

IOT Related Work – IEEE 802

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Overview of IoT areas of work

- Enabling use of Local MAC addresses
- Time Sensitive Networking (TSN)
- Physical layers for IoT (low cost, low power)
- Privacy considerations
- 802.24 working on white papers on relationship of IEEE 802 standards to IoT
 - Also a focal point for any general liaisons on IoT to IEEE 802

Some key points about Local MAC Addresses

- Can't assume all MAC addresses are Global or static
 - Global MAC addresses are EUI-48 (or if 64 bit, EUI-64), Local MAC addresses aren't EUIs
 - Local MAC addresses may change over time because of movement to a different LAN, duplicate address resolution or privacy concerns
- There can be multiple address assignment protocols coexisting
 - by using different portions of the local address space.
 - IEEE 802c - an optional plan for dividing the address space
 - IEEE 802.1CQ - a set of protocols for address assignment
 - Doesn't preclude other protocols

IEEE 802.1 TSN

- Addresses the needs of IoT devices for time-sensitive and loss-sensitive uses. E.g.
 - Accurate time synchronization
 - Sensors, actuators and controllers forming control loops
 - Zero fail-over time
- Working with IETF DetNet to enable supporting these services over layer 3 networks.

Some Physical Layers for IoT

- IEEE 802.3 Single twisted pair PHYs
 - Less wire for lower weight and cost
 - 100BASE-T1 (100 Mb/s) and 1000BASE-T1 (1 Gb/s) completed
 - Power over Data Link (PoDL) is in Sponsor Ballot (i.e. nearing completion)
 - Study group considering a 10 Mb/s project
- IEEE 802.3 Plastic Optical Fiber PHY – 1 Gb/s

Privacy

- IEEE 802E Recommended Practice for Privacy Considerations for IEEE 802 Technologies
 - Draft in development