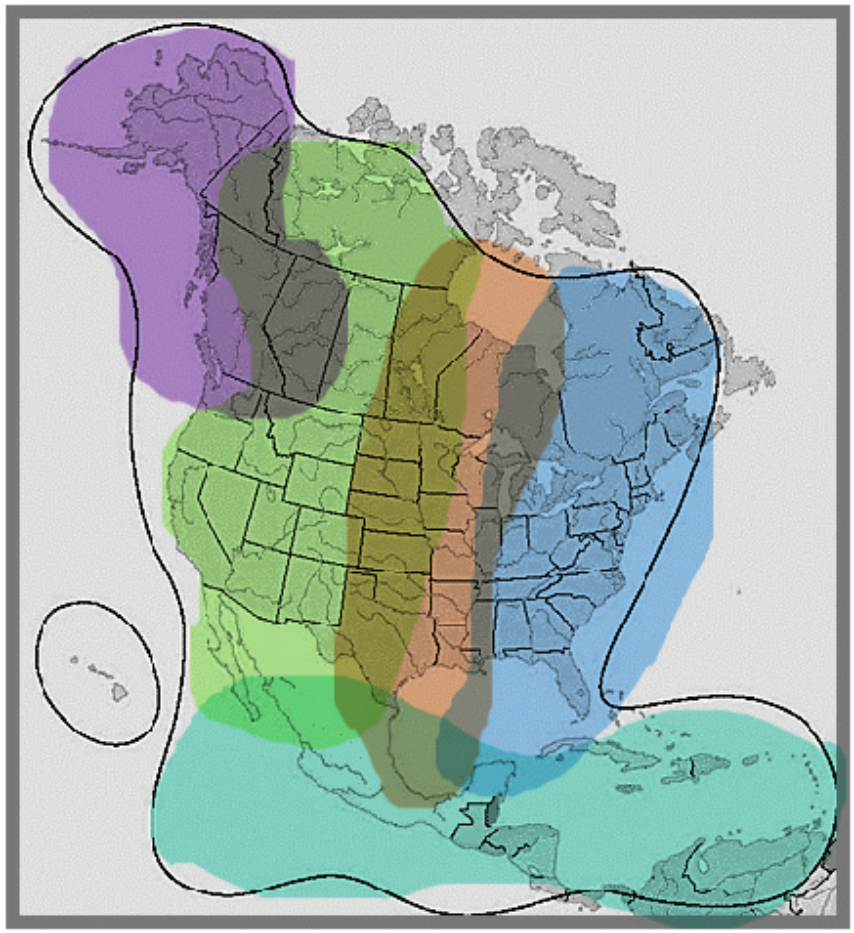
Source: FCC, *Sixth Annual CMRS Competition Report*, June 20, 2001

# MSV's Current System Coverage



- Continental U.S.
- Canada
- Gulf of Mexico
- Caribbean
- Alaska and Hawaii
- Up to 200 miles off-shore
- Central America
- Northernmost South America

