| Project | IEEE 802.20 Working Group on Mobile Broadband Wireless Access  
http://grouper.ieee.org/groups/820/20 |
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<tr>
<td>Title</td>
<td>Evaluation criteria: The Segment Approach</td>
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<td>Date Submitted</td>
<td>2003-07-17</td>
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| Source(s) | Marianna Goldhammer  
Tel Aviv, HaBarzel 21  
Israel  
Voice: +972 3 645 6241  
Fax:  
Email: marianna.goldhammer@alvarion.com |
| Re: | MBWA Call for Contributions 802.20-03/09 |
| Abstract | |
| Purpose | The scope of this contribution is to improve the 802.20 Requirement document, Ver. 3. |
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Evaluation criteria: The Segment Approach

Marianna Goldhammer
Alvarion
System Model

User Traffic

802.20 Standard Scope

Data / Control Plane

MAC SAP
Service Specific Convergence Sublayer (CS)
MAC SAP
MAC Common Part Sublayer (MAC CPS)
Security Sublayer
CS PHY
Physical Layer (PHY)
RADIO SAP
RADIO (Channel + Deployment)

Management Plane

Management Entity
Service Specific Convergence Sublayers

Management Entity
MAC Common Part Sublayer

Management Entity
Security Sublayer

Management Entity
PHY Layer
Communication Model

[Diagram showing components of a communication model with nodes for Application Server, User Interface, BS, MT, and Radio Channel connected by lines.]
Elements

- Application Server
- User Interface
- Radio Channel

- MAC SAP
  - Service Specific Convergence Sublayer (CS)
  - MAC Common Part Sublayer (MAC CPS)

- MAC

- PHY
  - Physical Layer (PHY)
  - RADIO SAP

- CS SAP
  - Service Specific Convergence Sublayer (CS)
  - MAC Common Part Sublayer (MAC CPS)

- CS PHY
  - Physical Layer (PHY)
  - RADIO SAP
Traffic Models Scope

- Check traffic performance (capacity, delay)
Channel Model Scope

- Check PHY performance (cell size, multipath resistance, speed degradation)
Payload Model Scope

- Check PHY+MAC aggregate capacity and delay performance
## Simulation Scope

<table>
<thead>
<tr>
<th>Application</th>
<th>MAC</th>
<th>PHY</th>
<th>Radio Channel</th>
<th>PHY</th>
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<td>Traffic Model</td>
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<tr>
<th>Downlink</th>
<th>Uplink</th>
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- Traffic Model
- Channel Model
- Payload Model
Conclusion

• Complete end-to-end performance simulation is too complicated

• A segmented approach is needed
  – PHY only
    • Channel model
  – MAC only
    • Traffic model
  – MAC + PHY
    • Payload model