

Networks

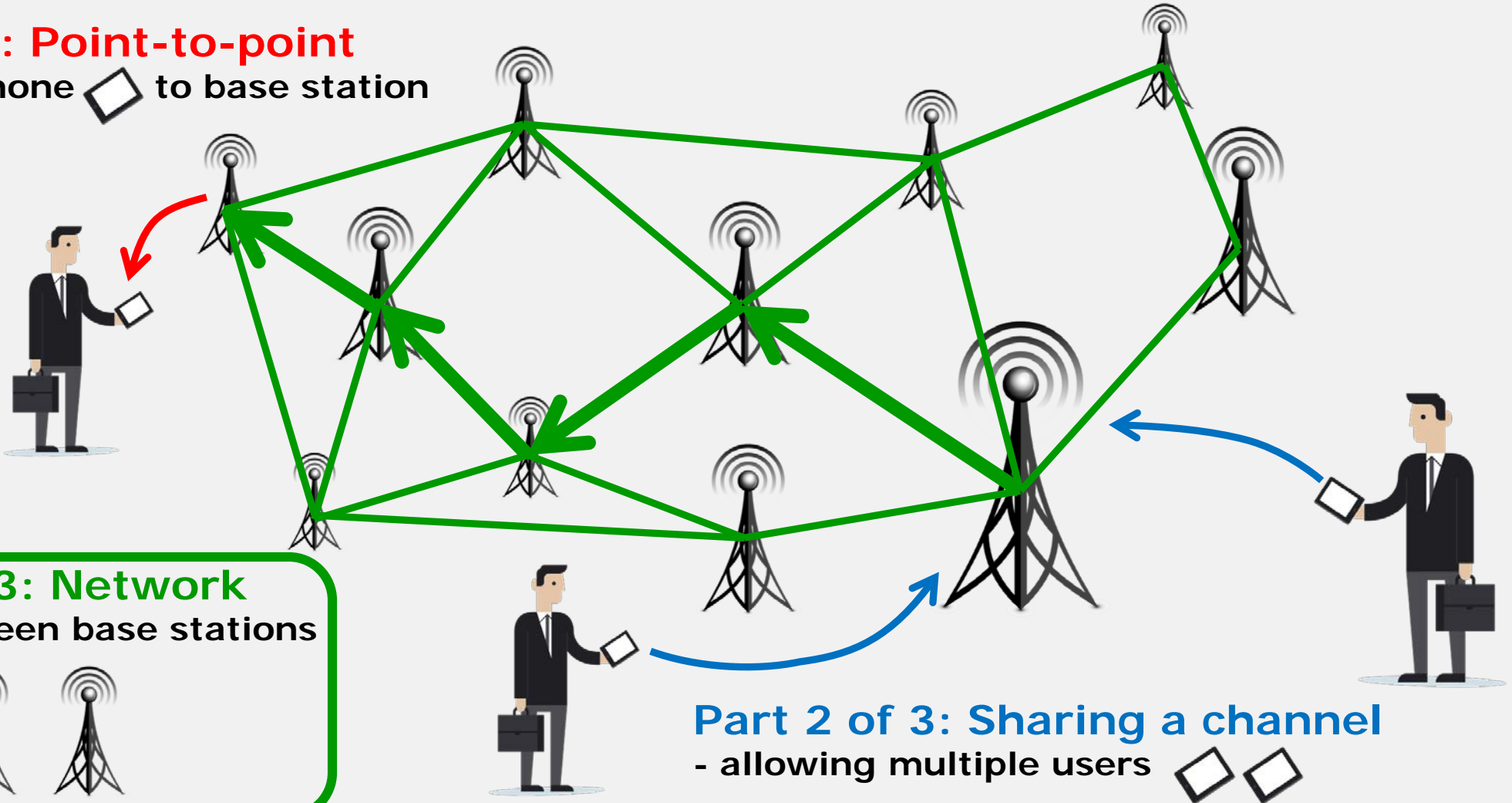
How to transmit information wirelessly?



