



2 GHz MSS Spectrum Assignments

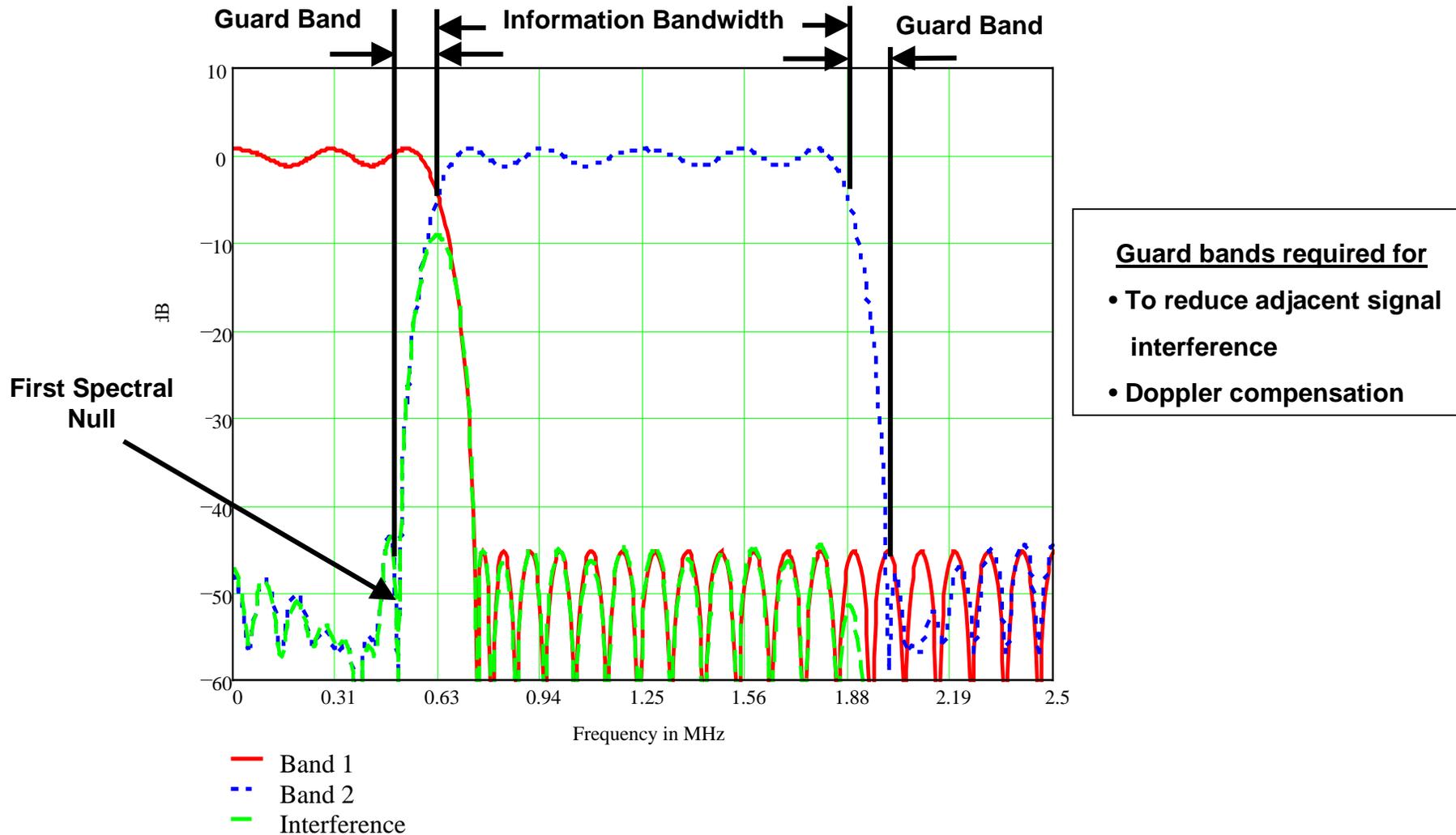
**Boeing Ex Parte Presentation to the FCC
January 11, 2000**

AGENDA

- ◆ **2 GHz MSS Spectrum Assignments**
 - **CDMA vs. TDMA/FDMA Systems**
 - **Global vs. Regional Systems**
 - **Opportunities for Expansion Spectrum**
- ◆ **Boeing's 2 GHz MSS System**
 - **AMS(R)S Authorization**
 - **ITU Filing for alternative Feeder Links**

