ECE/CSC 575 Introduction to Wireless Networking
Chapter 1 – Introduction

Wenye Wang

Overview of the Course

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- an expert on any particular subject or field
- the most recently developed algorithms, protocols, solutions, standards in any field.
- theories, proofs, specs, data or parameters, etc.

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- **Expectations**:
  -
  -
  - And more . . . .

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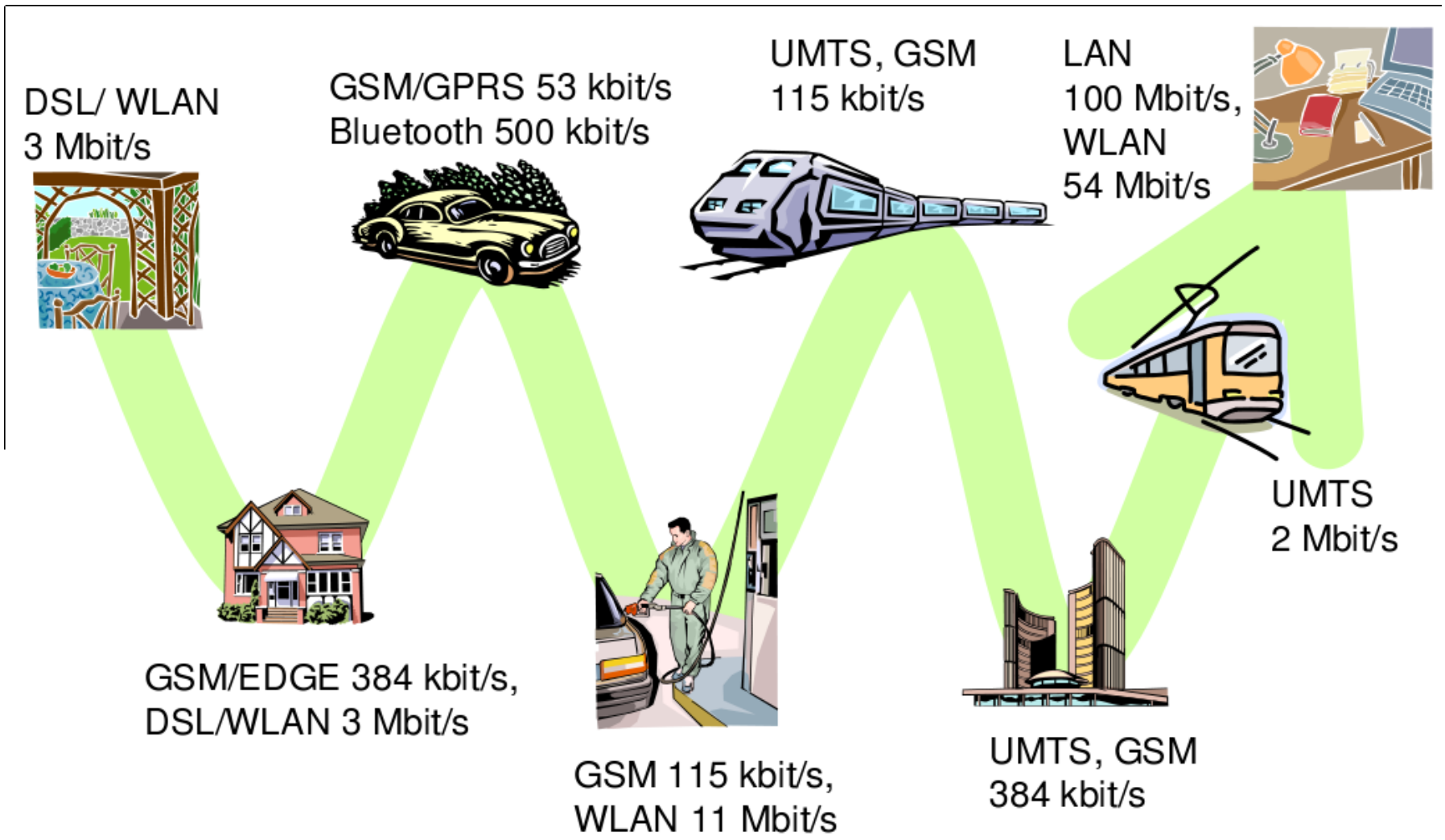