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Part 1 of 3: Point-to-point

- link from phone  to base station



Part 3 of 3: Network

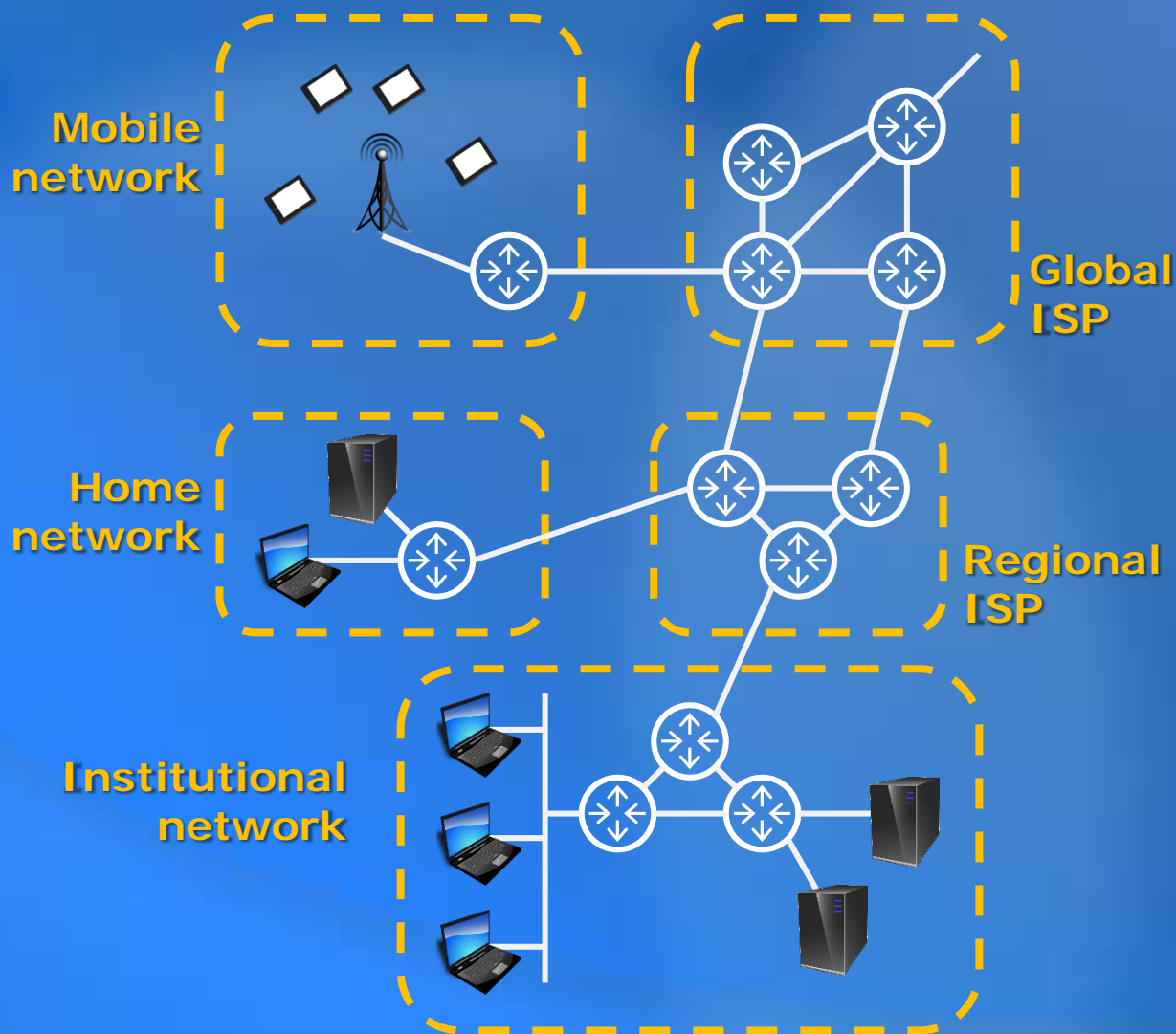
- links between base stations



Part 2 of 3: Sharing a channel

- allowing multiple users  

Internet



ISP: internet service provider

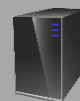
- The internet is a network of network
- Nodes may be
 - routers, which forward data
 - hosts or end systems
 - PC, server, mobile device
- Nodes are connected by communication links
 - fiber, copper, radio, satellite



