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 ammendments.

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)
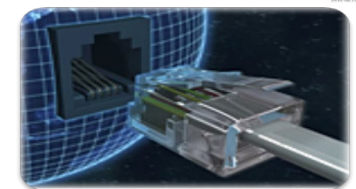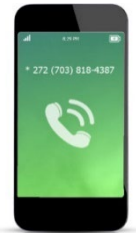
NS/EP Priority Services in the US

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
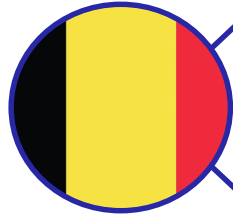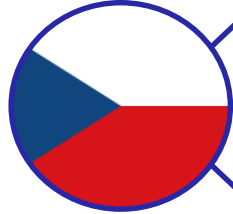
NGN PRIORITY

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

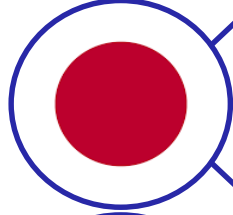# Priority Services in Other Countries

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

- **FCC Review of Rules and Requirements For Priority Services, FCC-22-36,** https://www.fcc.gov/document/fcc-modernizes-and-improves-its-priority-services-rules-0

- **FCC Establishment of Rules and Requirements For Priority Access Service, FCC-00-242,** https://www.fcc.gov/document/establishment-rules-and-requirements-priority-access-service-0

- **Blue Light Mobile in Belgium supports two priority levels**

   o https://www.astrid.be/en/services/blue-light-mobile, and https://www.astrid.be/en/news/next-generation-blue-light-mobile (in English)

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

   https://www.o2.cz/file_conver/19103/Provozni_podminky_O2_Mobilni_hlasove_sluzby_od_1_7_2014.pdf **(in Czech)**

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) .**

Thank You