2024-25 TAC WG charters:

1. **6G WG**
    - Provide information on the development and deployment of 6G technology, make recommendations and provide insights on new developments and expectations from technological and regulatory perspectives that FCC should pay attention to.
    - How do openness and customization capabilities in 6G benefit supporting flexibility and agile services and its coexistence with 5G?
    - What are the infrastructure needs for 6G, and how can the FCC proactively address them?
    - How is 6G progressing or expected to progress at standards and international fora? What are the key points of emerging consensus or disagreement?
    - What are competing 6G visions and expectations on key technological points between operators to compare and contrast?
    - What is the status of small satellite development, what frequency bands are under consideration for non-terrestrial network (NTN) use, and what services are envisioned?
    - What are the opportunities for using mmW/terahertz bands for 6G systems?
    - How is 6G technology envisioned to enhance or be utilized in various verticals, including autonomous driving, augmented and virtual reality, edge computing, emergency alerting, and smart cities?
    - What advancements in localization and positioning will 6G need for network optimization of beam steering antennas and metasurfaces?
    - What are the potential privacy and security risks that 6G networks will need to address regarding massive data collection and processing, as well as the ethical and social impacts of emerging applications such as brain-computer interfaces and holographic communications?
    - How does 6G ensure the security and privacy of users' data and identity in various scenarios, such as distributed ledger technologies, physical layer security, distributed AI/ML, visible light communication (VLC), THz bands, and quantum communication?
    - How will 5G/6G networks support massive volume of mobile and IoT and XR devices with low-latency and seamless connectivity for near- and non-real time, trending toward real-time applications?

2. Artificial Intelligence/Machine Learning WG

- Explore the use of AI/ML methods to improve the utilization and administration of spectrum (licensed, unlicensed, and shared) based on the fundamental characteristics of propagation, interference, signal processing, and protocols. How could the scalability aspect of AI/ML algorithms support such methods by use of techniques such as parallelization, dimensionality reduction, sampling, and approximation?
- Evaluate the use of AI/ML methods and techniques applied to assuring the safety, security, and performance of network equipment, network control, and network operations in a network environment that increasingly relies on automation, is seeing a rapid growth of new network connections, and is increasingly digitized and software-ized.
- Explore and evaluate AI-enabled networks in optimizing long convergence time, memory complexity, and complex behavior of machine learning algorithms under uncertainty as well as how the highly dynamic channel, traffic, and mobility conditions of the network contribute to the challenges of AI networks.
- How can AI/ML be leveraged to help better understand real-time spectrum usage, either at the front end (*e.g.*, improved sensing) or the back end (*e.g.*, improved analytics)?
- Are there opportunities for the Commission to use AI/ML to improve its analysis of data presently collected and housed in databases like ULS?
- What are the implications and complications of using AI/ML in optimizing wireless and wired networks performance by analyzing network traffic patterns, network failures, proactive corrective actions, network routing, and predicting network congestion?
- How can AI/ML techniques be used to support the integration and interoperability of wired and wireless networks, such as heterogeneous access networks, multi-domain networks, and adaptive network slicing?
- How can AI/ML techniques be used to design and implement novel network architectures and protocols for wired and wireless networks, such as software-defined networking (SDN), network function virtualization (NFV), and information-centric networking (ICN)?
- How can AI/ML techniques be used to address the challenges of data quality, availability, privacy, and security in wired and wireless networks, such as data cleansing, data fusion, data anonymization, and data protection?
- What approaches should be taken, if any, on testing and certification of AI/ML softwarization of network components, capabilities, and equipment?

3. Advanced Spectrum Sharing WG

- What will advanced sharing frameworks and architectures look like in the future?
- How will spectrum sharing models adapt and evolve to meet the growing demand for spectrum access among various services to support multiple purposes? How can the interplay between terrestrial and satellite services be complemented in sharing models to promote more efficient spectrum use?
- To what extent can the FCC optimize its propagation models to reflect less conservative, more realistic assumptions and support more intensive sharing while still protecting against harmful interference? Are there specific bands where improved propagation models offer a pathway to liberalize performance capabilities beyond what the FCC permits today?
- What steps can be taken to better facilitate spectrum repurposing efforts? How can potential intra-band and inter-band issues be identified and addressed early in the process? How can incumbent services be better informed about the nature of adjacent or nearby spectrum environments and how can users be encouraged to take steps needed to accommodate new spectrum uses in those environments? What steps and processes should be used regarding adjacent band spectrum users' wide receiver bandwidths (i.e., the passband extends into adjacent bands)?
- What is the current state of the art in receiver technology? What state of the art active antenna array and filter technologies can be utilized to mitigate potential harmful interference? How can advanced antenna systems help reduce both inter-system and intra-system interference and enhance intra-system performance (e.g., beam vs. null steering)? What are the cost benefit tradeoffs on utilizing the current filter technologies or advanced antenna systems? Are there specific bands where improved receiver technologies offer significantly improved coexistence beyond what is permitted today?
- What are the candidate bands or services that can co-exist with low-power, indoor-only operation such as factory automation? What are the sharing mechanisms to consider?
- What are the sharing mechanisms to consider among various services above 95 GHz, including passive services?
- What role should sensors play in informing spectrum use and in supplementing spectrum sharing databases?
- What are the trade-offs between efficient spectrum use and environmental considerations, including sustainability and energy efficiency?
- What methods can support the Commission in identifying spectrum bands that have the most potential and flexibility for sharing and repurposing? What are the candidate bands and which bands should be prioritized? How should those bands be combined or separated for federal and/or non-federal uses? What are the optimal coordination processes between stakeholders to better support implementation and consideration of these methods?