**IEEE P802.24**

**Vertical Applications TAG**

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| Project | IEEE P802.24 Vertical Applications Technical Advisory Group |
| Title | Smart Grid Task Group – Sub 1 GHz White Paper Outline |
| Date Submitted | 10 March 2015 |
| Source | Tim Godfrey | Voice: 913.706.37777E-mail:  |
| Re: | White Paper Development |
| Abstract | Outline for the TG’s Sub 1 GHz White Paper |
| Purpose | Provide a framework for developing the Sub 1 GHz White Paper |
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Introduction: (criteria for inclusion, and evaluation)

 Why Sub 1 GHz is of interest for Smart Grid

 Existing incumbents and uses in the band

Standards for regional sub-GHz channel plans

802.15.4g (SUN) (Steve Pope)

 802.11ah (S1G) (Yongho Seok)

 (1 page summaries)

Standards for TV White Space

 802.15.4m (TVWS)

 802.11af (TVHT)

 802.22 (Apurva Mody)

 802.19.1

 Other types of systems

Applications

List of applications (Elec, Gas, Water meters, DA (PV/DER), street lights, “smart cities”, heat use sensors, DR, EV Charging)

 Application for backhaul from (GW/Concentrator/Router/Collector)

 Duty Cycle Requirements, Power Limitations, and their impact on usable applications

 Specific limitations of applications to portions of bands.

Summary of characteristics and key comparisons

 Reference PAP 2 table for facts about the standards

 Explanation and Interpretations of the data

Explanations of coexistence between similar standards in each group

**915 MHz ISM Band (and similar bands in other regulatory domains)**

Behavior of 802.11ah in the presence of 802.15.4g and vice versa.

 Based on CSMA/CA access mechanism

General interference resilience mechanisms

**TVWS**

 Database and geolocation operation to avoid interference with other users and broadcasters

Global regulatory environment

 FCC, CEPT, ARIB, CENELEC, ETSI, ITU,

 Related ETSI groups– TG28, ETSI TS303, TC294

 Areas that adopt other domain’s rules

 (Map of world with regulatory agencies highlighted)

 Coexistence in global bands

 Regulations call for fair and open access in unregulated spectrum.

Investigation in Europe shows that the slower technology loses in comparison to the faster technology.

Conclusions