The requirements shall conform to the PAR. If not, the PAR needs to be modified.

Suggested Remedy
These requirements are consistent shall comply with the PAR...

Proposed Resolution
Recommendation: Accepted
Recommendation by: Klerer

Reason for Recommendation
Resolution of Group: Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

Comment # 98 Comment by: Doug Knisely
Comment Type Technical, Non-binding Page 5 Line 4 Fig/Table# Section 1.1
The requirements shall conform to the PAR. If not, the PAR needs to be modified.

Suggested Remedy
These requirements are consistent shall comply with the PAR...

Proposed Resolution
Recommendation: Accepted
Recommendation by: Joanne Wilson

Reason for Recommendation
Improvement in the text since the PAR requirements are mandatory.
Resolution of Group: Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
The sentence beginning with "This document...." is not clear in defining the scope. It confuses the Standard with the System.

Suggested Remedy

Replace this sentence with "This document provides/defines the specification of physical and medium access control layers of an air interface for interoperable mobile broadband wireless access (MBWA) systems, operating in licentised bands below 3.5 GHz, optimized for IP-data transport."

Proposed Resolution Recommendation: Rejected Recommendation by Joanne Wilson maintain as is

Reason for Recommendation

The suggested remedy is incorrect. This document provides the requirements of the 802.20 MAC/PHY and not the specification of the physical and medium access control layers....

Resolution of Group Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

This document does not specify detailed requirements (whatever those are).

Suggested Remedy

Change "detailed" to "functional".

Proposed Resolution Recommendation: Accepted Recommendation by Klerer

Reason for Recommendation

Resolution of Group Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
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<th>Fig/Table#</th>
<th>Section</th>
<th>Reason for Recommendation</th>
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<tbody>
<tr>
<td>Comment</td>
<td>Doug Knisely</td>
<td>Grammar and clarify what &quot;layer&quot; system is being used.</td>
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<td>change &quot;layer&quot; to &quot;ISO/OSI layers&quot;</td>
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<th>Line</th>
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<tr>
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<td></td>
<td>Change &quot;detailed&quot; to &quot;functional&quot;.</td>
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<td>Recommendation by</td>
<td>Joanne Wilson</td>
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</table>

Resolution of Group | Decision of Group: |
Reason for Group's Decision/Resolution |
Group's Notes |
Group's Action Items |
Grammar and clarify what "layer" system is being used.

Suggested Remedy
change "layer" to "ISO/OSI layers"

Proposed Resolution
Recommendation: **Accepted**
Recommendation by: Joanne Wilson

**Reason for Recommendation**
accurate and probably useful addition

**Group's Notes**

---

**Comment # 71**

**Comment by:**

**Comment Type** Technical, Binding
**Page** ?
**Line** 6
**Fig/Table#**
**Section** 1.3

**Suggested Remedy**

**Proposed Resolution**
Recommendation: **Rejected**
Recommendation by: Naquiib, Sutivong, Tomcik

**Reason for Recommendation**

Reject the comment...

Table 1-1 is included for information only. See examination in first paragraph of section 1.3. (specifically lines 22-23 of page 5). We suggest keeping the requirement for spectral efficiency high, however so as to achieve the best possible standard. Spectral efficiency of 1 b/s/Hz/sector can be achieved with "existing" technologies today.
Suggested Remedy

Keep the desired minimum spectral efficiency figure of 1 b/s/Hz/sector; however, specify the conditions under which this spectral efficiency is to be attained.

Proposed Resolution

Recommendation: Accepted

Reason for Recommendation

Resolution of Group

Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

Comment # 162

Comment by: Eshwar Pittampalli

Comment Type: Technical, Binding

Page: 1 Line: 20 Fig/Table#: 1.3 Section: 1.3

Typo "bases" replace with "basis"

Proposed Resolution

Recommendation: Accepted

Reason for Recommendation

Resolution of Group

Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
1. Spectral Efficiency (page 6 - Table 1.1 and page 12 - Table 4.1): Table 1.1 states that the system should have sustained spectral efficiency of 1 b/s/Hz/cell whereas Table 4.1 states that the downlink spectral efficiency should be 2.0 b/s/Hz/sector at 3 kmph and 1.5 b/s/Hz/sector at 120 kmph. As for the uplink, Table 4.1 lowers these numbers to 1.0 and 0.75 b/s/Hz/sector respectively. These numbers have little meaning in the absence of the channel conditions under which the system is intended to achieve them. Even the specification of the speed of the mobile terminal does not fully characterize the channel conditions. (Additional parameters such as the number of multipaths, their relative strengths and delays, specular components, etc. would be needed for a complete specification of the channel conditions.)

