



2022 Spectrum Policy Initiative Conference

Resolving Interference Conflicts among “Highest and Best” Uses of the Radio Spectrum

Recommendations Outbriefs from Breakout Discussions: Actions or Next Steps

Solutions Addressing Root Causes of Interference Conflicts

- Conflicts over interference are increasingly the result of attempts to make spectrum available for more users and uses, not between existing users and systems
- The process for reallocation of spectrum is not fundamentally broken – requiring wholesale change to the governmental structures – but will require a rethinking of the process to surface and address concerns earlier
- Disparate timelines – both policy-driven and technology-driven – are a significant contributor to the instant disputes



Solutions Addressing Root Causes of Interference Conflicts

- Congress should adopt an inclusive, iterative process to new allocations
 - Spectrum legislation should start with a requirement to analyze and report on new allocations, without a corresponding requirement to auction
 - Reports should be completed collaboratively by FCC and NTIA
- Reports should address efficiency
 - For government systems the report should answer the question “Can the capabilities of a government system or platform meet its mission more effectively through spectrally efficient improvements in equipment or components?”
 - (Not consensus) In looking at efficiency, commercial system efficiency should be considered



Solutions Addressing Root Causes of Interference Conflicts

- Additional subsequent legislation should address new spectrum opportunities consistent with the report
 - Congress should evolve beyond a revenue-based approach to consider other factors, including efficiency
- While it is too soon to tell, Congress may have already provided a path (pun intended) to this process.
 - The DoD's PATHSS process – a product of the IIJA – could be a model for cooperatively working through the process of making new allocations and uses available
- All players in the process would benefit from in-house expertise and leadership on spectrum policy



Solutions for Resolving Interference Conflicts

1. Perform more, better, and varied measurements of radio propagation, interference scenarios, performance degradations, etc. [details to be fleshed out by NTIA ITS], particularly for non-terrestrial network (NTN) uses of terrestrial spectrum and vice versa. This should be pursued through NSF, NTIA ITS, and NIST and likely cost \$25-30M. Timeframe was not discussed.
2. Develop framework [details to be expanded by NIST] for harmful interference that includes mission impact and technology impact. This should be pursued by FCC and NTIA under their new MOU, with input from industry and government users. Cost estimates were not discussed.



Solutions for Resolving Interference Conflicts

3. Assess, create, and characterize interference mitigation technologies for expanding coexistence opportunities, e.g., MIMO. This should be pursued by SpectrumX, NRDZ, testing organizations, and various research funding organizations. Estimated costs of \$10 in the first 2 years and \$50M over 5 years.
4. Embrace risk-informed over worst-case interference analyses, including economic factors such as cost of remediation. This should be adopted by the FCC and NTIA immediately.



Solutions for Resolving Interference Conflicts

5. Pursue disruptive technologies and new incentives for spectrum sharing. This should be pursued by SpectrumX, NRDZ, NSF, DARPA, public-private partnerships like RINGS and SRC, etc. Costs and timeframes were not discussed.