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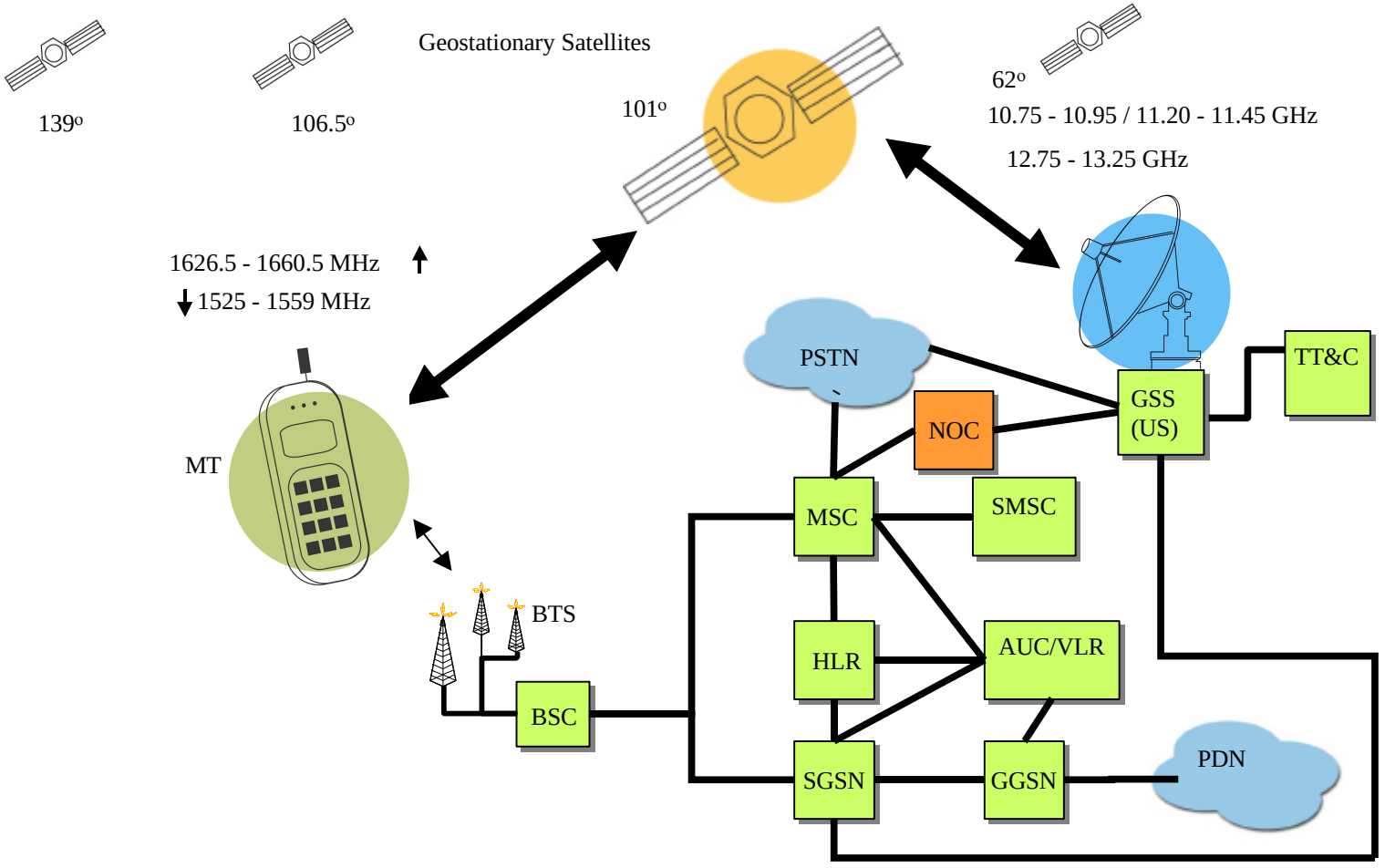
# MSV's Integrated Satellite-Ancillary Network (Standard GSM Architecture)

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# Relevant MSV System Parameters
# **(For Current & Next Generation System)**

| | CURRENT GENERATION | NEXT GENERATION | |
|---|---|---|---|
| **SATELLITE CHARACTERISTICS** | | | |
| PARAMETER | | | |
| Satellite Longitudes | 101 W and 106.5 W | 101 W and 106.5 | |
| Satellite Transmit Band | 1530 –1559 MHz | 1525 –1559 MHz | |
| Mobile Terminal Transit Band | 1631.5 – 1660.5 MHz | 1626.5 – 1660.5 MHz | |
| Polarization | RHCP | RHCP | |
| Peak Antenna Gain | 29 dBi | 42.5 dBi | |
| System Temperature | 600 K | 450 K | |
| Peak G/T | 3.7 dBK | 16 dBK | |
| Total EIRP @ Peak Max/beam | 56.6 dBK | 80 dBK | |
| Carrier Bandwidth | 6 kHz | 200 kHz Satellite Transmit<br>50 KHz Satellite Receive | |
| **MOBILE TERMINAL CHARACTERISTICS** | | | |
| | | Satellite | Terrestial |
| Access Mode | SCPC | TDMA | TDMA |
| Mobile Terminal Maximum EIRP | 12.5 – 16.0 dBW | 5 dBW | 0 dBW |
| Polarization | RHCP | RHCP | Linear |
| Carrier Bandwidth-Transmit | 6 KHz | 50 KHz | 200 KHz |
| Carrier Bandwidth-Receive | 6 KHz | 200 KHz | 200 KHz |
| Channels per carrier (Rx/Tx) | 1 | 8/32 | 8/8 |
| **BASE STATION CHARACTERISTICS** | | | |
| | | | Terrestial |
| Access Mode | | | TDMA |
| BTS Maximum | | | 19.1 dBW |
| Polarization | | | LHCP |
| Carrier Bandwidth-Transmit | | | 200 kHz |
| Carrier Bandwidth-Receive | | | 200 kHz |
| Channels per carrier | | | 8 |