PC



base station
or access point



server



wired link

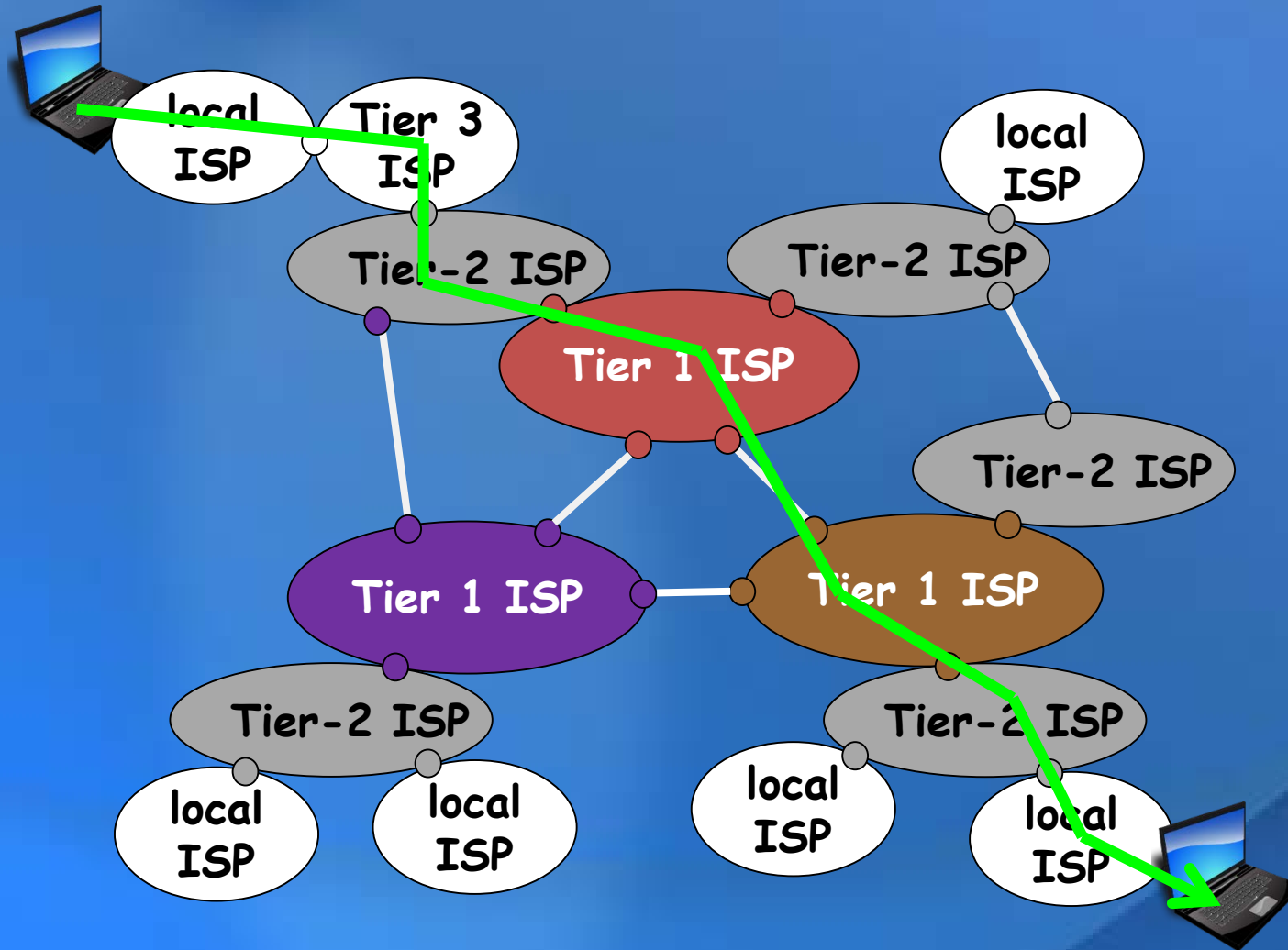


mobile device

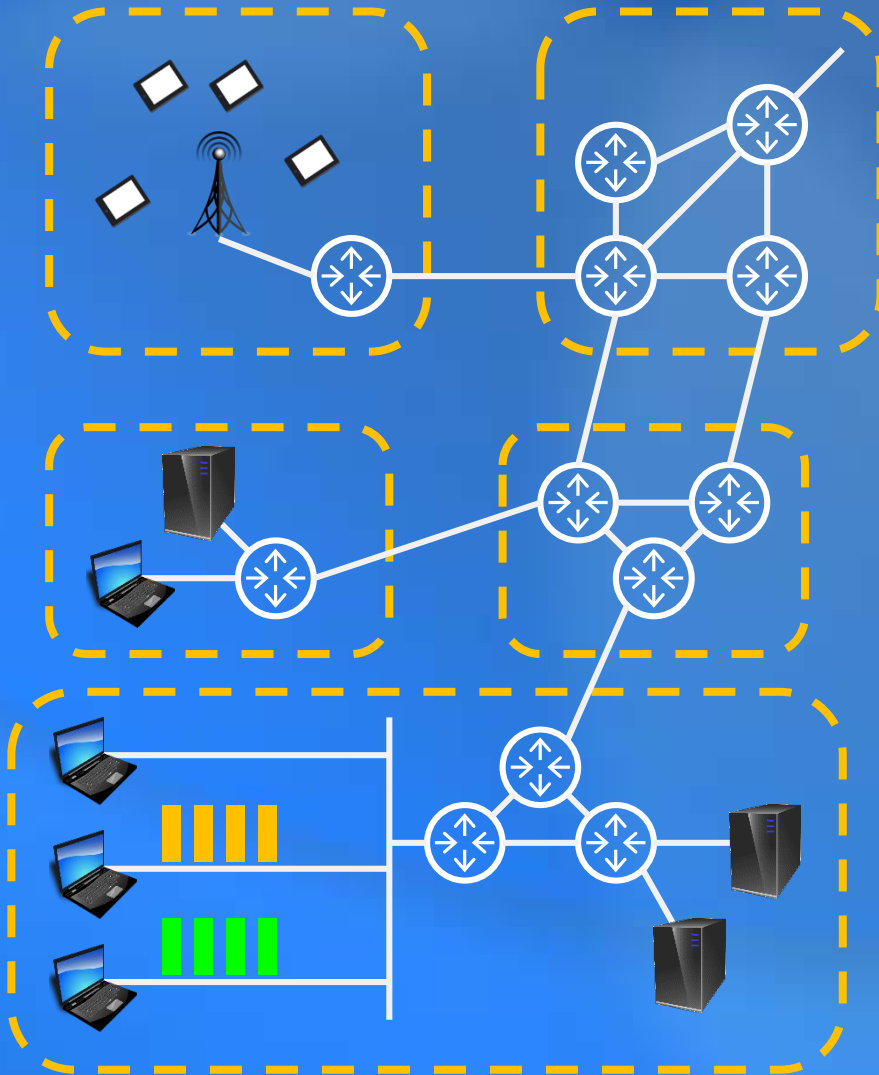


router

Rough Hierarchy



Packet Switching



- End-end data stream divided into packets
- Users share network resources via statistical multiplexing
 - transmit as needed
 - traffic assumed random
- When transmitting, each packet occupies full link bandwidth
- No guaranteed performance, but better sharing of resources