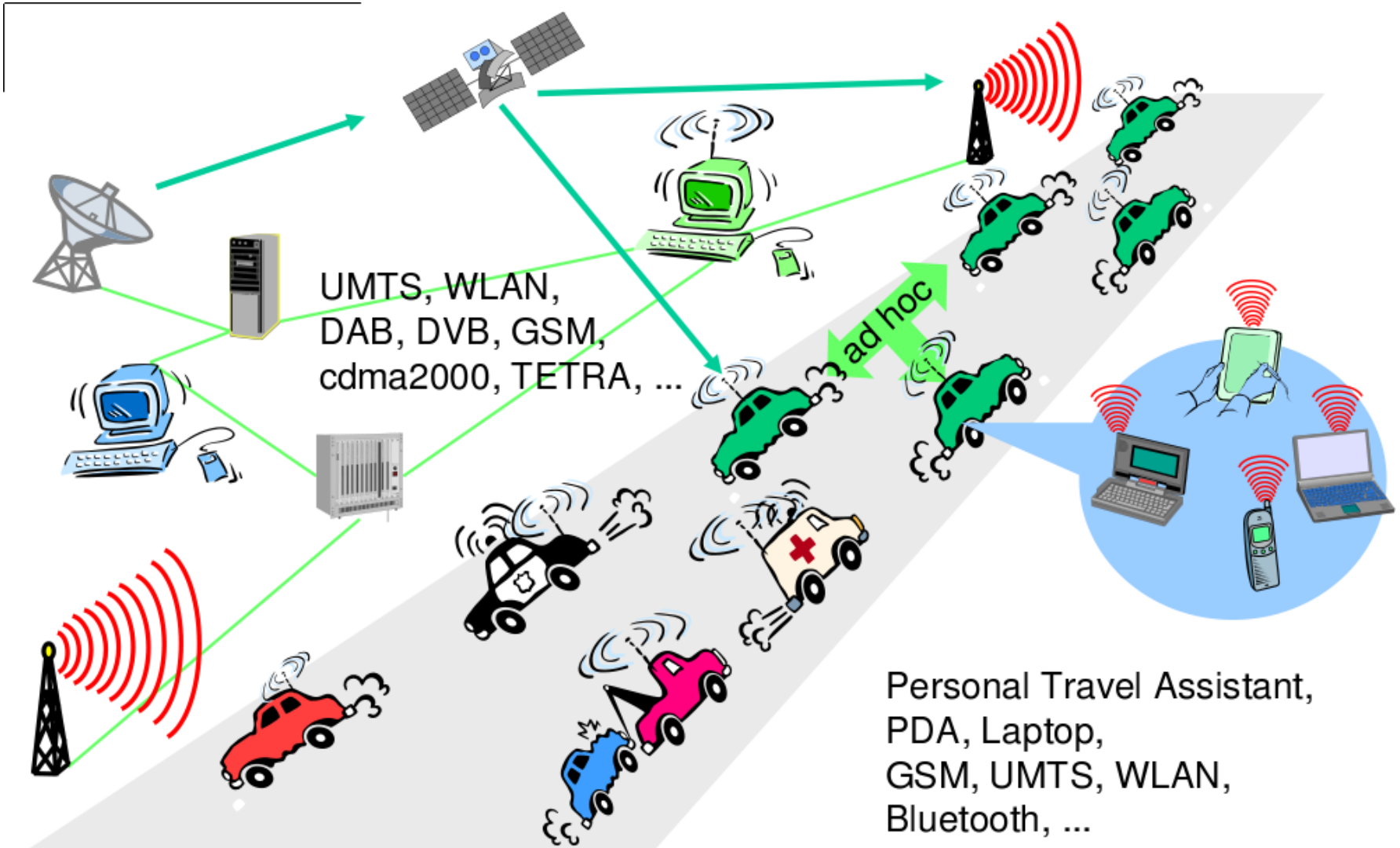
Wireless Devices

Wireless Data Rate



Wireless Acccess: Technologies



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Transmission over the propagation channels Modulations, coding/decoding, interferences, multiplexing etc.

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Networking layer

- Handoff management
- Location management
- Traffic management

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- 1984: AMPS (Advanced Mobile Phone Service) introduced by AT&T in North America.

