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| **Radiocommunication Study Groups** |  |
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| Institute of Electrical and Electronics Engineers (IEEE) |
| [Comments on wireless data transmission technologies used for power grid management systems] |
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# Source Information

This contribution was developed by IEEE Project 802®, the Local and Metropolitan Area Network Standards Committee (“IEEE 802”), an international standards development committee organized under the IEEE and the IEEE Standards Association (“IEEE-SA”).

The content herein was prepared by a group of technical experts in IEEE 802 and was approved for submission by the IEEE 802.18 Radio Regulatory Technical Advisory Group, and the IEEE 802 Executive Committee, in accordance with the IEEE 802 policies and procedures, and represents the view of IEEE 802.

# Introduction

This contribution addresses ITU-R WP 1A’s Question ITU-R 236/1 titled “Impact on radiocommunication systems from wireless and wired data transmission technologies used for the support of power grid management systems”. That question was approved in September, 2011, and IEEE 802 had then and has now a number of Working Groups (WG) developing technologies meant for use in Smart Grid management. Detailed information on those technologies will be furnished in another contribution. The focus of this contribution is the mixture of spectrum to be used for Smart Grid management.

# Proposal for identification of spectrum

Regulators in many national administrations have recognized the importance of the Television Band White Spaces (“TVWS”) spectrum. There is an on-going discussion about the most appropriate use of the TVWS and the benefits of licensed versus the license-exempt usage as part of a conversation about the future use of the television bands generally. Currently in the Unites States the TVWS frequency band is identified for unlicensed use and the associated technical rules dictate how the devices in that frequency band are required to operate. IEEE 802 has developed and continues to develop standards for a wide variety of applications including smart grid, regional and rural broadband access, local area networks and hotspots, healthcare and others within the regulatory framework established by the FCC including TVWS.

4. IEEE 802 supports the establishment of a regulatory framework permitting the use of license-exempt technology in a number of frequency bands including those that an administration may designate as being TVWS. We believe that opening up spectrum, to include TVWS, for license-exempt, in addition to licensed use, will spur unique innovations to address the meaningful communications needs of consumers, businesses and government agencies. Spectrum should not remain unused if there are radio technologies that can make use of the spectrum within the established regulatory framework including that established for the use of the TVWS frequency bands.

5. It is worth noting that significant innovations in wireless communications standards such as IEEE 802.11 (Wi-Fi™), and IEEE 802.15.1 (Bluetooth™) were developed for use in frequency bands without exclusive licenses. It should be noted that some wireless cellular service providers use other wireless technologies such as Wi-Fi that operate in license-exempt spectrum. This reduces congestion, provides network redundancy, and can provide high data rates to ensure service quality in a cost-effective manner. IEEE 802 has contributed significantly to the use of unlicensed spectrum and will continue to do so. Provision of more license-exempt spectrum will allow further useful developments.

6. [Across various industries the use of the TVWS spectrum is vital, given its propagation characteristics, improved building penetration and enhanced regional and rural coverage.]

7. In apportioning the frequency bands between licensed and license-exempt use it is important to make certain that a substantial amount of spectrum is kept available for license-exempt use.

8. License-exempt use of TVWS spectrum could support applications in healthcare, education, smart utility networks, disaster recovery, environment monitoring, critical infrastructure monitoring, border protection, homeland security, high speed internet, and other countless innovative areas.

9. IEEE 802 has and continues to develop a number of standards and amendments to standards that provide wireless both license-exempt and licensed communications services in various frequency bands including those that may be designated as TVWS.

10. **Conclusion**

**[**IEEE 802 respectfully submits its position endorsing license-exempt use of the Television band White Spaces and other portions of spectrum deemed appropriate for Smart Grid management. We believe that the identification of license-exempt spectrum, to include TVWS spectrum, to cognitive radio sharing technology can spur innovation to address meaningful communications needs of consumers, businesses and governments. IEEE 802 requests that in any on-going allocations proceedings substantial license-exempt devices spectrum be identified in TVWS and any other spectrum deemed appropriate for Smart Grid management systems.]

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