Transmission of IPv6 Packets over IEEE 802.11 Networks Outside the Context of a Basic Service Set

draft-petrescu-ipv6-over-80211p-03.txt

Alex Petrescu , Nabil Benamar, Tim Leinmueller,

Presented by Nabil Benamar (Moulay Ismail University, Morocco)

at IETF 95 Buenos Aires, Argentina,

on April 6th, 2016.

802.11p, and IPv6 over 802.11p

- 802.11p: an ammendment to 802.11 for Wireless Access in Vehicular Environments; if compared to WiFi:
  - Operation Outside the Context of a BSS (OCB)
  - New Timing Advertisement message (rolled into 802.11)
  - Frequency range in the 5.9GHz band
  - Approximate prohibition of IPv6 (== 'not safety'!) on channel 178 (180 in Europe)
  - Half-rate encoding
  - High power levels (33 dBm in Europe, 44 dBm in US)
- **IPv6 over 802.11p works as over e.g. 802.11b**
  - MTU: default 1500 bytes
  - Frame Format: Ethernet Adaptation Layer
  - EtherType: 0x86DD, as with Ethernet
  - Link-local Addresses, as with Ethernet (RFC2464)
  - Address mapping, as with Ethernet
  - Very frequent Router Advertisements may be necessary to ease IP handovers in OCB context, as with Mobile IPv6.
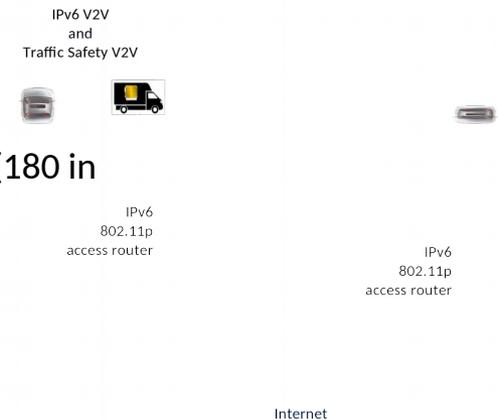
IPv6 V2V
and
Traffic Safety V2V

IPv6
802.11p
access router

IPv6
802.11p
access router

Internet

Advancements since IET88 Vancouver

- 6man WG comments:
  - ND 6lowpan RFC6775 adapted for the subnet structure of networks of 802.11p links?
- v6ops WG comments:
  - The IID *may* be formed just like an IID for Ethernet (instead of 'is') -> **next rev**.
  - Referring or not to RFC2119, and the use of capitalized modal verbs -> **should we capitalize and refer to this RFC, or drop the ref?**
  - Use DNA RFC6059 instead of high-rate RAs? **Please suggest text**.
- 6lo WG comments:
  - RFC6568 6lowpan use-cases mention vehicular -> **not clear relationship to 802.11p**
- Private IEEE and IETF comments:
  - The use of a restricted reference to a IEEE P1609.2 document for security
    - **Should we or should we not drop the P1609.2 reference? Or as informative ref?**
- ISO TC204 WG16 comments:
  - Differences in EtherTypes for IPv6/p and for ISO protocols/p.
  - FNTP-to-IP translators would be needed.
  - Minimal MTU recommendation similar to that of short WSMP messages (**what is that length?**)

- ITS BoF at 14h in Buen Ayre C