

# **Wireless Mesh Networks (WMNs)**

**A Community Infrastructure**

A series of horizontal stripes in various colors (yellow, green, blue, dark blue, orange, red, white, light green) spanning the width of the slide.

# What is a Mesh Network?

- Let us think of a set of people who are performing the same functions at different locations - **P2P Network**
- We further perceive a subset of these people who can perform additional tasks at one or a few locations - **Gateway Network**

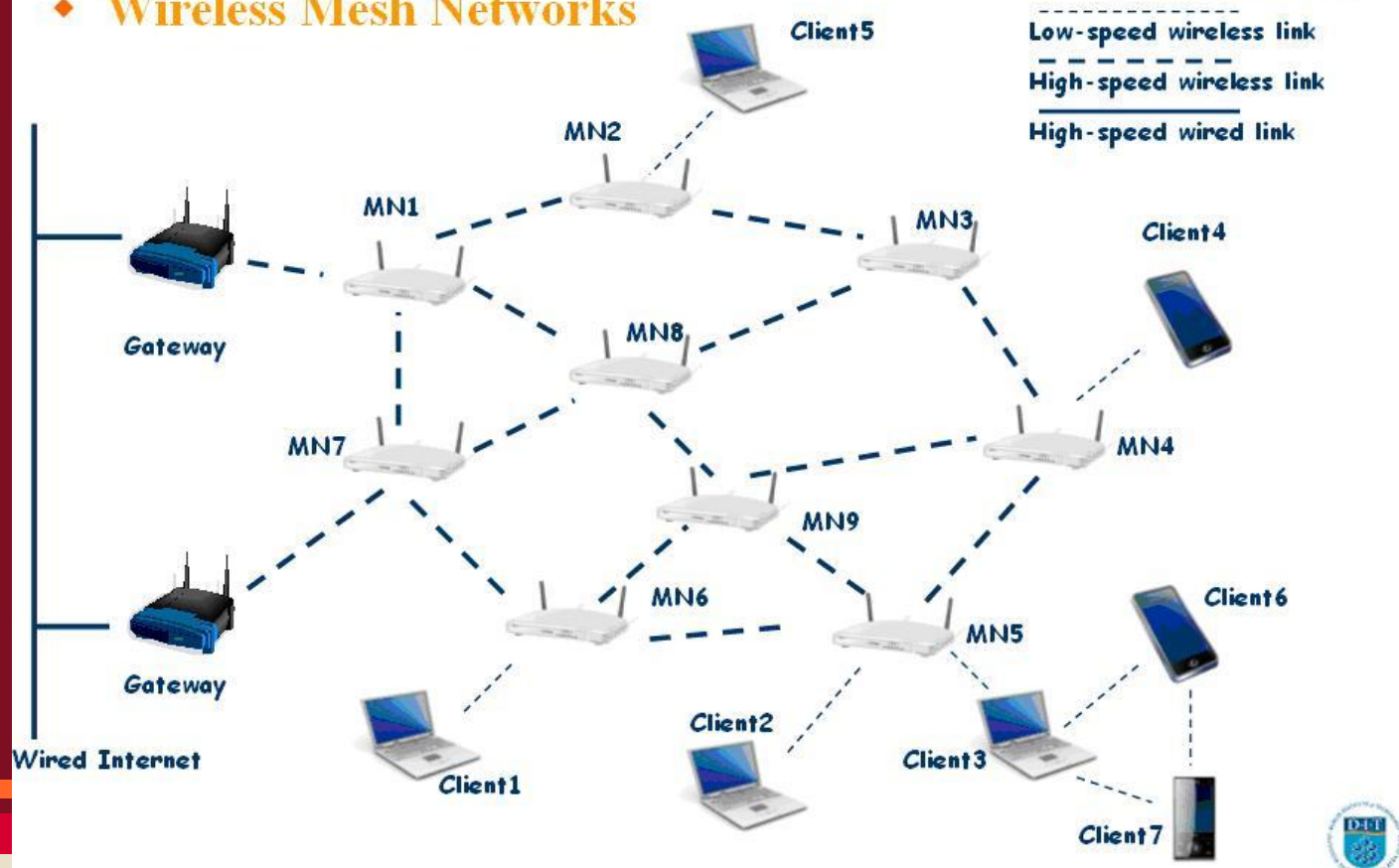
# Technical Definition: A Radio Network

A WMN is a radio network that consists of the following components as represented in the next slide using a network graph:

- Mesh Routers (MRs) or sensor nodes
- User devices e.g PDAs, Smartphones, Laptops, etc
- Internet Gateway (s)

# WMN Network Graph

## ◆ Wireless Mesh Networks



# WMN: A paradigm shift?

## Benefits:


- low-cost
- Robust : dynamic and reliable
- Scalable: expansion via community participation
- Fast deployment (no cabling)
- Temporary network Infrastructure

# Application Scenarios

- Environmental monitoring,
- Surveillance/Traffic control,
- Remote telemedicine,
- Emergency scenarios,
- Vehicular networks and
- **Community Networks.**

# Mesh Router Options: Vendor vs custom

Typical examples are

- TP Links
-  Raspberry pi (can add sensors)
  - Mesh potato (includes adapter for local telephony)

# Mesh Router Options: Vendor vs custom

- TP Links





# Mesh Router Options: Vendor vs custom



Raspberry pi  
(can add sensors)



# Mesh Router Options: Vendor vs custom

- Mesh potato  
(includes adapter for  
local free telephony)



## Application Context: Volos perspectives

- The photobooth project
- The exchange of message project “Mailbox”
- The city questions project
- Calamargo