

802.15.12: 15.4 ULI Berlin Meeting Goals, Status, Accomplishments & Future Efforts

from P. Kinney Closing Report DCN: 15-17-0388-01-0000

Bob Heile
Director of Standards, Wi-SUN Alliance
Chair IEEE 802.15
bheile@ieee.org

802.15.12 Berlin Meeting Goals

- Tuesday 11 Jul, AM1: Opening report, Agenda, Status, and Functional decomposition review (15-17-0113-03)
- Tuesday 11 Jul, AM2: 3 presentations: 15-17-0296-00 Operations of L2R with ULI; 15-17-0232-01 App view of ULI profile I/F via ioctl (); and 15-17-0308-00 Data Plane Thoughts
- Wednesday 12 Jul, AM1: Detailed discussion on PDE
- Thursday 13 Jul, AM1: Detailed discussion on MMI
- Thursday 13 Jul, AM2: Detailed discussion on MPM
- Thursday 13 Jul, PM2: Detailed discussion on PassThru

802.15.12 Status Update

- Optional elements of 802.15.12: L2R
 - Format issues – Dispatch: Where should L2R IE be inserted?
 - Format issues – Discovery: How is it done with L2R? Ans: they are independent
 - Architecture – Where is L2R management situated?: In Application Layer, and in 802.15.12 Management functional block
 - List of management functions
- Data plane operation using 802.15.12: example of 6lo
 - Device driver presents packet to 802.15.12 with EPD=0xA0ED, and layer-2 addresses
 - Determine the MAC and PHY layer using source and destination layer-2 addresses.
 - We check configuration for MAC & PHY for outgoing
 - Upon reception, ULI-6lo ID allows routing to the proper higher-layer device driver.
 - Must fully consider forwarding and data concatenation data-plane effects

802.15.12 Status Update (cont)

- Management plane operation using 802.15.12
 - Discussion about enabling configuration from higher-layer protocol
 - Netconf
 - CoMI
 - Ioctl()
 - Need for remote configuration
 - Discussion about how to identify profiles
 - Could associate some with device drivers in the way that Unix does (e.g., “eth0”)
 - Can multiple profiles be associated with a single device driver? For instance, SUN FSK with or without L2R?

Accomplishments

- Discussion on the concepts necessary for 802.15.12
 - Ranging Protocol Module: Work in progress, details are being “flushed out” such as ability to use non-ranging packets for ranging information
 - L2R: Reviewed 15-17-0296-00 Operations of L2R with ULI, concepts and details will be updated for Sept 2017 interim
 - Management Protocol Module: Reviewed 15-17-0215-00-0012-proposal-of-uli-primitives-for-handling-profiles, further work on relationship of CoMI/CBoR/MPM for local and remote configuration by Sept 2017 interim
 - Protocol Discrimination Entity: Additional communication flows such as 802.1x are needed to “flush out” design issues
 - Multiplexed MAC Interface: Mostly done due to use of 802.15.9’s design
- Discussion on the architecture for 802.15.12
 - The Profile ID structure will be a significant feature of the ULI for local and remote configuration. 802.15 ANA will control Profile ID uses.

Continuing/Future Efforts

Functional Module Technical Details

- PDE P Kinney
- MMI P Kinney
- Management Protocol H Yokota
- 6LoWPAN
- KMP P Kinney/R Moskowitz
- 802.1X P Kinney/R Moskowitz
- L2R Noriyuki Sato
- 6tisch
- Ranging B Verso
- Pass Thru C Perkins

Functional Block Overview

- How do they work?
- What functions do they include?
- How do the SAPs work?
- What primitives are required?
- What parameters are required?