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): Planning Stage
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 except for 911 emergency calls
  • Expressly permits priority voice, video, and data sessions
  • Expressly authorizes priority signaling (registration, invocation)
  • Expands WPS invocation methods beyond on a 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**

- **Mobile Crisis Communications service in Czech Republic**
References

• Global System for Mobile Communications – Railway (GSM-R) :
  https://wikivisually.com/wiki/GSM-R AND
  https://www.infrabel.be/sites/default/files/documents/ns_e-04_gsm-
  r_roaming_infrabel.pdf,
  https://www.rssb.co.uk/rgs/casdocs/rssb-gsmr-oc%20iss%201.pdf

• Regulations in Norway specify preemption (release of non-priority, non-
  emergency calls) as form of priority:
  https://lovdata.no/dokument/SF/forskrift/2013-10-21-1241 ,
  https://www.nkom.no/teknisk/sikkerhet-og-beredskap/prioritet-i-
  mobilnettet/prioritet-i-mobilnettet (in Norwegian) .