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- 1991: Japanese PDC (Personal Digital Cellular) system standardized by the MPT (Ministry of Posts and Telecommunications)
- 1992: Phase I GSM system is operational Interim Standard IS-95 (CDMA) adopted by TIA
- 1994: Interim Standard IS-136 adopted by TIA

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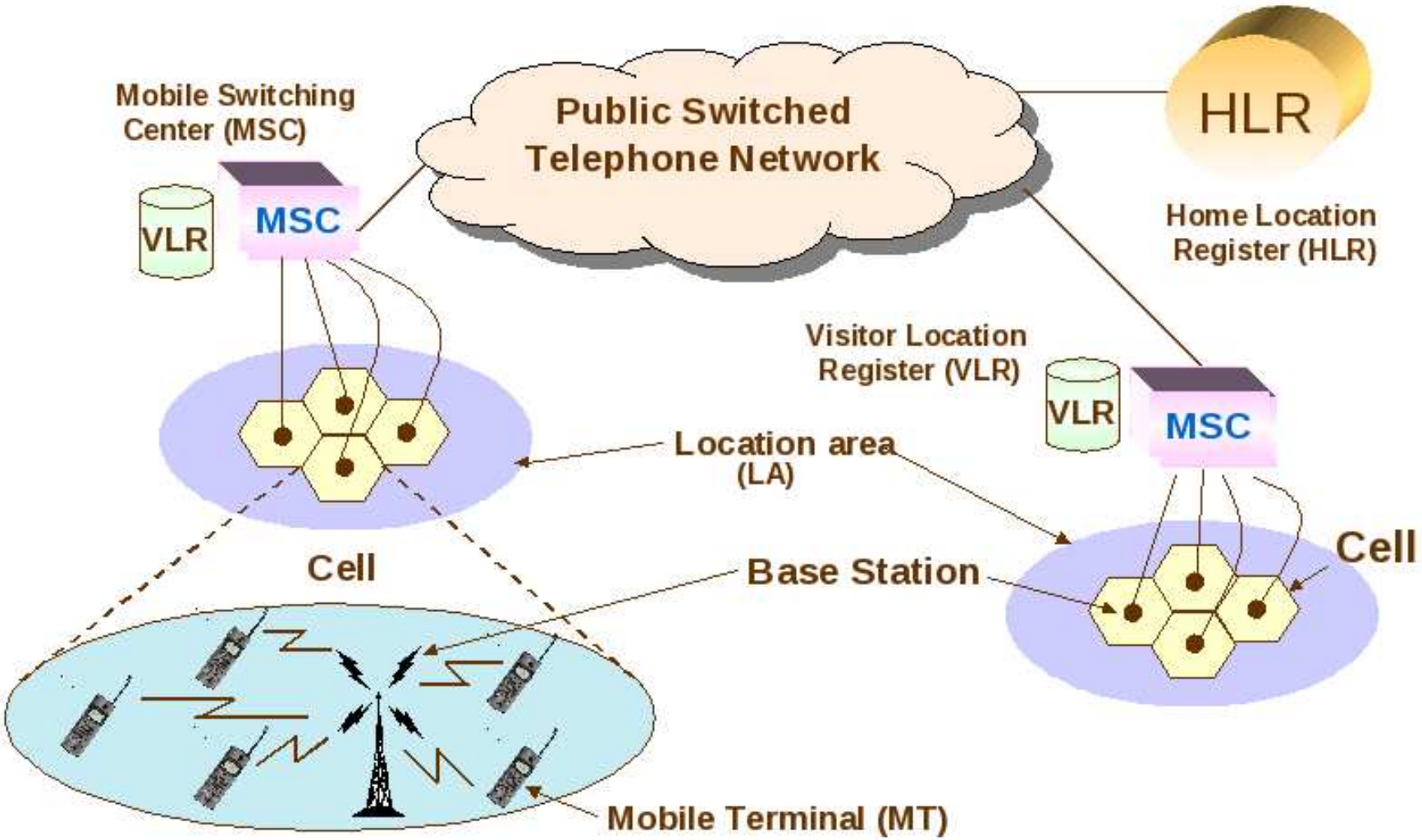
- 1994: Interim Standard IS-136 adopted by TIA
- 1995:PCS Licenses issued in North America
- 1996: Phase II GSM operational
- 1997: North American PCS deploys GSM, IS-54, IS-95
- 1999: IS-54 (North America), IS-95 (North America, Hong Kong, Israel, Japan, China, etc), GSM (110 countries).

