Exercise 8

Simple WLAN Scenario

Create a simple WLAN scenario with one static wireless host as depicted in Figure 1.

Connect the WLAN access point (`AccessPoint`) and station B via an Ethernet switch (`inet.node.ethernet.EtherSwitch`). Use the `FlatNetworkConfigurator` to configure IP addresses in your network. Some of the necessary configuration parameters are listed on the following page.
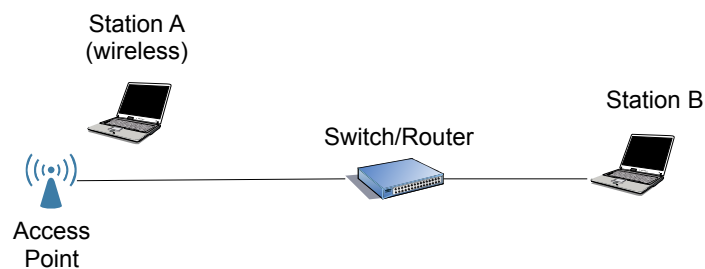

Figure 1: Simple WLAN scenario

Run the simulation to test your scenario, for example using your VoIP application from exercise 7 to transmit some data. What do you notice at the start of the simulation?

Replace the Ethernet switch between station B and the access point with a router (`inet.node.inet.Router`)
- Does the data transmission still work as before?
- Which problem does occur?
- You can change the Ethernet connection between station B and the router to PPP to get some more hints what the problem is.
- How can you solve the problem?

Some omnetpp.ini parameters:

```
**.constraintAreaMinX = 0m
**.constraintAreaMinY = 0m
**.constraintAreaMinZ = 0m
**.constraintAreaMaxX = 600m
**.constraintAreaMaxY = 400m
**.constraintAreaMaxZ = 0m

**.channelNumber = 0
**.mobilityType = "StationaryMobility"
**.mobility.initFromDisplayString = false
**.ap.mobility.initialX = 20m
**.ap.mobility.initialY = 20m
**.ap.mobility.initialZ = 0m
**.sta_a.mobility.initialX = 15m
**.sta_a.mobility.initialY = 15m
**.sta_a.mobility.initialZ = 0m

# channel physical parameters
**.carrierFrequency = 2.4GHz
**.transmitter.power = 20mW
**.receiver.sensitivity = -110dBm
**.pathLoss.alpha = 2

# NIC settings
**.mac.address = "auto"
**.mac.maxQueueSize = 14
**.mac.rtsThresholdBytes = 3000B
**.wlan[*].mac.retryLimit = 7
**.wlan[*].mac.cwMinData = 7
```