

2019 TAC Working Groups and Charter

1. Antenna Technology Working Group

2019 Charter:

The work group is to continue to build upon the work begun in 2018. The work group recommended that the FCC institute policies that incentivize the use of new spectrally efficient technologies where appropriate. For 2019, the Commission seeks information on the technical characteristics of new antennas that are being introduced, particularly in the millimeter wave bands. The specific question of how these new antenna technologies should be considered in analyzing potential interference will be important for the working group to address. For example, for phased array and MIMO antennas, what assumptions are reasonable relative to the gain between in-band and out-of-band emissions? How should antenna patterns and especially dynamic antenna patterns be taken into account in performing such analyses? To what extent can the antenna patterns and gain be used to mitigate interference risks? For Commission rules that require equipment authorization to be tied to antennas, what are the trade-offs between performance improvements and interference risks if more flexibility were provided? The work group also recommended the Commission facilitate a multi-stakeholder group to create guidelines/industry standards to improve the aesthetics of 5G/small cell deployments to improve public acceptance. We encourage the group to work with private sector stakeholders to find a way forward with this important initiative.

2. UAS Working Group

2019 Charter:

Unmanned Aircraft Systems (UAS) continue to evolve and grow: UAS sizes from small to large; mission profiles from low altitude to high altitude; some line of sight and others non-line of sight; in both controlled and uncontrolled airspace; and; over dense urban and sparse rural areas. The spectrum needs for command & control, payload, identification, monitoring, and collision avoidance are highly variable across a diverse array of mission operations and types of UAS that are evolving in the National Airspace System of the United States. The 2018 UAS-WG studied and found that 3GPP technology satisfies the expected communications requirements for low altitude UAVs, and other alternative technologies may also be suitable. The work group recommended that the Commission should consider Unmanned Aerial Vehicle (UAV) access to terrestrial mobile bands, consult with other federal agencies including the FAA on UAV use of terrestrial mobile bands, and reassess the technical basis for prohibiting the use of certain terrestrial mobile frequency bands above ground level. The topic of identifying spectrum for UAS continues to be active. The work group is tasked to continue its work, collaborating where appropriate with the FAA, and making recommendations as to how the Commission can support the safe operation of UAS, noting the scope of the FCC's jurisdiction. The role of unlicensed spectrum in satisfying the various needs in the UAS space identified by the working group in 2018 should specifically be addressed.

3. 5G and the Internet of Things WG

2019 Charter:

5G continues to be a topic that is critically important to the communications industry, our economy and U.S. international competitiveness. The work group is tasked in 2019 to continue to provide information on the development of this technology and make recommendations as it evolves. For example, how are networks integrating 5G technology with legacy networks? How are low, mid, and high frequency bands actually being used in building out networks, both in the U.S. and in other parts of the world? What is the status of the deployment of service by verticals such as transportation, energy, health care, etc. What steps are being taken from a technical standpoint to ensure deployment of 5G services to rural areas, especially those related to low latency dependent applications? How are the projections about 5G in terms of capacity, speed and latency playing out both in general and by application and by geography? Since 5G is likely to have a long roll-out, what is the evolutionary path and where will this lead us in terms of new functionality to meet the needs and desires of the citizens of the U.S.? To what extent, in tangible terms, is 5G making a difference for the deployment of IOT. Here again, how will this likely evolve? What is the status of satellite offerings of 5G service? In general, what new developments have arisen that the Commission should be aware of and/or address? As a reminder, the work of this group is to focus on technical insights and recommendations.

4. Artificial Intelligence

2019 Charter:

The 2018 work group on Computational Power Stress on the Network recommended continuing the work with a focus on artificial intelligence. In line with this recommendation and the interests of the Commission, the work group is tasked with providing information on artificial intelligence and the variety of roles it might play in communications networks and services. Where is artificial intelligence being deployed in networks today and how is it likely to develop over the coming years? What benefits will various forms of artificial intelligence offer in the broad communications space? What risks will it introduce? Are there Commission rules or policies that are barriers to the introduction of artificial intelligence and how might they be modified or removed? Where might the FCC introduce artificial intelligence in its own current systems and processes to enhance the efficiency and effectiveness of FCC missions? Artificial intelligence is a relatively new field and yet has very broad applications and implications in the communications space. Therefore, we provide considerable flexibility to the group to determine what might be of most interest and importance and where actionable recommendations might be most valuable to the Commission.