Suggested Remedy
Keep the desired minimum spectral efficiency figure of 1 b/s/Hz/sector; however, specify the conditions under which this spectral efficiency is to be attained.

Proposed Resolution

Recommendation: Accepted
Recommendation by: Joanne Wilson

Reason for Recommendation
Consistent with the PAR

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

Comment # 162
Comment by: Eshwar Pittampalli

Comment # 71
Comment by: Hari Ganti

Comment Type Technical, Binding
Page Tech
Line 6
Fig/Table# Section 1.3

Typo "bases"

Suggested Remedy
replace with "basis"

Proposed Resolution

Recommendation: Accepted
Recommendation by: Joanne Wilson

Reason for Recommendation
editorial correction

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution

Group’s Notes

Group’s Action Items
Comment # 106  
Comment by:  

Suggested Remedy  

Proposed Resolution: **Accepted-Modified**  
Recommendation: **Accepted-Modified**  

**Remove "IP-based" from the first sentence.**

**Reason for Recommendation**
Agreed that this paragraph should be informative. Suggest removing explicit reference to IP-based, since other types of traffic, such as "ethernet" or a native voice service could be carried over the future technology.

**Resolution of Group**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**

---

Comment # 164  
Comment by:  

Suggested Remedy  

Proposed Resolution: **Accepted-Modified**  
Recommendation: **Accepted-Modified**  

**We need to standardize on a term. Should decide which one.**

**Reason for Recommendation**

**Resolution of Group**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**
<table>
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<th>Comment #</th>
<th>167</th>
<th>Comment by:</th>
<th>Naguib, Sutivong, Tomcik</th>
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<td><strong>Proposed Resolution</strong></td>
<td><strong>Naguib, Sutivong, Tomcik</strong></td>
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<td><strong>Recommendation by</strong></td>
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<tr>
<td>We should keep more specific text. We think &quot;shall support Voice over IP.&quot; is preferable.</td>
<td><strong>Rejected</strong></td>
<td><strong>Proposed Resolution</strong></td>
<td><strong>Naguib, Sutivong, Tomcik</strong></td>
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<tr>
<td>Suggested Remedy</td>
<td>Delete &quot;should&quot; on line 5</td>
<td><strong>Proposed Resolution</strong></td>
<td><strong>Klerer</strong></td>
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<td><strong>Recommendation by</strong></td>
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<tr>
<td>Sentence should not be normative; not testable at a minimum.</td>
<td><strong>Accepted-Modified</strong></td>
<td><strong>Proposed Resolution</strong></td>
<td><strong>Klerer</strong></td>
</tr>
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<td><strong>Recommendation by</strong></td>
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<tr>
<td>The sentence should then be &quot;The IEEE 802.20 standard forms the basis for ....&quot;</td>
<td><strong>Accepted-Modified</strong></td>
<td><strong>Proposed Resolution</strong></td>
<td><strong>Klerer</strong></td>
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</tr>
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<td><strong>Recommendation by</strong></td>
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</tbody>
</table>
The 802.20-based air-interface (AI) shall be optimized for high-speed IP-based wireless data services. The 802.20 based AI shall support compliant Mobile Terminal (MT) devices for mobile users, and shall enable improved performance relative to other systems targeted for wide-area mobile operation. The AI shall be designed to provide best-in-class performance attributes such as peak and sustained data rates and corresponding spectral efficiencies, capacity, latency, overall network complexity and quality-of-service management. Applications that require the user device to assume the role of a server, in a server-client model, may be supported as well.

Proposed Resolution: **Accepted**

Recommendation by: Klerer
Multiple names for "MT" A generic global comment.