Example: How does my cell phone work?



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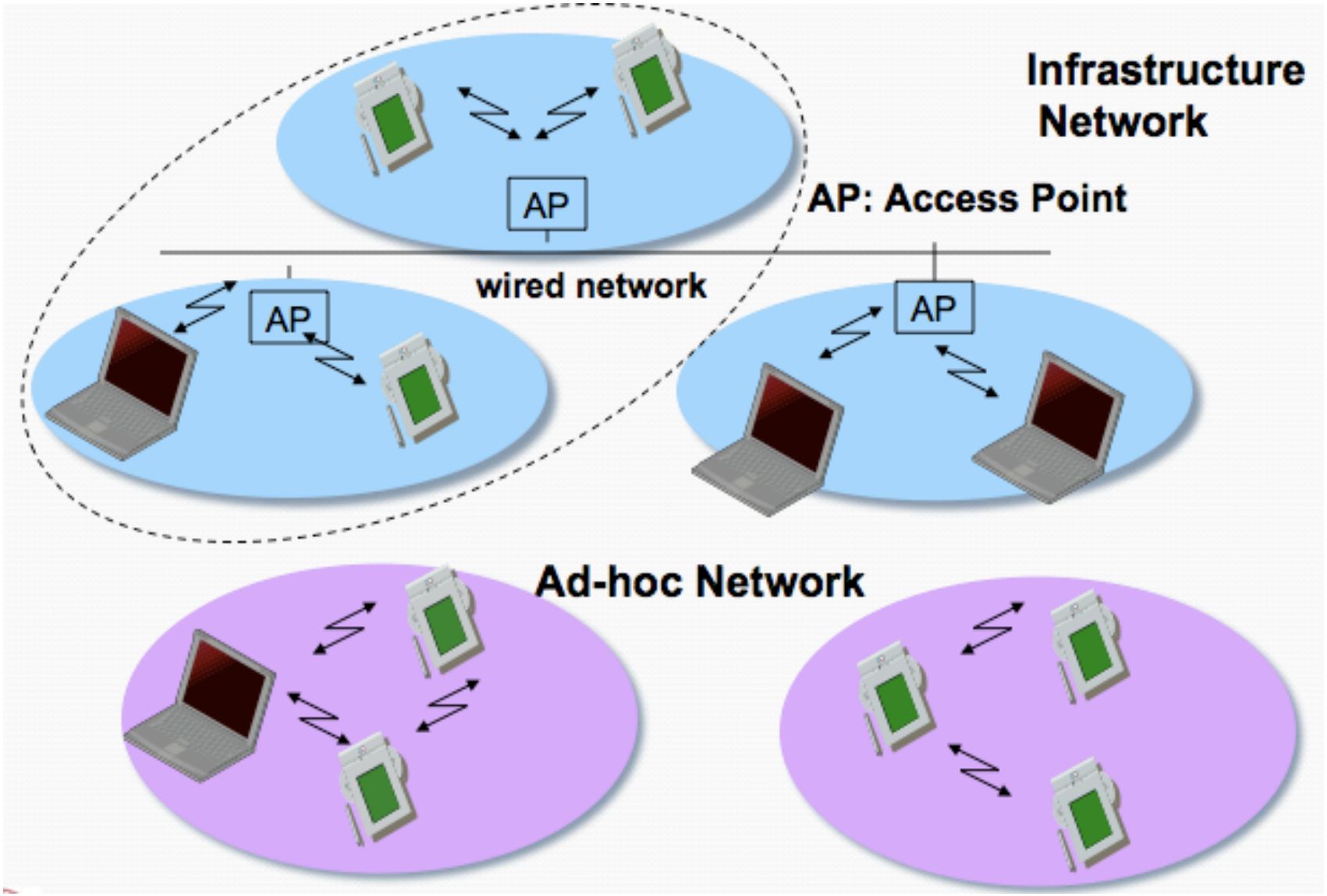
- The IEEE 802.11 and 802.11b standards can be used to provide communication between a number of PSs (Peer Stations) as an ad hoc network using peer to peer mode.

Wireless LAN: Network Architecture



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