IEEE P802.11
Wireless LANs

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| Insert Virtual Desktop Infrastructure (VDI) Traffic Model Content for HEW Simulation Scenarios |
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# Abstract

In previous presentations (see references) to the HEW Study Group the authors introduced Virtual Desktop Infrastructure (VDI) as Enterprise traffic, presented a traffic study for VDI, analyzed VDI traffic formations, and presented a traffic model to simulate the sample VDI traffic.

This document provides edits to Annex 1 and Annex 2 of the draft Simulations Scenario document IEEE 802.11-13/1001r9 to incorporate the VDI traffic model into the appropriate Enterprise Simulation Scenario.

# Problem 1

Annex 1 and Annex 2 are missing content for the VDI traffic model, used in scenario 2.

# Remedy 1

[Insert row data into the tables in Annex 1 as:]

# Annex 1 - Reference traffic profiles per scenario

**Reference traffic profile for Scenario 2**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Traffic Model #**  | **Traffic model name**  | **Description**  | **Application traffic** **(Forward / Backward)**  |  **Application Load (Mbps)** **(Forward / Backward)**  | **A-MPDU Size (B)** **(Forward / Backward)**  |
| T1  | Local file transfer  | FTP/TCP transfer of large file within local network  | FTP file transfer / FTP TCP ACK  | Full buffer / 0.1  | Max A-MPDU / 64  |
| T2 | Lightly compressed video |  |  |  |  |
| T3 | Internet streaming video/audio |  |  |  |  |
| T4 | 4k video streaming |  |  |  |  |
| T5 | Online game server |  |  |  |  |
| T6 | Management: Beacon  |  |  |  |  |
| T7 | Management: Probe requests |  |  |  |  |
| T8 | Virtual desktop infrastructure |  |  |  |  |

[Insert text to the end of Annex 2 as:]

# Annex 2 – Traffic model descriptions

**Virtual Desktop Infrastructure Traffic Model**

Virtual desktop infrastructure (VDI) traffic is generated from a server, and traverses multiple hops in the intranet before arriving at AP for transmission to STA. For the transmission from AP to STA, it is a single-hop bidirectional traffic beween AP and STA.VDI traffic transfers from server to STA/client via AP over TCP/IP protocol. This model describes the attribution of traffic from AP to STA, and VDI application type navigation and feedback traffic from the STA to AP.

The VDI traffic from AP to STA is generated as follows.

**Step 1:** VDI traffic generation

The VDI traffic is generated as shown in Figure xx. At application layer, arrival interval of VDI packets is generated according to exponential distribution.



Figure xx Traffic generation model

Traffic direction specific parameters for packet arrival time are specified in Table xx.

**Step 2**: At MAC layer generate VDI MSDU frame size (in bytes) for uplink and downlink transmission, respectively.

For uplink the packet size is generated according to a Normal distribution. For downlink the packet size is generated with a bimodal Normal distribution. The traffic direction specific PDFs and the packet size parameters are specified in Table xx.

|  |  |  |  |
| --- | --- | --- | --- |
| **Component** | **Distribution** | **Parameters** | **PDF** |
| **DL** | **UL** | **DL** | **UL** |
| Initial packet arrival (ms) | Uniform | Uniform | a=0, b=20  | a=0, b=20 |  |
| Packet arrival time (ms) | Exponential  | Exponential  |  |  |  |
| Packet size (Byte) | Normal | Bimodal Normal  |  |  |  |

Table xx Parameters for VDI traffic model

**Evaluation metrics**

* MAC throughput
* Latency

**References for traffic models**

**[1] Yingpei Lin et al., [11-13-1133-00-0hew-virtual-desktop-infrastructure-vdi](https://mentor.ieee.org/802.11/dcn/13/11-13-1133-00-0hew-virtual-desktop-infrastructure-vdi.pptx)**

**[2] Yingpei Lin et al., [11-13-1438-00-0hew-traffic-observation-and-study-on-virtual-desktop-infrastructure](https://mentor.ieee.org/802.11/dcn/13/11-13-1438-00-0hew-traffic-observation-and-study-on-virtual-desktop-infrastructure.pptx)**

**[3] Yingpei Lin et al., [11-14-0056-01-0hew-traffic-model-on-virtual-desktop-infrastructure](https://mentor.ieee.org/802.11/dcn/14/11-14-0056-01-0hew-traffic-model-on-virtual-desktop-infrastructure.pptx)**