Suggested Remedy
Replace "Mobile Terminal (MT)," "user device," "mobile device," "wireless MT," "mobile wide-area stations," and "CPE" with "Mobile Station"

Proposed Resolution
Use common terminology across document

Reason for Recommendation
i do not care what term we use as long as we use it consistently

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

Comment # 165 Comment by: Eshwar Pittampalli
Comment Type Technical, Binding Page 7 Line 8 Fig/Table# Section 2
The sentence beginning with "The 802.20..." is not clear.

Suggested Remedy
Replace with "The 802.20 AI shall support various vehicular mobility classes up to 250 km/h in a MAN environment and target spectral efficiencies, sustained data rates and number of active users that are significantly higher than achieved by the existing mobile systems."

Proposed Resolution
Accepted Recommendation by Klerer

Reason for Recommendation

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
Best in class "overall network complexity" -- the requirement is not clear.

Suggested Remedy
Please clarify what exactly is the requirement.

Proposed Resolution

Recommendation: Rejected

Reason for Recommendation
There is no explanation of the problem

Resolution of Group
Decision of Group:

Group's Notes

Group's Action Items

"air interface support to enable" not clear

Suggested Remedy
Replace it with "enablers to support"

Proposed Resolution

Recommendation: Accepted

Reason for Recommendation

Resolution of Group
Decision of Group:

Group's Notes

Group's Action Items
<table>
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<th>Comment #</th>
<th>Technical, Non-binding</th>
<th>Page 7</th>
<th>Line 5</th>
<th>Fig/Table#</th>
<th>Section 2</th>
</tr>
</thead>
</table>

**Sentence should not be normative; not testable at a minimum.**

**Suggested Remedy**

Delete "should" on line 5

**Proposed Resolution**

**Recommendation:** Accepted

**Reason for Recommendation**

agree with rational

**Resolution of Group**

Decision of Group:

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**
Entire paragraph should be informative, not normative. These are marketing statements and are untestable at a minimum. Also, statements like "shall be designed to provide best-in-class" would require a pedantic definition of what technologies define "class."

Claims that 802.20 is better than "other systems targeted for wide-area mobile operation" are un-meetable and unnecessarily inflammatory.

Suggested Remedy

The 802.20-based air-interface (AI) shall be is optimized for high-speed IP-based wireless data services. The 802.20 based AI shall supports compliant Mobile Terminal (MT) devices for mobile users, and shall enable improved performance relative to other systems targeted for wide-area mobile operation. The AI shall be is designed to provide best-in-class performance attributes such as peak and sustained data rates and corresponding spectral efficiencies, capacity, latency, overall network complexity and quality-of-service management. Applications that require the user device to assume the role of a server, in a server-client model, may can be supported as well.

Proposed Resolution

Rejection: Rejected

Reason for Recommendation

This statement is to provide the objectives or "high level" requirements of the 802.20 air interface, consistent with the scope and purpose presented in the PAR. The remainder of the document provides the functional (i.e. testable) requirements that should be consistent with this overarching statements. The proposed revision would be appropriate in the introduction of the 802.20 specification, but not in document establishing the requirements for what is yet to be developed.
Multiple names for "MT" A generic global comment.

Suggested Remedy
Replace "Mobile Terminal (MT)," "user device," "mobile device," "wireless MT," "mobile wide-area stations," and "CPE" with "Mobile Station"

Proposed Resolution

<table>
<thead>
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<tbody>
<tr>
<td>Recommendation by</td>
<td>Joanne Wilson</td>
</tr>
</tbody>
</table>

Reason for Recommendation
Improves consistency

Resolution of Group

<table>
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<tr>
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</tr>
</thead>
</table>

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

The sentence beginning with "The 802.20...)" is not clear.

Suggested Remedy
Replace with "The 802.20 AI shall support various vehicular mobility classes up to 250 km/h in a MAN environment and target spectral efficiencies, sustained data rates and number of active users that are significantly higher than achieved by the existing mobile systems."

Proposed Resolution

<table>
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<tbody>
<tr>
<td>Recommendation by</td>
<td>Joanne Wilson</td>
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</table>

Reason for Recommendation
The proposed text is from the PAR and already appears in the prior section.

