Research Track Definitions

Interconnection, Backhaul, and Vehicles: This area of research focuses on the transportation, coordination, and interconnection between each deployable network on scene. It seeks to address the following:

- How can these networks be integrated into various platforms to simplify delivery of network services
- How can interconnection between networks and backhaul to other networks be optimized using a mesh networking or other topology
- How can multiple independent networks cooperate with each other to provide the best coverage, connection, and service (interference mitigation, dynamic coverage, etc.)
- How can these networks move with the incident

Resilient Systems: This track will focus the networking protocols and techniques used to move data on the HMDN.

Primarily, the focus is on mission-critical data replication, synchronization, and how to build resilience into deployable networks so there is no single point of failure. Inter-network mesh connections and topology may be an emphasis so that deployable systems are ad-hoc, reliable, self-forming, and self-healing.

Technologies within this track should support decentralized ("edge") networking so that network subscribers can maximize mobility within different environments.

Security: This research track focuses on how technologies can dynamically authenticate users on deployable networks in a secure and reliable way. Deployable systems will need to ensure that authentication is not compromised in instances when there a centralized authentication service is not available.

In addition, this track will focus on how to enable controlled access to data and promote secure information sharing at handoffs between deployed networks.

LTE Platforms: This area of research focuses on the radio access network (RAN) and evolved packet core (EPC) portions of the LTE network. The focus is researching how LTE systems can share information with other LTE systems so that ad-hoc roaming agreements can be established to provide full mobility across a dynamic network. It also focuses on the following:

- Maintaining interoperability among planned and unplanned systems
- Dynamic interference mitigation and automated power control
- Leveraging or sharing core resources
- LTE in the unlicensed bands to augment the public safety band

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Applications: The applications track will focus on end-user experience in Highly Mobile Deployed Networks. By addressing the applications utilized within a deployed network, the group will explore WHAT information is important to a first responder, and HOW that information can be made consistently available in critical conditions. This can include:

- Identifying potential application requirements for users of a deployed network
- Determining how application data should be handled
- Determining the key performance indicators