802c PAR Background

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- There are two areas where giving a global address to every network port is not allowed or not desirable:
  - Virtualization
    - RAC Guidelines limit global addresses to hardware instances to avoid exhausting the global address space
    - Virtualization orchestration systems need to create address for the ports.
  - IoT devices
    - Network ports on IoT devices can ship in massive numbers
    - Fast outstripping computer, phone and tablet use of global addresses
    - Some IoT devices have no need for a global address
      - One doesn't need one for every sensor and every actuator
      - See http://www.ieee802.org/1/files/public/docs2014/New-pannell-MAC-Address-Usage-0714-v1.pdf
    - Many IoT devices will deploy into unmanaged enviroments

Existing use of protocols for Address Assignment

- In the Data Center Area there are already protocols using address blocks for address assignment
  - Proprietary Virtualization Orchestration Systems
  - INCITS T11 FC-BB-5 and FC-BB-6 for FCoE (Fibre Channel over Ethernet
- Existing use is disorganized – if this continues, protocols will be stepping on each other.
- Need to establish a way to organize the address space to avoid conflicts.

802c PAR Scope

The amendment will provide recommendations and rules for using the local address space. This will allocate a portion of the address space for protocols using an IEEE Registration Authority assigned Company ID. Another portion of the local address space will be allocated for assignment by local administrators.

- Expect that the address space allocations will be recommendations – can’t change history
- May include requirements and recommendations that apply when the recommended allocation is used.

Timing

- Fairly little use of the local address space now. The longer we wait, the harder the transition will be.
- Projects are underway for physical layers for IoT applications
- Time Sensitive Networking will enable use of network ports for new applications including industrial and automotive.
- First step in enabling IoT devices that acquire an address in an unmanaged environment
- Second step id defining protocols for unmanaged address acquisiton;
  - For thoughts on a standard protocol suite, see http://www.ieee802.org/1/files/public/docs2014/new-addresses-thaler-local-address-acquisition-0914-v1.pdf