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# Potential Intra-System Interference from MSV's Terminals to MSV's Satellite **(from ATC operations)**

| Parameter | Units | Values |
|---|---|---|
| Link Margin Degradation | dB | 0.25 |
| MSV Satellite Antenna Gain (average per beam) | dBi | 41 |
| MSV Satellite Receiver Noise Temperature | K | 450 |
| MSV Satellite Receiver Noise Spectral Density | dBW/Hz | -202.1 |
| | | |
| Maximum MSV Ancillary Terminal EIRP | dBW | 0 |
| MSV Terminal Carrier Bandwidth (ancillary mode) | kHz | 200 |
| MSV Terminal EIRP Spectral Density | dBW/Hz | -53.0 |
| | | |
| Free Space Loss | dB | 188.8 |
| Average Shielding | dB | 10 |
| MSV Satellite Receive Antenna Discrimination (Average) | dB | 10 |
| Average Power Reduction due to Closed-Loop Power Control | dB | 6 |
| Average Power Reduction due to Variable-Rate Vocoder | dB | 7.4 |
| Average Polarization Isolation (Linear to Circular) | dB | 3 |
| Voice Activity Factor | dB | 1 |
| Received Interfering Signal Spectral Density | dBW/Hz | -238.2 |
| Max Number of Co-channel ATC Carriers per Co-channel Spot Beam Vicinity | | 244 |
| Number of Users per Carrier | | 7 |
| Maximum Number of ATC Users per Co-channel Spot Beam Vicinity | | 1,707 |
| Number of Co-Channel Satellite Beam Vicinities over CONUS | | ~10 |
| Total Number of Allowed Ancillary Co-Channel Carriers Over CONUS | | 2,438 |

# Potential Co-Channel Interference from MSV's Terminals to Inmarsat 3 & 4 Satellites **(from ATC operations)**

| Parameter | Units | Inmarsat 3 Satellite | Inmarsat 4 Satellite | | |
|---|---|---|---|---|---|
| Inmarsat Satellite G/T | dB/K | -1.45 | 13 | 13 | 13 |
| Inmarsat Satellite Antenna Gain | dBi | 27 | 41 | 41 | 41 |
| Inmarsat Satellite Receiver Noise Temperature | K | 700 | 650.0 | 650.0 | 650.0 |
| Inmarsat Satellite Receiver Noise Spectral Density | dBW/Hz | -200.1 | -200.5 | -200.5 | -200.5 |
| | | | | | |
| Maximum MSV Terminal EIRP | dBW | 0.0 | 0.0 | 0.0 | 0.0 |
| MSV Terminal Carrier Bandwidth | kHz | 200 | 200 | 200 | 200 |
| MSV Terminal EIRP Spectral Density | dBW/Hz | -53.0 | -53.0 | -53.0 | -53.0 |
| | | | | | |
| Free Space Loss | dB | 188.8 | 188.8 | 188.8 | 188.8 |
| Average Shielding | dB | 10 | 10 | 10 | 10 |
| Inmarsat Satellite Receive Antenna Discrimination | dB | 22 | 20 | 25 | 30 |
| Average Power Reduction due to Closed-Loop Power Control | dB | 6 | 6 | 6 | 6 |
| Average Power Reduction due to Variable-Rate Vocoder | dB | 7.4 | 7.4 | 7.4 | 7.4 |
| Average Polarization Isolation (Linear to Circular) | dB | 3 | 3 | 3 | 3 |
| Voice Activity Factor | dB | 1 | 1 | 1 | 1 |
| Received Interfering Signal Spectral Density | dBW/Hz | -264.2 | -248.2 | -253.2 | -258.2 |
| $\Delta$ T/T Increase per MSV carrier | % | 0.00004 | 0.0017 | 0.0005 | 0.0002 |
| Maximum CONUS-wide Frequency Reuse | | 2,000 | 2,000 | 2,000 | 2,000 |
| Total $\Delta$ T/T Increase based on maximum reuse across CONUS | % | 0.08 | 3.37 | 1.06 | 0.34 |

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# Spectrum Access

- MSV's access to spectrum is subject to international frequency coordination and the requirement of the ITU radio regulations to provide intra-system priority in the upper L-band to aviation safety service and in the lower L-band to maritime safety communications.

- The band is shared in North America by six systems (one of which is to be launched in 2003) licensed by the U.S., Canada, U.K. (Inmarsat), Mexico, Russia, and Japan.

- The Mexico City MoU of 1996 provides for annual coordination to divide the spectrum on the basis of, among other things, each system's actual usage and realistic projections.

- Most recent annual agreement was for 2000, giving the U.S. system access to a relatively small amount of the band.

- Currently, there is no annual agreement, so systems are operating on only a non-interference basis.