Resolution of Group

<table>
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<tr>
<th>Decision of Group:</th>
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</table>

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
Best in class "overall network complexity" -- the requirement is not clear.

Please clarify what exactly is the requirement.

Proposed Resolution

Rejected

No remedy proposed. It is not clear what needs to be clarified in the current text.

Replace it with "enablers to support"

accepted-clarified

Replace the text in question with, "The MBWA 802.20 air interface shall support the provision of VoIP applications."

Clearer than either the existing text or that proposed in the comment
Add a reference to 3GPP2’s BCMCS Stage 1 document here as follows: "802.20 Broadcast/Multicast support shall meet all requirements as captured in http://www.3gpp2.com/Public_html/specs/S.R0030-A_v1.0_012004.pdf ."
Define "broadcast and multicast services".

**Suggested Remedy**

**Broadcast Service** - the ability to transmit a packet of information (e.g., an IP broadcast datagram) to all mobile terminals within an 802.20 system or a portion of an 802.20 system. Note that a particular mobile terminal may choose to receive or ignore individual information packets that are delivered via the broadcast service.

**Multicast Service** - the ability to transmit a packet of information (e.g., an IP multicast datagram) to a subset of all mobile terminals within an 802.20 system or a portion of an 802.20 system. The multicast target for a multicast information packet is identified by a multicast address. Each mobile terminal can choose to receive and deliver multicast information packets based on the desired multicast address(es).

**Proposed Resolution**

Recommendation: **Accepted**  
Recommendation by **Klerer**

**Reason for Recommendation**

**Resolution of Group**

**Decision of Group:**

**Reason for Group's Decision/Resolution**

**Group's Notes**

**Group's Action Items**

---

**Suggested Remedy**

Multicast authorization and security requirements need to be specified.

**Proposed Resolution**

Recommendation: **Accepted-Modified**  
Recommendation by **Klerer**

I believe instead of precluding from "receiving" it is probably precluding from "decoding". Promiscuous terminals can receive any address but may not be able to decode.
Add "The 802.20 system shall support the delivery of multicast traffic that is addressed using IPv4 and IPv6 broadcast and multicast addressing."

Proposed Resolution
Recommendation: Accepted
Recommendation by: Klerer

Resolution of Group: Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items

Add "The 802.20 system shall support interoperation with external networks that utilize IETF-specified broadcast/multicast routing protocols for both IPv4 and IPv6 (e.g., IGMP)."

Proposed Resolution
Recommendation: Accepted
Recommendation by: Klerer

Resolution of Group: Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items
Doug Knisely

Technical, Binding

Add "The 802.20 system shall provide the ability to efficiently identify when broadcast or multicast streams of information need to be transmitted from particular cells or sectors (i.e., when there are authorized mobile terminals present that are attempting to receive those information streams). The 802.20 system shall provide the ability to disable the transmission of broadcast or multicast streams of information in particular cells or sectors when those information streams are not needed (e.g., when there are no authorized mobile terminals present that are attempting to receive those information streams)."

Proposed Resolution

Recommendation: Accepted-Modified

Reason for Recommendation

OK except "dells" should be "cells"

Resolution of Group

Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group’s Action Items

Comment # 115

Comment by: Doug Knisely

Comment Type: Technical, Binding

Page 8, Line 14, Fig/Table#: 2.2

Broadcast/multicast service must be billable. While this is most likely an upper layer issue for the most part, MAC layer support is likely to be needed in order to support billing and accounting in an efficient manner.

Proposed Resolution

Recommendation: Accepted

Reason for Recommendation

Resolution of Group

Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
### Comment #226

**Comment by:** Ayman, Arak, Jim Naguib, Sutivong, Tomcik  
**Type:** Technical, Binding  
**Page:** 8  
**Line:** 13  
**Fig/Table:**  
**Section:** 2.2

The requirement as previously written allows broadcast via unicast. 802.20 Air Interface systems should support a more efficient broadcast mechanism. The addition of a spectral efficiency number seems to be an easy way to preclude broadcast by unicast.

