



# FCC Technical Advisory Council

AFC Winter 2016 Meeting – Albuquerque, NM

# FCC TAC Topics



- FCC TAC deals with many different topics:
  - Unlicensed spectrum usage
  - Mobile phone locking
  - Cyber security (mobile and industry)
  - IoT
  - Interference Investigation
  - Next generation technologies
  - Receiver standards
- Current FCC Chairman was former chairman
  - Occasionally attends the meetings

# Receiver Standards



- Harm Claim Threshold (HCT) concept
    - White paper in 2013
    - AFC filed against it
  - TAC has now developed concept further
    - New White Paper – Dec 2015
    - *Basic Principles for Assessing Compatibility of New Spectrum Allocations*
- <https://transition.fcc.gov/bureaus/oet/tac/tacdocs/meeting121015/Principles-White-Paper-Release-1.1.pdf>

# TAC Whitepaper



- Improve spectrum efficiency by incorporating all aspects of the radio system
  - Transmitter
  - Receiver
  - Signal encoding
- Proposing nine principles for new allocations for adoption by the FCC
  - Use spectrum to its full potential
  - Recognizes not all principles applicable to every situation



# Principles – Technical aspects



1. Harmful interference is affected by the characteristics of both a transmitting service and a nearby receiving service in frequency, space or time.
2. All services should plan for non-harmful interference from signals that are nearby in frequency, space or time, both now and for any changes that occur in the future.
3. Even under ideal conditions, the electromagnetic environment is unpredictable. Operators should expect and plan for occasional service degradation or interruption. The Commission should not base its rules on exceptional events.

# Principles – Service Responsibilities



4. Receivers are responsible for mitigating interference outside their assigned channels.
5. Systems are expected to use techniques at all layers of the stack to mitigate degradation from interference.
6. Transmitters are responsible for minimizing the amount of their transmitted energy that appears outside their assigned frequencies and licensed areas.

# Principles – FCC actions



7. Services under FCC jurisdiction are expected to disclose the relevant standards, guidelines and operating characteristics of their systems to the Commission if they expect protection from harmful interference.
8. The Commission may apply Interference Limits to quantify rights of protection from harmful interference.
9. A quantitative analysis of interactions between services shall be required before the Commission can make decisions regarding levels of protection.

# Summary



- Systems should be realistic about the environment they are going to be operating in
  - All aspects on communications should be considered in the design
- Services should be proactive in their management and use
  - Efficient use of systems and power
- FCC required full information in order to assess and recommend a design
  - Make standards available to properly define interference limits



# Next meetings

- Future meetings:
  - March 9
  - June 9
  - September 20
  - December 7
- Proceedings available online

[Fcc.gov/live](http://Fcc.gov/live)