



# INTERFERENCE PROTECTION CRITERIA

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## WHY THIS PANEL?

- How can coexistence be discussed without understanding the expected, desired, required interference protection?
- How can flexibility be provided to license holders without understanding both the interference protection rights and responsibilities of license holder?
- How can a discussion of changing the policy and regulatory framework to be faster, more flexible without clarity in interference protection?



# PANEL ON INTERFERENCE PROTECTION CRITERIA

- Static use of the RF spectrum can have a single decision based upon technical, economic, and “public good” parameters for the particular spectral neighborhood that do not need to conform to any *standard*
- Dynamic or variable use of the RF spectrum must employ a standard in which the technical, economic, and “public good” parameters that addresses all the possible spectrum neighborhoods
- Interference Protection is pervasive throughout the spectrum community → today we will attempt to frame the discussion



# DEFINITION OF INTERFERENCE

- ITU: **1.166** *interference*: The effect of unwanted energy due to one or a combination of *emissions, radiations*, or inductions upon reception in a *radiocommunication* system, manifested by any performance degradation, misinterpretation, or loss of information which could be extracted in the absence of such unwanted energy.
  
- FCC Definitions:
  - *Interference*. The effect of unwanted energy due to one or a combination of emissions, radiations, or inductions upon reception in a radiocommunication system, manifested by any performance degradation, misinterpretation, or loss of information which could be extracted in the absence of such unwanted energy.
  - *Harmful Interference*. Interference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service operating in accordance with these [International] Radio Regulations.
  - *Permissible Interference*. Observed or predicted interference which complies with quantitative interference and sharing criteria contained in these [International (FCC)] Regulations or in ITU-R Recommendations or in special agreements as provided for in these Regulations.
  - *Accepted Interference*. Interference at a higher level than defined as *permissible* interference and which has been agreed upon between two or more administrations without prejudice to other administrations.



# STATISTICAL INTERFERENCE ANALYSES: (E.G. ERA STUDY FOR OFCOM)

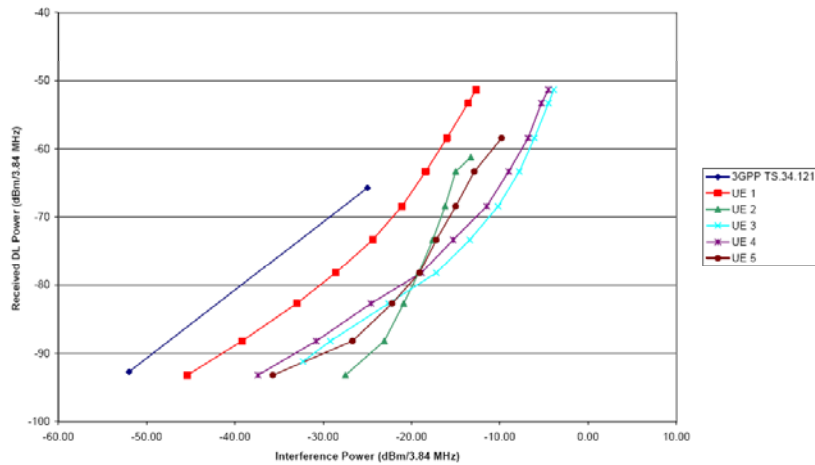


Figure 5: Received DL power vs. interferer power for +5 MHz channel offset

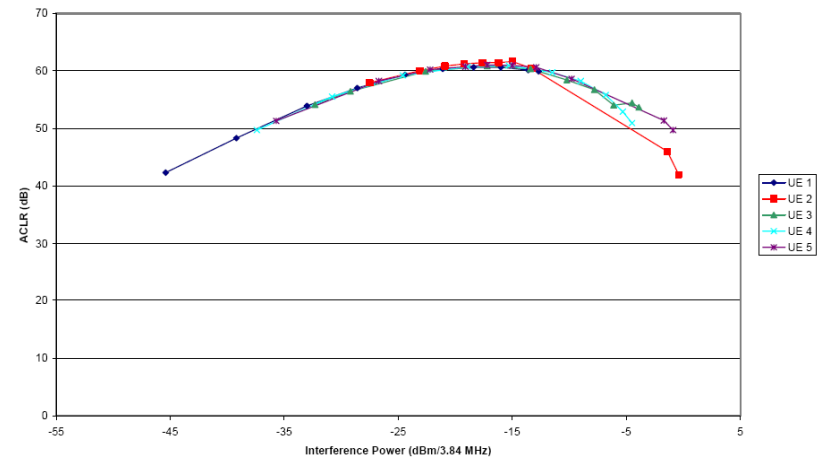


Figure 11: Measured ACLR of the interferer at the adjacent channel (+5 MHz)

- Ofcom characterized operational equipment to fit in statistical models to determine interference potential



# MULTIDISCIPLINARY PANEL TO ADDRESS A MULTIDISCIPLINARY TOPIC

- Stephen Berger (TEM)
- Michael Cotton (NTIA/ITS)
- Xin Liu (UC Davis)
- Chris Haslett (Ofcom)
- Pierre de Vries (CU/Silicon Flatirons)

10 minute presentations followed by audience questions  
for 45 minutes