### Proposed Resolution

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Recommendation by</th>
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</thead>
<tbody>
<tr>
<td>#1: Change to read: &quot;IEEE 802.20-based systems shall support broadcast and multicast services using mechanisms that make efficient use of spectrum and system resources. &quot;</td>
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</tr>
<tr>
<td>#2: Change to read: &quot;IEEE 802.20-based systems shall support broadcast and multicast services, and should use mechanisms that make efficient use of spectrum and system resources. &quot;</td>
<td></td>
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</tbody>
</table>

### Reason for Recommendation

- **Resolution of Group:**
- **Decision of Group:**
- **Reason for Group's Decision/Resolution:**
- **Group's Notes:**
  - Ad hoc - lead by Mark Klerer. Following are the notes:

### ISSI IFS

- **Group's Action Items**
Define "broadcast and multicast services".

Suggested Remedy

Broadcast Service - the ability to transmit a packet of information (e.g., an IP broadcast datagram) to all mobile terminals within an 802.20 system or a portion of an 802.20 system. Note that a particular mobile terminal may choose to receive or ignore individual information packets that are delivered via the broadcast service.

Multicast Service - the ability to transmit a packet of information (e.g., an IP multicast datagram) to a subset of all mobile terminals within an 802.20 system or a portion of an 802.20 system. The multicast target for a multicast information packet is identified by a multicast address. Each mobile terminal can choose to receive and deliver multicast information packets based on the desired multicast address(es).

Proposed Resolution

Use definitions from a referenced industry source. Add adopted definitions to the Appendix A - Definition of Terms and Concepts.

Reason for Recommendation

Definitions should be consistent with industry use and appropriately placed in the document
Multicast authorization and security requirements need to be specified.

Suggested Remedy
Add "The 802.20 system shall support the ability to restrict the delivery of multicast information to mobile terminals that are authorized to receive the multicast information. The 802.20 system shall support the ability to preclude mobile terminals from receiving multicast information for which the mobile terminals are not authorized to receive."

Proposed Resolution Recommendation: Rejected Recommendation by Joanne Wilson

Reason for Recommendation
More detail than required for this document. If we go down this path then we risk partially defining the feature at a lower level or defining it in a manner that unduly limits flexibility in how the feature is implemented.

Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

BCMC must support IETF IP broadcast and multicast traffic efficiently.

Suggested Remedy
Add "The 802.20 system shall support the delivery of multicast traffic that is addressed using IPv4 and IPv6 broadcast and multicast addressing."

Proposed Resolution Recommendation: Rejected Recommendation by Joanne Wilson

Reason for Recommendation
This provides more detail than what is needed in this document and we run the risk of partially defining the feature, defining it in a detailed but internally inconsistent manner, or unnecessarily limiting flexibility in how the feature is supported.

Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
802.20 systems should work effectively with broadcast/multicast backbone networks.

Suggested Remedy
Add "The 802.20 system shall support interoperation with external networks that utilize IETF-specified broadcast/multicast routing protocols for both IPv4 and IPv6 (e.g., IGMP)."

Proposed Resolution
Recommendation: Rejected
Recommendation by: Joanne Wilson

Reason for Recommendation
This proposed requirement is more detailed than necessary. We should let proponents propose how they would support this requirement and which protocols they support.

Resolution of Group
Decision of Group:

Group's Notes

Group's Action Items

Wireless broadcast/multicast services need the ability to turn particular streams of information in specific cells or sectors on a dynamic basis based on the presence of mobile terminals that desire and are authorized to receive the specific streams of information. Air interface support for these capabilities is essential.

Suggested Remedy
Add "The 802.20 system shall provide the ability to efficiently identify when broadcast or multicast streams of information need to be transmitted from particular cells or sectors (i.e., when there are authorized mobile terminals present that are attempting to receive those information streams). The 802.20 system shall provide the ability to disable the transmission of broadcast or multicast streams of information in particular cells or sectors when those information streams are not needed (e.g., when there are no authorized mobile terminals present that are attempting to receive those information streams)."

Proposed Resolution
Recommendation: Rejected
Recommendation by: Joanne Wilson

Reason for Recommendation
This is more detailed than needed for this section.
Broadcast/multicast service must be billable. While this is most likely an upper layer issue for the most part, MAC layer support is likely to be needed in order to support billing and accounting in an efficient manner.

