DECT ULE

IETF 6lo WG meeting @ IETF#90

July 24, 2014

draft-ietf-6lo-dect-ule-00

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RTX A/S

Draft history and status

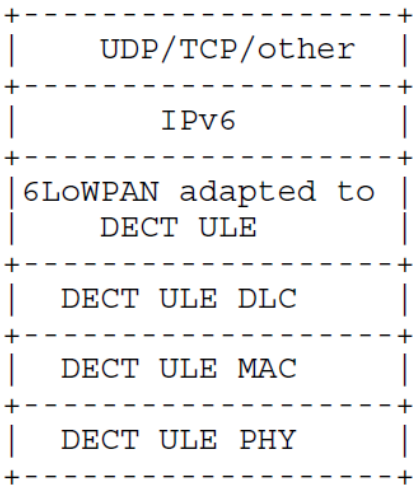
- Initial: draft-mariager-6lowpan-v6over-dect-ule-00 (April 2011)
- Several technical and editor updates: -00 .. -03
- 6lo WG adoption: draft-ietf-6lo-dect-ule-00 (June 2014)

- No planned updates, the draft seems complete…

- What are the next steps towards an official standard?

Draft overview

- Star topology (repeater/mesh is hidden in Layer-2)
- Header compression
- Neighbor discovery
- IID may be derived by 3 methods: DECT ID, MAC-48 or random
- Segmentation and re-assembly are provided in Layer-2
- Connection oriented at Layer-2
- DECT-ULE establishes binding at L2 between FP and PP (6LBR and 6LN)
- DECT-ULE negotiate application protocol to be used: 6LoWPAN
- Assumes only ETSI standard Phase 1 features



DECT-ULE standardization

- **ETSI** is standardizing the lower layers (generic ”transport layers”):
  - Phase 1 was published April 2013
  - Phase 2 planned for September 2014
    - New features: Voice+data combination, SUOTA, C/L downlink, Repeater, NEMO

    http://www.etsi.org/deliver/etsi_ts/102900_102999/10293901/01.01.01_60/ts_10293901v010101p.pdf

- **ULE Alliance** is standardizing home automation application based on DECT ULE (currently non IP)
  - Certification program and Logo

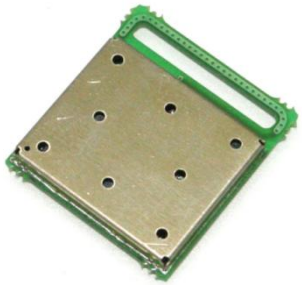
    http://www.ulealliance.org/

- **DECT Forum** has certification program and Logo for HD voice products.

  http://www.dect.org/

WHAT IS DECT ULE?

- DECT technology has been continuously evolved through more than 20 years and is today used “world wide”.
  - Main application has been cordless telephone systems.
- There are spectrum variants for Europe, US, Japan, Korea and the technology is part of the IMT2000 family. Primarily at 1.9GHz
- DECT ULE’s strong points:
  - Longer range
  - Reserved (restricted) frequency spectrum → interference free
  - Mature and low cost silicon, eBOM<1US$
  - Interoperability
  - Cooperate and co-existence with legacy DECT equipment
  - Devices with multi-year battery lifetime
  - Link-layer security based on AES128
  - Legacy DECT basestations are potentially upgradeable to ULE



DECT & ULE – World-wide Coverage

ULE ALLIANCE'S MARKET USE CASES

ULE – Market Use Cases

- **Home Automation**
  - Smart plugs
  - Consumption display/awareness
  - Lighting control
  - Remote metering
    - Electricity, Gas, Water
  - White goods/appliance control
  - In-home control displays

- **Security:**
  - Door phone
  - Security camera
  - Door/Window lock sensors
  - Motion detector
  - Glass Break detector
  - Smoke/Fire alert
  - Baby monitors
  - Remote control
  - Control station

- **Climate Control**
  - Thermostat/Heating
  - Ventilation
  - Air Conditioning
  - Blinds
  - Display and Monitoring

MARKET OUTLOOK

- DECT total yearly: 100 Mill
- More than 10Mill DECT enabled installed internet gateways are potentially upgradable to ULE (and 6LoWPAN).

- Market expectations for DECT-ULE for 2016:
  - Home automation: 53 Mill
  - Safety and security: 26 Mill
  - Healthcare: 40 Mill
  - Other: 13 Mill

WE NEED 6LOWPAN

- Currently many DECT-ULE devices are used in closed proprietary applications.
- Many new applications will be cloud connected. For this 6LoWPAN will be need.
- ULE Alliance are already planning a transition to 6LoWPAN of their application protocol in 2015.
- Large scale commercial DECT-ULE and 6LoWPAN (early-draft) products have been deployed, see Gigaset Elements.
  http://www.gigaset.com/en_UK/news-detail-ag/news/detail/News/hello-future-hello-gigaset-elements.html

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