

Mobile Channel Models for 802.16m

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To help develop the Mobile Channel Models for 802.16m evaluation.

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Outline

- Introduction
- Link Level Channel Models
- System Level Channel Models
- Conclusion

Introduction

- IEEE802.16m is calling for the initial contributions in the areas of deployment scenarios, mobile channel models and services to be provided.
- This briefing presents some consideration about mobile channel models for 16m evaluation.

Link Level Channel Models(1/2)

- Scenarios:
 - Indoor;
 - Pedestrian;
 - Vehicle: lower speed(<60km/h),
higher speed(>120km/h, 250km/h, higher)
- Classification
 - single antenna link level channel model
 - multiple antenna link level channel model
- General factors:
 - Path Gain
 - Path Delay
 - Doppler Profile
 - Antenna Pattern
 - Spatial Coherence
 - LOS
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Link Level Channel Models(2/2)

- Have defined
 - Recommendation ITU-R M.1225 for IMT-2000 (3GPP,3GPP2)
 - SUI Channel Model for 16d
 - SCM and SCME

System Level Channel Models (1/2)

- Scenarios
 - Suburban (Macro)
 - Urban (Macro, Micro, others)
- Classification
 - multi-path channel model
 - spatial channel model
- General factors
 - Center frequency
 - Bandwidth
 - Antenna pattern
 - Power delay profile
 - Angle spread (AOD, AOA)
 - Power azimuth spectrum
 - Doppler spectrum
 - Spatial correlation
 - Pathloss model
 - Shadowing
- Other factors based on scenarios
 - Antenna polarization
 - Scattering channel model
 - LOS
 - Urban canyon model

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System Level Channel Models (2/2)

- Have defined
 - ITU: for single antenna
 - SCM: for MIMO simulation up to 5MHz
 - SCME: extension up to wider bandwidth
- Other problem –
 - Various pathloss models: Okumura-Hata, Cost 231, Cost 231-WI, and so on
 - for different scenarios
 - for different frequency
 - for some frequency, no suitable pathloss models
 - Modify pathloss model basically based on experience

Conclusion

- Same Channel Models are required for 16m and IMT-Advanced.
- Newly define, reuse or modify current channel models for 16m evaluation?
- More discussion