



12.7-13.25 GHz Notice of Inquiry

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Note: The views expressed in this presentation are those of the author and may not necessarily represent the views of the Federal Communications Commission



12.7-13.25 GHz band

- The FCC issued a Notice of Inquiry on the 12.7-13.25 GHz band on October 27, 2022. Docket No. 22-352; FCC 22-80.
- Purpose is to “broadly seek information on the current use of the 12.7 GHz band, how the Commission could encourage more efficient and intensive use of the band, and whether the band is suitable for mobile broadband or other expanded use.”
- Comments were due December 12. Reply comments will be due January 10, 2023. 29 Comments were received.



12.7-13.25 GHz Allocations

In the United States the band is allocated for:

- Fixed Service
- Mobile Service
- Fixed Satellite Service (Earth-to-space)
 - GSO satellites are limited to international systems
 - NGSO are limited to individually licensed earth stations



In the International Allocation Table:

- For 12.75-13.25 GHz allocated for Fixed, Mobile, Fixed Satellite (Earth-to-space)
- For 12.7-12.75 GHz, Fixed Satellite allocation varies by region:
 - For region 1 (Europe/Russia/Africa) is both (Earth-to-space) & (space-to-Earth)
 - For regions 2 (west hemisphere) is (Earth-to-space) only
 - For region 3 (rest of Asia/Australia) is (space-to-Earth) only



12.7-13.25 GHz Current Uses

- Point-to-point microwave links for television broadcasters and cable TV operators
 - Used for studio-transmitter links and transmissions to cable TV head-ends.
 - 1187 paths
- Point-to-point microwave links under Part 101
 - Used by public safety, utilities, private data networks, etc.
 - 437 paths
- NASA
 - Receives signals from deep-space missions at Goldstone California.



12.7-13.25 GHz Current Uses

- Mobile operations by broadcasters and cable TV systems
 - Transmission of programming from remote locations such as for news gathering
 - 453 licenses, each of which allows unlimited number of transmitters in a geographic area.
- Satellite
 - 27 satellites licensed to use the band for uplinks and 20 are licensed for downlinks in at least part of the band.
 - 43 earth stations licensed to operate in the band. 23 for uplink in entire band and 20 for downlink in 12.7-12.75 GHz.



NOI Explores 2 Options for Expanding Use

New users share the band with existing incumbents

OR

Some or all incumbent users could relocate to other spectrum or use other technologies.



Band Sharing

- Would static sharing, dynamic sharing, or combination be effective?
- Should a database or spectrum management system be used for sharing?
 - Points to TV White Spaces, CBRS, or 6 GHz AFC as possible models.
 - Asks about differences in these approaches—should spectrum management system be capable of having new entrants cease operations on command?
 - Is relevant information for sharing available in FCC databases?
 - Could these systems be used for licenses awarded through auction?
- Could mobile incumbents be restricted to portion of band with sharing mechanism used for the remainder?
- Could nationwide non-exclusive licensing be used for sharing as in 70/80/90 GHz band?
- Could long-term sensing technology be used to facilitate sharing?



Relocation of Incumbents

- Are there specific incumbents who should be relocated?
- If mobile incumbents can't coordinate with new users, could they be relocated to a portion of the band or use other technology?
- What is intensity of incumbent use by band segment, service, or geographic area?
- Could additional infrastructure or compression technology be used to make spectrum available?
- Could other frequencies or alternative technologies be used to relocate incumbents?



Relocation of Incumbents

- Should new users have to relocate incumbents and what policies, such as the Emerging Technologies framework be used?
- Should procedures for different new entrants to share cost of relocating incumbents be adopted?
- Are there satellite TT&C operations in band?
- How should satellite receive earth stations be treated considering how sensitive satellite receivers are?



Licensing Approach for New Users

- Should exclusive use licensing or overlay licenses be used?
- Should a tiered licensing approach such as in CBRS be used?
- Non-exclusive licensing or unlicensed approach?
- Are there particular technical rules that should be applied to promote effective coordination of use?
- Are there unique considerations for border areas?



Adjacent Band Issues

- Lower adjacent band shared by DBS, NGSO FSS, and MVDDS.
- Upper adjacent band used by Aeronautical Radionavigation on primary basis and EESS (active) and Space Research (active).
- What measures, if any, are needed to ensure compatibility with these adjacent services.
 - Note that these uses coexist with current services such as fixed microwave links and mobile uses.
 - Seek detailed information on the technical characteristics of these adjacent band uses.



Thank You