EEE P802.11  
Wireless LANs

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| Text proposal of a Stadium scenario to ax | | | | |
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# 3a - Indoor Small BSSs Scenario for Stadium

This scenario has the objective to capture the issues and be representative of real-world stadium deployments with a rather low separation between APs and with very high density of STAs:

* In such environments, the network (ESS) is carefully planned. For simulation complexity simplifications, a 2D strip is proposed as a representation of a portion of the seating area. Furthermore, the stip is wrapped round the edges in order to avoid propagation artifacts.
* In such environments the following is to be considered:
  + Interference between APs belonging to the same managed ESS due to high density deployment
  + Interference with unmanaged networks (P2P links)
  + Uplink/Downlink asymmetry covering topology, power levels, range, and carriers sensing aspects

It is important to define a proportion ([50 %][[1]](#footnote-1)) of legacy devices in this scenario that do not implement the proposed solution under evaluationto ensure that the solution will keep its efficiency in real deployments (some solutions may be sensitive to the presence of legacy devices while others would not). These legacy devices shall simply keep the baseline default parameters and shall not implement the proposed solution under evaluation.

The text below highlights only the differences with the parameters adpoted for Indoor Small BSS Scenario:

|  |  |  |
| --- | --- | --- |
| **Parameter** | | **Value** |
|  | | |
| **Topology (A)** | | |
| Figure X - Layout of BSSs in a Stadium deployment    Figure X+1 - Layout of BSSs in a Stadium deployment using the same channel in case frequency reuse 3 is used | | |
| Environment description | | Inter BSS distance (ICD): 12 m |
| APs location | | APs are dropped only within the rechtangle |
| STAs location | | STAs are dropped only within the rechtangle |
| Number of STA and STAs type | | N = Nseats×N\_STA/seat×P, where P is a probability factor between 0 and 1.  Nseats = 144  N\_STA/seat = 1.5 |
| Channel Model | | UMi for AP-STA  For STA-STA and AP-AP, use the same model as is chosen for outdoor  All STAs assumed to be outdoors (UMi specifies a fraction of users to be indoors and outdoors, respectively) |
|  | | |
| **PHY parameters** | | |
| AP antenna gain | +12dBi | |
| STA antenna gain | 0dBi | |
|  | | |
| **MAC parameters** | | |
| RTS/CTS Threshold | | [TBD] |
| Association | | [X% of STAs are associated with the strongest AP, Y% of STAs are associated with the second-strongest AP, and Z% of STAs are associated with the third-strongest AP. N% of STAs are not associated. Detailed distribution to be decided.]  [X=50, Y=30,Z=20, N=0%] |

1. <https://www.abiresearch.com/market-research/product/1016669-adoption-of-80211ac-will-be-a-little-faste/> suggests that the adoption of 802.11ac is roughly 50% three years after market introduction. Numbers seemed to be the same with 802.11n. [↑](#footnote-ref-1)