**Wireless Access Network**

Wifi 7 IEEE 802.11be

Simulation spesifications:

| **Parameter** | **Nilai** |
| --- | --- |
| Standard | IEEE 802.be (WiFi 7) |
| Bandwidth | 20 / 40 / 80 / 160 / 320 MHz |
| Frequency | 2.4 GHz, 5 GHz, 6 GHz |
| Modulation | BPSK – 4096-QAM |
| OFDMA Streams | 16 streams |
| Transmission Scheme | EHT (Extremely High Throughput) |
| Throughput Target | 30 Gbps |

Procedure:

1. Add INET Framework.
2. Open CMD and use MSYS2 ming64 Shell (OMNET++ feature)
3. git clone <https://github.com/inet-framework/inet.git>
4. cd inet
5. git checkout inet-4.5.2
6. inet/examples/wireless
7. Directori structure :

/omnetpp-6.x/

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├── inet/

│ ├── src/

│ ├── examples/

│ └── omnetpp.ini

├── my\_project/

│ ├── Simulations.ned

│ └── omnetpp.ini

1. .ned file

|  |
| --- |
| package wifi7;  import inet.node.inet.AccessPoint;  import inet.node.inet.WirelessHost;  import inet.environment.simple.PhysicalEnvironment;  import inet.visualizer.integrated.IntegratedCanvasVisualizer;  import inet.physicallayer.common.RadioMedium;  import inet.networklayer.configurator.ipv4.Ipv4NetworkConfigurator;  network Wifi7Simulasi  {  submodules:  radioMedium: RadioMedium {  @display("p=100,100");  }  configurator: Ipv4NetworkConfigurator {  @display("p=100,200");  }  visualizer: IntegratedCanvasVisualizer {  @display("p=100,300");  }  ap: AccessPoint {  @display("p=300,200;i=device/accesspoint");  }  host[4]: WirelessHost {  @display("i=device/laptop");  }  } |

1. Omnetpp.ini

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| --- |
| [General]  network = wifi7.Wifi7Simulasi  sim-time-limit = 20s  # Visualizer settings  \*.visualizer.\*.radioMediumVisualization = true  # WLAN configuration  \*.host[\*].wlan[\*].typename = "IdealWirelessNic"  \*.ap.wlan[\*].typename = "IdealWirelessNic"  # Physical Layer configuration  \*.host[\*].wlan[\*].radio.transmitter.carrierFrequency = 6GHz  \*.host[\*].wlan[\*].radio.transmitter.bandwidth = 320MHz  \*.host[\*].wlan[\*].radio.transmitter.bitrate = 30Gbps  \*.host[\*].wlan[\*].radio.transmitter.modulation = "qam4096"  \*.host[\*].wlan[\*].radio.transmitter.numStreams = 16  \*.ap.wlan[\*].radio.transmitter.carrierFrequency = 6GHz  \*.ap.wlan[\*].radio.transmitter.bandwidth = 320MHz  \*.ap.wlan[\*].radio.transmitter.bitrate = 30Gbps  \*.ap.wlan[\*].radio.transmitter.modulation = "qam4096"  \*.ap.wlan[\*].radio.transmitter.numStreams = 16  # Mobility (opsional, bisa diatur acak)  \*.host[\*].mobility.typename = "StationaryMobility"  \*.ap.mobility.typename = "StationaryMobility"  # Network Configurator  \*.configurator.config = xmldoc("IPv4Config.xml") |

1. IPv4 Config.xml

Place the file same at .ini & .ned

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| --- |
| <config>  <interface hosts="host[0]" address="192.168.1.2" netmask="255.255.255.0"/>  <interface hosts="host[1]" address="192.168.1.3" netmask="255.255.255.0"/>  <interface hosts="host[2]" address="192.168.1.4" netmask="255.255.255.0"/>  <interface hosts="host[3]" address="192.168.1.5" netmask="255.255.255.0"/>  <interface hosts="ap" address="192.168.1.1" netmask="255.255.255.0"/>  </config> |