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May 15, 1995

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

Mr. William F. Caton
Secretary
Federal Communications Commission
1919 M Street, N.W.
Room 222
Washington, D.C. 20554

Re: Ex Parte Presentation, IB Docket No. 95-91

Dear Mr. Caton:

Attached is material presented to Commission staff in the course of discussions during the weeks of April 22 and April 29. It provides results of Primosphere L.P.'s analyses of the coordination environment between potential U.S. satellite digital audio radio systems and Canadian operations in the 2310-2360 MHz bands and should be associated with the above docket.

If you have any questions, please contact the undersigned.

Sincerely yours,

Leslie A. Taylor

Leslie A. Taylor

cc: Maureen O'Connell, Office of Commissioner Quello
Jane Mago, Office of Commissioner Chong
David Siddall, Office of Commissioner Ness
Julius Genachowski, Office of the Chairman
Scott Harris, Chief, International Bureau
Tom Tycz, Chief, Satellite and Radiocommunication Division
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Coordination of U.S. Satellite Digital Audio Radio Systems with Canadian Fixed Service and Aeronautical Mobile Telemetry Systems

Coordination of U.S. Satellite Digital Audio Radio Systems with Canadian Fixed Service Aeronautical Mobile Telemetry Systems doesnot require withholding portions of the 2310-2360 MHz band from licensing to U.S. systems.

Attached is Primosphere L.P.'s detailed analysis of the coordination environment with regard to U.S. satellite digital audio radio systems and fixed and aeronautical mobile telemetry systems licensed in Canada. A careful analysis of information provided by the Canadian Government regarding systems requiring coordination, leads to the conclusion that such coordination is quite manageable. This analysis supports the ongoing claims of Primosphere and other SDARS applicants that coordination with Canada does not require the Commission to reserve SDARS spectrum to facilitate coordination.

As described more fully in the accompanying analysis, reserving portions of the band is unnecessary for the following reasons:

- There are only 231 Fixed Microwave Relays in the SDARS band. 170 of these sites could be accommodated by allowing a small increase in N/I into the Fixed links. Microwave relay systems operate with substantial margins, thereby minimizing the possibility of interference from other systems, even with increases in the N/I.

- **Only 3** of the affected Fixed sites are located in the upper 25 MHz of the SDARS band. The lower 12.5 MHz of the SDARS band contains the most fixed service sites (190).

- There are **only 8** aeronautical telemetry sites in the entire 2310 - 2360 MHz band. These sites are distributed over the upper 37.5 MHz of the SDARS band. The 120 MHz Canadian allocation for aeronautical telemetry could easily accommodate relocation of these links. Most aeronautical telemetry systems are tunable, facilitating such a change.

Moreover, from a policy and strategic perspective, setting aside spectrum for coordination in advance of licensing and coordination is inconsistent with U.S. precedent. See, e.g., Big LEO Report and Order, 9 FCC Rcd 5936 (1994), wherein the Commission adopted a band segmentation plan for Big LEO systems, subject to possible adjustment based on U.S. negotiations concerning the GLONASS system. In addition, the Big LEO band plan, and the subsequent Big LEO licenses, are subject to coordination with systems of other countries.

In summary, although some additional coordination efforts are needed, the remaining issues do not justify withholding spectrum to facilitate coordination with Canada.

SDARS CANADIAN FREQUENCY COORDINATION

April 26, 1996

Prepared By:
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BACKGROUND

The Canadian Table of Frequency Allocations allocates the band 2300 to 2360 MHZ to Fixed Microwave Relay and the band 2300 to 2483.5 MHZ to Mobile Telemetry. Primosphere has analyzed the potential for SDARS interference with existing Canadian spectrum usage under these allocations. The analysis was performed using data provided by Canadian Government sources. Information was provided on frequencies, receive antenna patterns, power levels and signal usage at 239 ground receive sites.

FIXED MICROWAVE RELAY

We have performed extensive analysis of coordination with existing Canadian Fixed Microwave Relay links in the band 2310-2360 MHZ. Based on Canadian usage data there are 231 existing Canadian receive sites operating in the SDARS band. Of these 137 are in the band 2310-2315 MHZ and 191 or over 80 % are in the band 2310-2322.5 MHZ, the lowest 12.5 MHZ segment of the SDARS band.

Based on our analysis we have calculated the number of sites, by band segment, exceeding two levels of increased noise. This was done using both Canadian and ITU antenna specifications. The results are summarized in the following table:

Number of Sites	**2310-2322.5 (MHZ)**	**2322.5-2335 (MHZ)**	**2335-2347.5 (MHZ)**	**2347.5-2360 (MHZ)**
Before Coordination Process	190	36	2	3
I/N 1.0 dB Existing Antenna	186	36	2	3
I/N 1.0 dB ITU Antenna	45	13	2	1

The selected I/N levels are very generous and higher levels should be acceptable to high link margin Fixed Microwave Relay links.

The above frequency coordination analysis is preliminary in nature. It shows that the top 25 MHZ of the band (2335-2360 MHZ) is relatively clear with only 3 affected sites and the bottom half of the band (2310-2335 MHZ) has 58

affected sites. Thus, of the 231 Canadian Fixed Microwave Relay sites operating in the SDARS band only 61 require further investigation. Technically, this is a manageable number of sites warranting further investigation and a small number at this point in a frequency coordination with existing terrestrial services. The next step is to analyze each link to determine whether the I/N can be increased without degrading link performance. Another area to be explored is the possibility of moving the large number of links at 2311 MHZ into the band 2300-2310 MHZ.

AERONAUTICAL TELEMETRY

There are only eight Aeronautical Telemetry receive sites in Canada operating in the SDARS band. Each site operates at multiple frequencies in the band of interest. In addition there are two more sites operating in the band 2360 to 2390 MHZ. In summary Canadian usage of the SDARS band for Aeronautical Telemetry is as follows:

BAND SEGMENT USAGE	**2310.0 - 2322.5 (MHZ)**	**2322.5 - 2335.0 (MHZ)**	**2335.0 - 2347.5 (MHZ)**	**2347.5 - 2360.0 (MHZ)**
Number of Operating Sites	0	8	1	8
Number of Carrier Frequencies Used	None	1	1	5

In the 30 MHZ above the SDARS band there are 10 operational sites using 5 carrier frequencies.

The above frequency coordination analysis is preliminary in nature. Based on the limited data provided by Canada only changes in carrier frequency plan can be analyzed. The Canadian allocation for Mobile Telemetry is 2300.0 to 2483.5 MHZ and data provided shows usage only in the band 2330.0 to 2390 MHZ. Thus there appears to be over 120 MHZ available for reassignment of mobile telemetry carrier frequencies under the current Canadian Table of Frequency Allocations. Re-tuning of this limited number of sites should be easily accomplished at low cost. Additional data is required to validate this initial conclusion. We must also analyze each link to determine what I/N can be tolerated without degrading link performance.