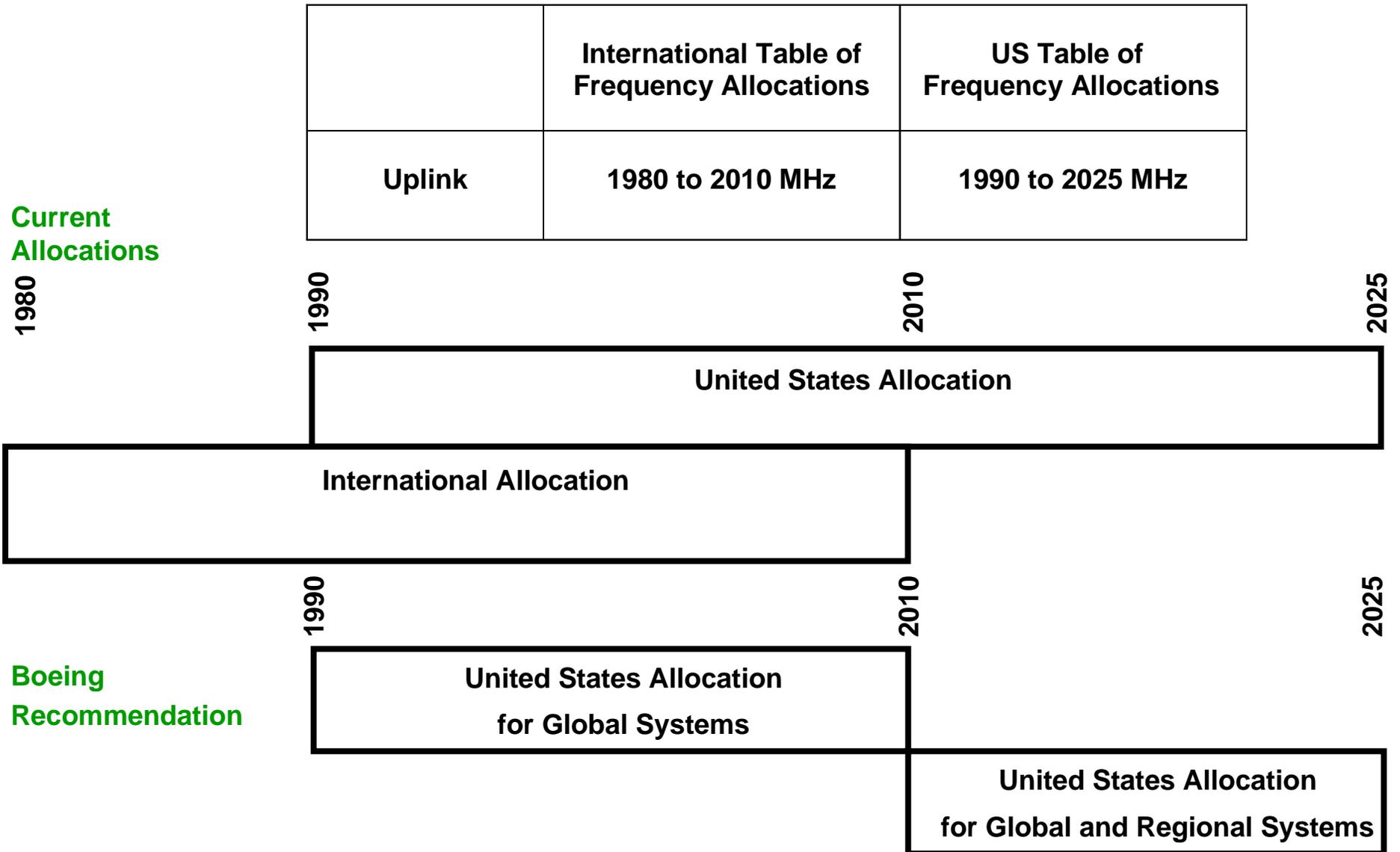
- ◆ **Boeing supports the Commission's goal of maximizing flexibility for 2 GHz MSS licensees.**
- ◆ **To greatly increase spectrum efficiency, cleared spectrum should be segregated between CDMA and TDMA/FDMA systems.**
- ◆ **Dividing cleared 2 GHz MSS spectrum between CDMA and TDMA/FDMA systems would greatly increase the overall traffic capacity of the band.**

- ◆ **An IS-95 type CDMA system can provide three 1.25 MHz channels in a 3.888 MHz allocation.**
- ◆ **An adjacent TDMA/FDMA system would necessitate large guard bands, reducing capacity to just two 1.25 MHz channels.**
- ◆ **In contrast, adjacent CMDA systems could coordinate sharing of the spectral sidelobe bands, greatly reducing needed guard bandwidth.**



- ◆ **In order to segregate between CDMA and TDMA/FDMA systems, each licensee should be required to disclose its multiple access scheme as a part of its selection of “home spectrum.”**
- ◆ **Each applicant was required by Section 25.114(6) & (8) of the rules to provide this information in its application.**
- ◆ **This will not inhibit flexibility since each licensee presumably will select a multiple access scheme prior to launching its first satellite.**

- ◆ **To encourage consistent international allocations, regional 2 GHz MSS systems should be limited to regional spectrum as much as possible.**
- ◆ **In the uplink band, regional 2 GHz MSS systems should be limited to the 2010 to 2025 MHz band.**
- ◆ **In the downlink band, regional 2 GHz MSS systems should be moved eventually to the 2165 to 2170 MHz band to the extent feasible.**



Current Allocations

	International Table of Frequency Allocations	US Table of Frequency Allocations
Downlink	2170 to 2200 MHz	2165 to 2200 MHz



Boeing Recommendation



- ◆ It is probable that not all 2 GHz MSS licensees will launch and operate their proposed MSS systems.
- ◆ Spectrum not used by these systems should be available as expansion spectrum for operating systems.
- ◆ Existing 2 GHz U.S. MSS licensees should have priority in obtaining expansion spectrum in order to ensure their long-term viability.

- ◆ Boeing is continuing to work with the FAA, ICAO and IATA to win additional support for its proposal to provide AMS(R)S.
- ◆ Boeing recently received strong indications from the three organizations of a willingness to work toward a compromise on spectrum issues.
- ◆ Boeing is also participating in the SARPs Drafting Group of the ICAO AMCP WG-A, which is addressing the provision of AMS(R)S by next generation satellite systems.

- ◆ **Boeing has requested authority to operate its feeder links in the Ku-band.**
- ◆ **Boeing's Ku-band feeder links can operate on a spectrally efficient basis.**
- ◆ **As a precaution, Boeing plans to file an ITU Advance Notice for alternative feeder links.**