TSG-RAN WG1 #85
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R1-165347

Source: Ericsson, AT&T, ETRI, Huawei, HiSilicon, Intel, KT Corporation, Nokia, NTT DOCOMO, Qualcomm, Samsung
Agenda Item: 7.2.3.1
Document for: Discussion, Decision

WF on blockage modeling

Background

- Two alternative blocking models contained within agreement in R1-163473
  - A is a stochastic model with parameters derived from experiments with B
    - See R1-162234 for background
  - B is a geometric model with physical dropping of blocking screens
    - See R1-163247 for background

Background

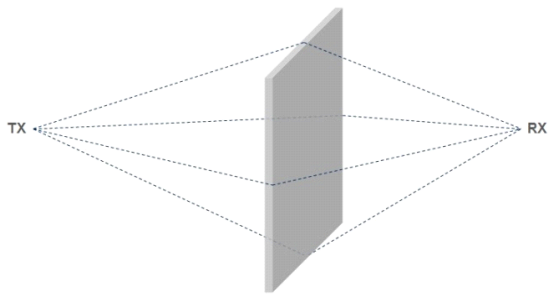
- Advantages of A
  - Alternative A can be completely described and parameterized for implementation
  - The computational complexity increase is small
  - The model is spatially consistent
  - ...

- Disadvantages of A
  - The model parameters are derived for one very specific blocking scenario
  - Extensions to other blocking scenarios is not straightforward
  - Spatial variations of blocking loss not calibrated against measurements
  - Moving blocking objects not parameterized

	x_k	φ_k	y_k	θ_k	Loss (in dB)
$k = 1$ (Portrait)	120°	260°	80°	100°	15
$k = 1$ (Landscape)	160°	40°	75°	110°	15
$k = 2, \ldots, 5$	2.5°	Unif([0, 2π])	15°	π/2	N(16.42 dB, $\sigma^2 = 0.8869$)

Background

- Advantages of B
  - Model parameters are readily understandable by anyone, extension to other blocking scenarios is straightforward
  - The model has been extensively validated by measurements
  - The model is consistent in space-time-frequency



- Disadvantages of B
  - The computational complexity is disputed
  - Model not completely parameterized
    - Can be done as part of simulation assumptions
    - Can be an advantage or a disadvantage depending on point of view

Summary

- Both approaches have their use cases
  - A when a generic and computationally efficient blocking scenario is needed
  - B when a specific and more realistic blocking scenario is needed

- Proposal: Adopt both A and B as optional blocking models