Priority Access- FCC R&O and Additional Use Cases

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Abstract

This presentation provides a brief summary of US National Security and Emergency Preparedness (NS/EP) priority services and a recent Report and Order (R&O) from the US Federal Communications Commission (FCC) that updates and modernizes NS/EP services. This presentation also highlights priority services in other countries and list a few potential topics where further prioritization might benefit users with NS/EP responsibilities via future IEEE 802.11 amendments.
Background

- Emergency Telecommunications Service (ETS) specified in [ITU-T E.107]: A national service, providing priority telecommunications to the ETS authorized users in times of disaster and emergencies (e.g., floods, earthquakes, hurricanes, terrorist attacks)

- In United States, DHS/ECD (Department of Homeland Security/Emergency Communications Division) priority telecommunications programs provide national security and emergency preparedness (NS/EP) and public safety users the ability to communicate on public telecommunications networks during times of congestion
  - Government Emergency Telecommunications Service (GETS)
  - Wireless Priority Service (WPS)
  - Next Generation Network Priority Services (NGN PS)
  - Telecommunications Service Priority (TSP)
NS/EP Priority Services in the US

NS/EP priority services are subscription based, operator controlled, enabled through global Standards, and are offered over commercial network infrastructure. Growing need for priority support over Wi-Fi access networks which is currently missing.

GETS
- Landline Phone
- Satellite Phone
- Operational since 1994
- Calling Card service
- Accessible from any domestic or international PSTN phone.

WPS
- Cell Phone
- Operational since 2002
- Accessible from a WPS subscribed phone of a participating carrier by dialing *272 + Destination Number

NGN PRIORITY
- IP Networks
- Priority Voice
  - Core Operational: 2014
  - Wireless Access: 2017
  - Wireline Access: 2019
- Priority Data, Video and Information Services
  (e.g., Multimedia Priority Service (MPS) in 5G, Wi-Fi): TBD
Priority Services in Other Countries

- Blue Light Mobile
- Mobile Crisis Communications
- Mobile Telecommunications Access Scheme
- Disaster Priority Telephone (優先電話)
- Wireless Priority Services
FCC Updates Rules for NS/EP Priority Services

• Federal Communications Commission (FCC) in the USA originally issued rules for Telecommunications Service Priority (TSP) in 1988 and Wireless Priority Service (WPS) in 2000

• FCC recently released a new Report and Order (FCC-22-36) addressing the TSP and WPS in the US
  • WPS R&O specifies operation of priority service on public wireless communications networks

Note: Wireless Priority Service is not mandated by the FCC

• Highlights on Wireless Priority Service (WPS)
  • Explicitly authorizes WPS preemption of public communications
  • Expressly permits priority voice, video, and data sessions
  • Expressly authorizes priority signaling (registration, invocation)
  • Expands WPS invocation methods beyond on per-call basis
  • Expands WPS eligibility to include additional users
  • Clarifies that higher priority users take precedence over those with lower priority
Potential Topics for Future IEEE 802.11 Amendment Considerations

• Provide means to enable preemption
  • Preemption could provide critical advantage for NS/EP personnel under extreme conditions
    • Current EPCS priority only provides probabilistic advantage via EDCA

• Provide means to enable multiple priority levels
  • Lack of differentiation among priority users could result in poor performance when many priority users share a BSS (e.g., disaster management site, evacuation shelter)
    • Multiple priority levels enable use of priority features for other purposes and/or classes of devices
    • Distinguishing different classes of priority users and/or service types

• Provide priority access to wireless medium during association
References


• Blue Light Mobile in Belgium supports two priority levels
  o https://www.astrid.be/en/services/blue-light-mobile, and

• Mobile Crisis Communications service in Czech Republic
References

Thank You