Coverage, Capacity and Resilience Enhancement In PSN

Problem: A PSN that intelligently adapts and extends its coverage using relays and mobile eNBs, scheduling, coordination, and optimization to ensure the availability of the services, bandwidth, and reliability required by the FRs wherever they go, with a focus on MCV-and-MCPTT -using FR communities.

Objectives: Support mission-critical voice (MCV) communication for FRs in the broadest set of environments and situations possible

- Extending coverage and capacity by prudent use of relays and mobile eNBs
- Trajectory and placement optimization
- Real-time scheduling of relay operation (on/off) and coordination
- Network-resilience analysis and enhancement
- Enhanced LTE multicast/broadcast capabilities for PSN to support MCPTT, including off-network D2D and multi-hop

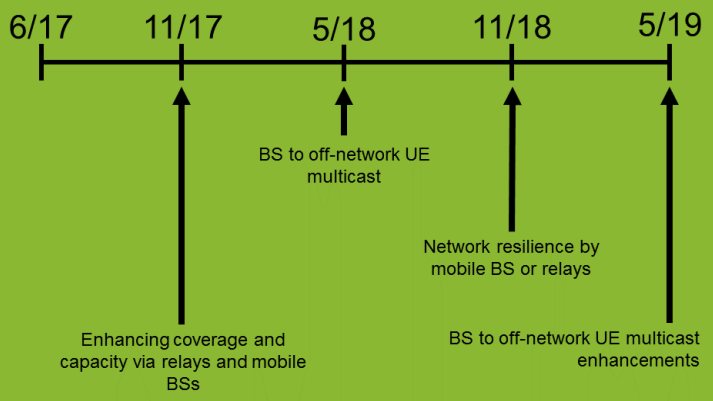
Unique Approach

- Leveraging relays, broadly, to dynamically extend, direct, or modify network coverage and capacity
- Trajectory and placement optimization of relays in stochastic, deterministic , and real-time scenarios
- Online/offline, distributed/centralized, stochastic/deterministic or hybrid scheduling and coordination approaches.
- Specific FR-scenario-based combination in scheduling approach and coordination

Expected Impact

- A critical stage in evolution of broadband PSN
- Capacity extension via relays and scheduling
- Standardization in D2D, multi-hop, and multicast for MCV/MCPTT
- Coverage enhancement
- Failure resilience
- Reconfiguration
- BS to off-network UE and UE-to-UE multicast
- QPP in eMBMS

Schedule



George Washington U., Miami U., Virginia Commonwealth U.