

# What can be done to increase use of the 4.9 GHz Band?

## FCC 4.9 GHz Workshop

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## Core 4.9 GHz Challenges

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1. Despite FCC rules deployments are uncoordinated
2. Co-located fixed and mobile deployments present interference risks
3. Despite large spectrum allocation, throughput is limited
  - Short range = multi-hop mesh = tends to reduce throughput availability
  - Frequency reuse and multiple uses further divides the spectrum
4. Reliability could hamper deployments
  - Solutions must be able to accommodate any usage configuration (and propagation losses)
  - Interference resulting from uncoordinated uses presents risks

## 700 MHz and 4.9 GHz coexistence

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- Broadband peer-to-peer communications
  - Nothing short-term at 700 MHz - LTE uses entire band
  - Technologies at 4.9 GHz will support direct mode, mesh, and can offload traffic from LTE
  - But....
    - 4.9 GHz connectivity is severely limited in buildings
    - Requires many devices at the incident scene and support standards based meshing protocols
    - Application architectures must accommodate lack of connection to centralized servers
- Backhaul (LTE eNodeB to core)
  - With 10 MHz LTE, 20 Mbps per site is needed
  - 4.9 GHz can accommodate one or two sites, but not a ring of more than three sites
  - An effective solution for single spurs and COWs

## What Can The FCC Do?

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- Develop 4.9 GHz planning guidelines for regions
  - How to manage temporary and permanent uses
  - Provide guidance on frequency plans
- Provide more education to the vendor and public safety community regarding licensing and coordination
  - Emphasize that all uses must be coordinated
  - Provide recourse mechanism
  - Require vendor marking on product
- Make it easier to coordinate
  - Software tools modeling fixed and mobile
  - Able to manage temporary and permanent uses
- Provide continued flexibility to use all bands based on local needs - allow regions to determine primary and secondary uses and maximally leverage investments

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