Suggested Remedy
Add "The 802.20 system shall provide the ability to support the efficient gathering of accounting information consisting of which mobile terminals are receiving which broadcast/multicast information streams and when the terminals start and terminate the monitoring activities."

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<td>This is more detailed than what is needed in this section.</td>
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<td>Joanne Wilson</td>
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Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
The requirement as previously written allows broadcast via unicast. 802.20 Air Interface systems should support a more efficient broadcast mechanism. The addition of a spectral efficiency number seems to be an easy way to preclude broadcast by unicast.

Suggested Remedy
Change to read: "IEEE 802.20-based systems shall support broadcast and multicast services using mechanisms that make efficient use of system resources. The minimum spectral efficiency provided by an 802.20 system while providing broadcast shall be (TBD).

Proposed Resolution: **Rejected**

Reason for Recommendation
No need to limit the how proponents propose to support this feature. Also, there are too many arbitrary assumptions required to get to a spectral efficiency goal specifically for the broadcast service.

Resolution of Group: maintain current text

Reason for Group's Decision/Resolution

Group's Notes
Ad hoc - lead by Mark Klerer. Following are the notes:

**ISSUES**

Group's Action Items

802.20 systems should work effectively with broadcast/multicast backbone networks.

Suggested Remedy
Add "The 802.20 system shall support interoperation with external networks that utilize IETF-specified broadcast/multicast routing protocols for both IPv4 and IPv6 (e.g., IGMP)."

Proposed Resolution: **Accepted**

Reason for Recommendation

Resolution of Group: Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
The 802.20 AI shall support mobility up to 250 km/h.

Proposed Resolution

Change "must" to "shall".

This is descriptive text, if the system meets the requirements what it is/was designed to do is not relevant. The "shall" in the second sentence is ok.
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</table>
Delete "The 802.20 AI shall support high-speed mobility."

Alternatively, define speed requirements for mobility clearly.

Proposed Resolution Recommendation: **Rejected** Recommendation by Klerer

**Comment # 118**

**Comment by:** Doug Knisely

Not defined; untestable.

**Suggested Remedy**

Delete "The 802.20 AI shall support high-speed mobility."

Alternatively, define speed requirements for mobility clearly.

**Comment # 168**

**Comment by:** Eshwar Pittampalli

"support non-line of sight...." ambiguous

**Suggested Remedy**

Replace it with "support non-line of sight outdoor and indoor coverage areas."

Proposed Resolution Recommendation: **Accepted** Recommendation by Klerer

**Comment # 118**

**Comment by:** Doug Knisely

Not defined; untestable.

**Suggested Remedy**

Delete "The 802.20 AI shall support high-speed mobility."

Alternatively, define speed requirements for mobility clearly.

**Comment # 168**

**Comment by:** Eshwar Pittampalli

"support non-line of sight...." ambiguous

**Suggested Remedy**

Replace it with "support non-line of sight outdoor and indoor coverage areas."

**Comment # 118**

**Comment by:** Doug Knisely

Not defined; untestable.

**Suggested Remedy**

Delete "The 802.20 AI shall support high-speed mobility."

Alternatively, define speed requirements for mobility clearly.

**Comment # 168**

**Comment by:** Eshwar Pittampalli

"support non-line of sight...." ambiguous

**Suggested Remedy**

Replace it with "support non-line of sight outdoor and indoor coverage areas."

**Comment # 118**

**Comment by:** Doug Knisely

Not defined; untestable.

**Suggested Remedy**

Delete "The 802.20 AI shall support high-speed mobility."

Alternatively, define speed requirements for mobility clearly.

**Comment # 168**

**Comment by:** Eshwar Pittampalli

"support non-line of sight...." ambiguous

**Suggested Remedy**

Replace it with "support non-line of sight outdoor and indoor coverage areas."
Change "must" in lines 17, 18 to "shall"

Proposed Resolution: **Accepted-Modified**  
Recommendation by: Joanne Wilson

Change to, "The 802.20 systems must be **shall** support the designed **must** support non-line of sight outdoor to indoor scenarios and indoor coverage.

