**IEEE P802.24**

**Smart Grid TAG**

|  |  |
| --- | --- |
| Project | IEEE P802.24 Smart Grid Technical Advisory Group |
| Title | 802.24 white paper |
| Date Submitted | [16 September, 2013] |
| Source | [James Gilb][Tensorcom][] | Voice: [ ]Fax: [ ]E-mail: [ ] |
| Re: | [] |
| Abstract | [Whitepaper on 802 stnadards.] |
| Purpose | [Draft white paper.] |
| Notice | This document has been prepared to assist the IEEE P802.24. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein. |
| Release | The contributor acknowledges and accepts that this contribution becomes the property of IEEE and may be made publicly available by P802.24. |

[Introduction, value and history of 802 2](#_Toc367057859)

[Applications for Smart Grid 2](#_Toc367057860)

[AMI/AMR 2](#_Toc367057861)

[Demand response 2](#_Toc367057862)

[Distribution automation 2](#_Toc367057863)

[Protection/substation control 3](#_Toc367057864)

[Outage restoration management 3](#_Toc367057865)

[Load control 3](#_Toc367057866)

[Conclusions 3](#_Toc367057867)

802 applicability statement for Smart Grid

# Introduction, value and history of 802

Discusses IEEE 802 technologies only.

IEEE 802 is long lived (40 years 802.3, 20 years 802.11, 14+ years for 802.15 and 802.16), low cost, innovative (future proofing), open stand priniciples (from IEEE). Stable investment.

Add M2M capabilities of 802 standards. Low latency options.

Reference package of standards

802 standards always support backwards compatibility.

Security

License exempt possibilities. License exempt operation offers an alternative for the lack of licensed spectrum for utilities. TVWS is one example as a future source of spectrum.

Ben to write mesh blurb for how it handles hard-to-reach places.

Long term battery powered

Add latency/data rate/range tradeoffs table? Scalable cost.

# Applications for Smart Grid

Smart Grid applications can be summarized by two categories called Advanced Metering Infrastructure (AMI) and Distribution Automation (DA).

## Advanced Metering Infrastructure

Advance Metering Infrastructure is a concept that includes a variety of advance features. The list of features includes: Utility service Outage and Restoration Management, meter reading, Demand Response, Load Management, remove service disconnection/re-connection and service pricing capabilities that include Real Time Pricing, Time of Use pricing & Critical Peak pricing.

## Distribution Automation

The electric power system is logically separated by three main roles, these roles include: Generation, Transmission and Distribution. Distribution Automation is a concept of extending intelligent control to the distribution system that includes the following capabilities: Voltage Optimization, Load Reduction/Optimization, system fault detection & remediation and SCADA.

# Conclusions

(Gilb will write once paper is done)