**IEEE P802.11**

**Wireless LANs**

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| HEW Channel Model Document Template |
| The purpose of this document is to record progresses and consensus related to channel model.  |
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Abstract

This document provides the addendum to the TGn and Tgac channel model document to be used for HEW study group and future task group.

**Revision History**

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| **Date** | **Version** | **Description of changes** |
| 07/24/13 | 0.1 | After July 2013 meeting in Geneva, group decides to start documenting the contributions and discussions. |
| 10/10/2013 | 0.2 | Including the progress and consensus reached in IEEE 802.11 September meeting in Nanjing |

# Introduction

The TGn and Tgac task group has developed a comprehensive MIMO broadband channel model, with support for up to 160 MHz channelization and 8 antennas [1-2]. The HEW and future task group is targeting to improve MAC and PHY efficiency in dense networks for both indoor and outdoor scenarios.

This document describes possible modifications and additions to TGn and TGac channel models to enable their use for 11ax and future task group.

# Consensus Reached

**Indoor channel models**

The HEW study group agrees that TGn and TGac channel models should be adopted as HEW indoor channel models. The network simulation required penetration loss should be addressed as part of channel model document.

**Outdoor channel models**

A couple of outdoor channel model have been proposed [3-6]. The HEW study group agrees that adopting existing outdoor channel models from cellular organization with proper modifications [7].

 Given the fact that WINNER II channel and ITU models are very similar [10-11], the HEW study group decided to choose ITU channel model as the baseline of outdoor channel models.

Based on analysis of range [8], definition of environment and deployments, the HEW study group decides to choose ITU UMi channel models as the baseline outdoor channel models for HEW and future task group for performance comparison and evaluation. Performance degradation is allowed when designs based on specifications of HEW and the future task group are applied to UMa channel models.

# In Progress and Existing Topics for Discussion

Expanding the ITU channel models to 160MHz has been discussed in [9].

Penetration loss should be discussed for outdoor simulation scenario.

STA-to-STA outdoor channels, using UMi channel models with adjustment of heights. [12]

**References**

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6. “Outdoor Channel Model Candidates for HEW”, IEEE 802. 11-13/0996r1, Samsung, Kaushik Josiam, etc.
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11. IST-4-027756 WINNER II, D1.1.2 V1.1, *WINNER II Channel Models*
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