

Project: IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)

Submission Title: Introduction of SUN Device Classes

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Re:

Abstract:

Purpose: Suggestion to consider device types to be discussed by IEEE 802.15 TG4g

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Suggestion to Consider Application Device Types

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Goals

- **Unity**
 - Enhance and accelerate proposal merges
- **Flexibility**
 - Balance standard compliance and performance
 - Allow application type to define technology choice
- **Simplicity**
 - Reduce product complexity
 - Eliminate technology compromises

Introduction

Application Device Types

- Application specific device types could encourage manufactures to use the best suited technology for the application
- Each technology could be assigned a unique device type
- Products could interoperate while maintaining optimal performance, i.e. data rate, energy usage, communications link budgets
- Reduce implementation complexity
- Reduce remaining merger challenges

We believe that utilizing device types will significantly reduce the technical complexity of addressing interoperability requirements and encourages logical grouping of system performance and technical requirements while meeting all PAR requirements

Application Type Definitions

TYPE C

ie Commercial Electric Meter

320 -1000kb/s

400-800kHz BW

OFDM

Up to 1.5K Octet Payload

TYPE R

ie Residential Electric Meter

40-320kb/s

100-400kHz BW

GFSK / DSSS / FHSS

Up to 1.5K Octet Payload

TYPE W

ie Water/Gas Meter

1.2-40kb/s

6.25-100kHz BW

GFSK

Up to 500 Octet Payload

Interoperability Mode

320kb/s QPSK 300kHz

Interoperability Mode

40kb/s GFSK 100kHz

Interoperability Mode

1.2Kb/s GFSK 6.25kHz

THESE VALUES ARE ONLY SUGGESTIONS

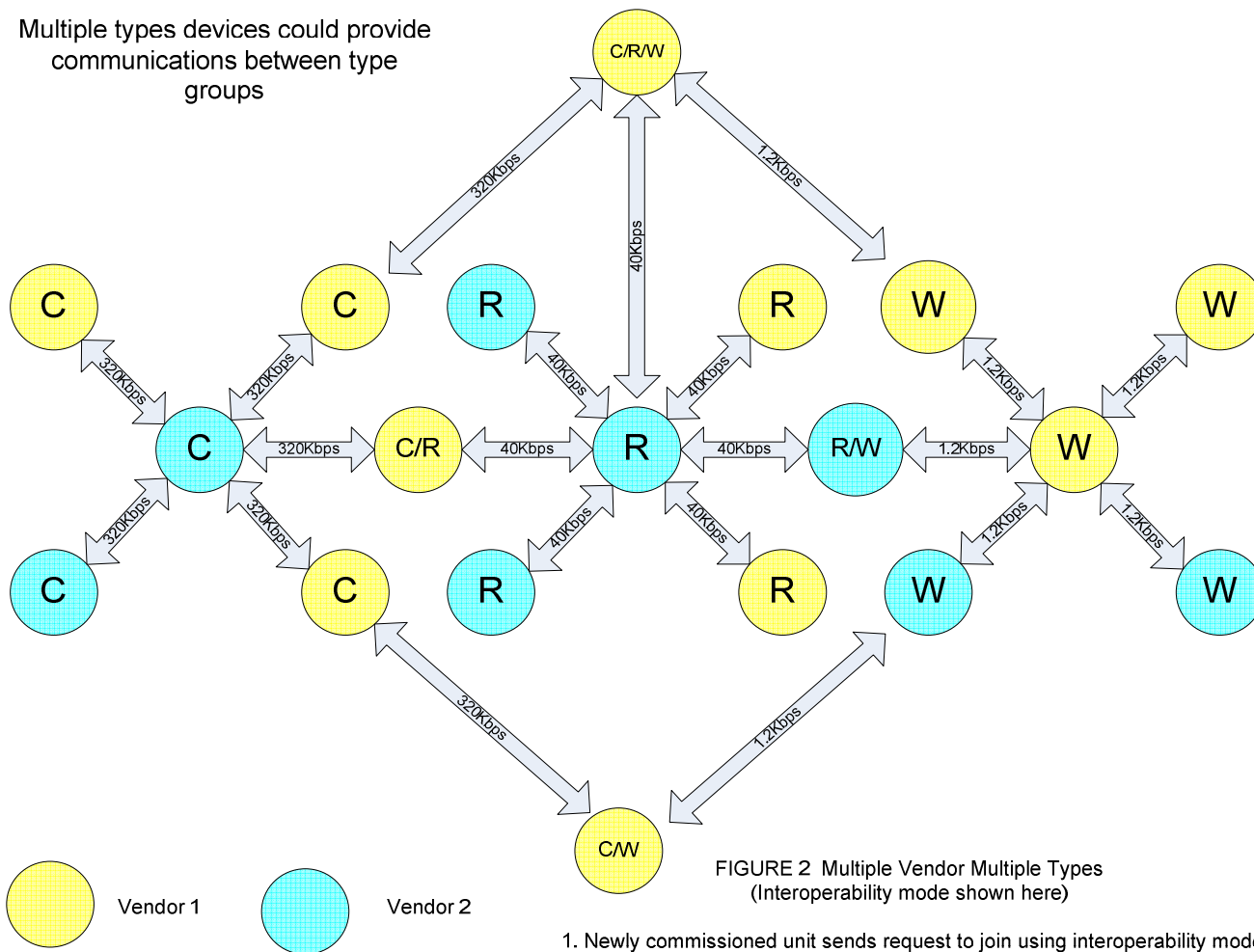


FIGURE 2 Multiple Vendor Multiple Types (Interoperability mode shown here)

1. Newly commissioned unit sends request to join using interoperability mode
2. Same type devices switch to interoperability mode
3. Same type devices exchange PIB info and switch to best common mode

- Interoperability communications parameters could be defined to simplify communications within each device type
- Products would not be required to interoperate across device types but there would no reason to exclude it
- Products could include communications capabilities required to provide support for multiple device types, as appropriate to the target applications and markets
- Device types could greatly expand legacy device support
- Device types could allow manufactures to build the best device for each unique application
- This is not a new idea 802.15.4 already uses device types ie FFD / LFD

Thank you for your attention

- Questions ?