

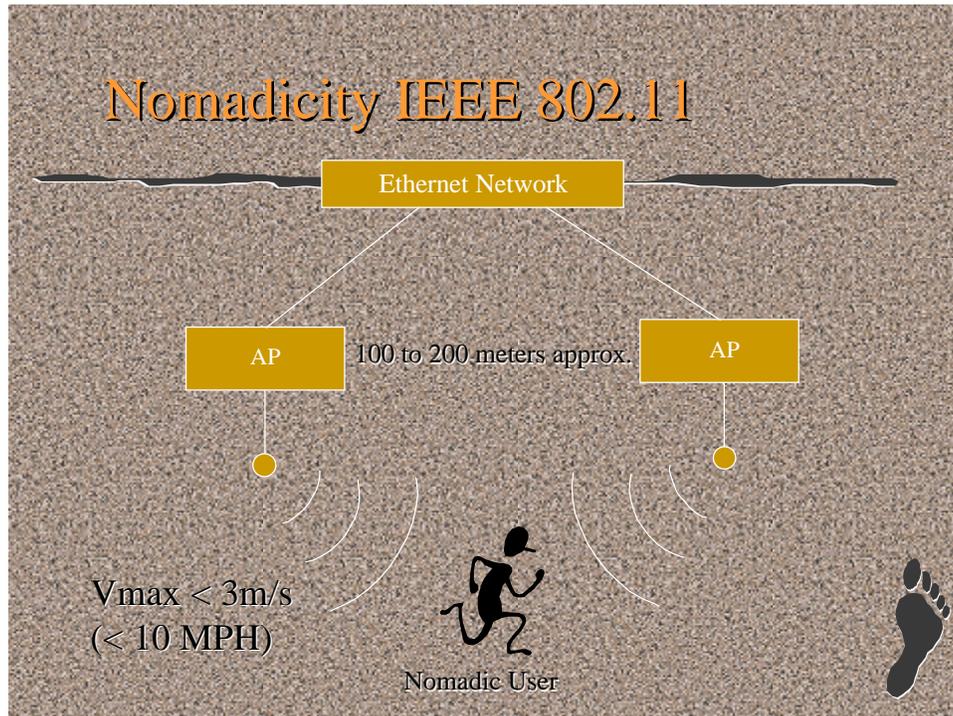
## Support for Nomadicity with IEEE 802.11

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## Wireless LAN Standards

- IEEE 802.11 Standard is currently being developed will be released end 1997. Will work in conjunction with standard Ethernet.
  - Spread Spectrum Direct Sequence
    - 1 And 2 MB/s Transfer Rate at 2.4 Ghz
  - Spread Spectrum Frequency Hopping
    - 1 And 2 MB/s Transfer Rate at 2.4 Ghz
  - Infrared





## Services of 802.11

- MAC Data Services
  - Error control
  - Link encryption
- MAC Management Services
  - Explicit authentication
  - Distributed association
  - Distributed discovery
  - Change notification
  - Power management

## MAC Data Services

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- Error control
  - Retry failed transmissions in the MAC
  - Direct acknowledgment of receipt
  - Duplicate frame detection and removal
- Link encryption
  - RC4 encryption algorithm with 40-bit key and 24-bit IV



## MAC Management Services

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- Explicit authentication
  - Authentication required prior to being able to access data services
  - Two mechanisms currently provided
    - “Open System”, i.e., none
    - “Shared Key”
  - Extendible to additional mechanisms



## MAC Management Services

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- Distributed association
  - Mobile station requests association
  - Includes capability and rate information and location of last association



## MAC Management Services

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- Distributed discovery
  - Two mechanisms provided
    - Passive scanning
    - Active scanning
  - Information is acquired that allows other stations to be found in time-frequency space



## MAC Management Services

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- Change notification
  - Service indications are provided when
    - losing an association
    - establishing an association
    - failing to establish an association



## MAC Management Services

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- Power management
  - Stations operate in either Active or Power Saving modes
    - Active mode: receiver is always on
    - Power Saving mode: receiver may be turned off for arbitrary lengths of time
  - Stations buffer traffic for other stations in Power Saving mode

