Broadband Wireless Mobile Air Interface

Call for Interest Session
March 12, 2002
Agenda

- Overview Presentation on Broadband Mobile Wireless Networking
- Q & A on Presentation and Tutorial
- Discussion on the proposal to form an Executive Committee Study Group
- Preparation of an Exec Committee presentation and ECSG motion
- Closure of Session
<table>
<thead>
<tr>
<th>Step</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish ECSG</td>
<td>Start</td>
</tr>
<tr>
<td>Obtain PAR</td>
<td>3-6 mo.</td>
</tr>
<tr>
<td>Establish new Working Group</td>
<td>6 mo.</td>
</tr>
<tr>
<td>Prepare draft standard</td>
<td>12 mo.</td>
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<tr>
<td>WG ballot</td>
<td>15 mo.</td>
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<tr>
<td>Sponsor ballot</td>
<td>21 mo.</td>
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<tr>
<td>Standards Board Approval</td>
<td>24 mo.</td>
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Proposal for Executive Committee
Study Group
Air Interface for Mobile Broadband Access Network

- Scope: Fast Hopped OFDM Wireless Access Network Operating in the 450 Mhz to 3 Ghz Licensed Frequency Bands and Supporting Vehicular Mobility (Speeds to 200 mph)
- Purpose: To enable rapid worldwide deployment and evolution of ubiquitous, cost-effective, interoperable, multi-vendor and multi-operator broadband mobile wireless IP data access networks.
5 Criteria for PARs

- Broad market potential
- Compatibility
  - Coexistence (not in 5 criteria yet, but coming)
- Distinct Identity
- Technical Feasibility
- Economic Feasibility
Broad Market Potential

- Broadband wireless access, based on IP mobility, unlocks all Internet content to the general public, potential market is all Internet users.
- Business has become increasingly mobile and access to corporate Intranets is required from any place at any time. 802/IP based networks provide access to all applications designed to be networked via TCP/IP.
- Additional Applications:
  - Gaming
  - Entertainment
  - Telematics
Distinct Identity

- IEEE 802 presently has no project that supports vehicular mobility (Speeds greater than 5 mph and less than 200 mph).
- IEEE 802.11 supports wireless connectivity with mobility in a LAN environment.
- IEEE 802.16 supports fixed access to the WAN.
- The specification produced by this project will support mobile wireless MAN access at vehicular speed.
Technical Feasibility

- The proposed solution relies on IP and OFDM technologies. These technologies are mature and have been used in both LAN and Fixed Wireless applications with success.
- Silicon (ASIC) technologies available.
- Complexity within scope of current technologies
Economic Feasibility

- Well known cost factors
- Reduced system cost by leveraging existing IP Core Network.
### IEEE 802 Wireless WG's

<table>
<thead>
<tr>
<th></th>
<th>802.11</th>
<th>802.15</th>
<th>802.16</th>
<th>802.XY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Spectrum</strong></td>
<td>Unlicensed</td>
<td>Unlicensed</td>
<td>Licensed Unlicensed</td>
<td>Licensed</td>
</tr>
<tr>
<td><strong>Freq. Bands</strong></td>
<td>2 Ghz</td>
<td>Various depending on application</td>
<td>10-66 Ghz 2-11 Ghz</td>
<td>450 Mhz – 3Ghz</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>Local Area</td>
<td>Personal Space</td>
<td>Metropolitan Area Access</td>
<td>Metropolitan Area Access</td>
</tr>
<tr>
<td><strong>Mobility Support</strong></td>
<td>Portability Local Roaming</td>
<td>Personal Space Connector Avoidance</td>
<td>Fixed</td>
<td>Vehicular Speed Mobility Inter-Metro Roaming</td>
</tr>
<tr>
<td><strong>Station Power</strong></td>
<td>Battery</td>
<td>Battery</td>
<td>Mains</td>
<td>Battery</td>
</tr>
<tr>
<td><strong>LOS/NLOS</strong></td>
<td>NLOS</td>
<td>NLOS</td>
<td>LOS (10-66 Ghz) NLOS (2-11 Ghz)</td>
<td>NLOS</td>
</tr>
</tbody>
</table>
Proposed Next Step

- Presentation to Executive Committee based on content of previous slides, requesting creation of an Executive Committee Study Group to:
  - Develop PAR
  - Complete “Five Criteria”
for the formation of a new working group to develop a Broadband Mobile Wireless Access Network standard.