Adjacent Band Compatibility

Jim Arnold US Department of Transportation

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Fundamental Issues

- GPS is a Timing System
 - Signal transitions are defined by rise times
 - More precisely rise time is know, more precise location can be determined.
- Received Signal Levels are -157 to 162 dBW
 - One perspective:
 - Peak Rock Music Amplified 150dB
 - Weakest sound heard 0 dB
 - Another perspective:
 - 64,750 cubic feet/second through167 feet
 - 1 tablespoon of water per second through 5 feet
- Operates in a High Multipath Environment

Broader receiver bandwidth will allow more precise determination of rise time, increased signal strength, and improved multipath mitigation.





GPS Adjacent Band Compatibility Assessment

- Protect existing and evolving uses of Space-based PNT services vital to:
 - Economic
 - Public Safety
 - Scientific, and
 - National Security needs
- Derive Adjacent-band Transmitter Power Limit Criteria
 - Define levels for an assumed type of adjacent band use
 - GPS antenna/receiver susceptibility
 - Modulation
 - Location/density
- Initially for GPS L1
- Iterated as needed to address other Civil GPS signals

GPS Adjacent Band Compatibility

- Process includes Public Input
 - Defining Representative Receiver(s) per Category
 - Obtaining agreement on Representative GPS Antenna/Receiver Characteristics
 - GPS Use Cases and Interaction Scenarios
- Impact of Modernized GPS and Other GNSS Receivers
 - Europe's Galileo,
 - Russia's GLONASS,
 - China's COMPASS,
 - India's IRNSS, and
 - Japan's QZSS.

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