Reason for Recommendation

In the Overview of this document it states that, "For the purpose of this document, an "802.20 system" constitutes an 802.20 MAC and PHY implementation in which at least one Mobile station communicates with a base station via a radio air interface, and the interfaces to external networks, for the purpose of transporting IP packets through the MAC and PHY protocol layers." So, this requirement is actually that the 802.20 system must **shall** support mobile broadband wireless access.

Resolution of Group Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

Not testable; not a requirement.

Proposed Resolution: **Rejected**  
Recommendation by: Joanne Wilson

maintain as is

though this is not a testable performance requirement, it is an observable requirement on the design of the 802.20 air interface

Resolution of Group Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
Need to support non-bursty traffic as well. Bursty case is clearly covered by rest of sentence.

Delete "bursty ".

Proposed Resolution
Recommendation: Accepted
Reason for Recommendation
agree that bursty and non-bursty traffic needs to be supported

Resolution of Group
Decision of Group: Joanne Wilson

Not defined; untestable.

Delete "The 802.20 AI shall support high-speed mobility."

Alternatively, define speed requirements for mobility clearly.

Proposed Resolution
Recommendation: Accepted
Reason for Recommendation
Already covered in the PAR anyway.

Resolution of Group
Decision of Group: Joanne Wilson

Group’s Notes
Group’s Action Items
"support non-line of sight...." ambiguous

Suggested Remedy

Replace it with "support non-line of sight outdoor and indoor coverage areas."

Proposed Resolution Recommendation: Rejected
Recommendation by Joanne Wilson

Reason for Recommendation

The proposed text could be interpreted as the support of pico cells that could be deployed indoors to provide indoor coverage. The requirement is to be able to provide seamless coverage outdoors, moving from outdoors to indoors and indoors from the same macro-cell that is deployed outdoors. I believe the current text uses accepted industry terminology.

Resolution of Group Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

Comment # 122 Comment by:

Comment Type Technical, Non-binding Page 9 Line 16 Fig/Table# Section 3.1.1

Suggested Remedy

"Partitioning" is used here to stress that the border between MAC and PHY are well defined. However the way it is written gives the impression that this is the name of a particular model. Maybe we should suggest a rewording for the sentence that was stress the border between MAC and PHY

Proposed Resolution Recommendation: Accepted-Modified Recommendation by Naguib, Sutivong, Tomcik

Reason for Recommendation

Resolution of Group Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
Add "applicable" after "other". The changed text would be: "in conjunction with other applicable 802 standards..."

Proposed Resolution
Recommendation: Accepted
Recommendation by: Klerer

Individual optimization of each proposal is allowed. Sub-layering may be done at the option of the proponent. There should be no a priory requirement for commonality.

Proposed Resolution
Recommendation: Rejected
Recommendation by: Klerer
what is a "partitioning model?"

**Suggested Remedy**
Delete "partitioning"

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Informative and not testable.

**Suggested Remedy**

The 802.20 standard shall also addresses the needs of logical link control and how and when the 802.2 LLC functionality is used.

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</table>
1. Not a requirements; not testable.

2. We don't clarify (and the figure doesn't clarify much either, FWIW).

Suggested Remedy
change "shall clarify" to "specify"

Proposed Resolution Recommendation: Accepted-Modified Recommendation by Klerer
change to "shall specify". It is a meta-requirement on the specification to be produced.

Proposed Resolution Recommendation: Accepted Recommendation by Joanne Wilson
Add "applicable" after "other". The changed text would be: "in conjunction with other applicable 802 standards"
If more than one PHY technology is adopted for the 802.20 standard, the MAC layer shall be designed such that it consists of two parts: a common part and a PHY-specific part. To provide the best possible performance, the PHY-specific part of the MAC may be optimized for the specific characteristics of a particular PHY.

Proposed Resolution: Rejected

Reason for Recommendation:
The working group has not adopted a policy of developing a common MAC that supports multiple PHYs. No one has demonstrated that this provides any performance benefits and it undermines the ability to ensure interoperability between different 802.20 network implementations. Such an approach may be acceptable for fixed wireless access systems, but it undermines the ability of mobile terminal devices to roam between different 802.20 compliant mobile systems.

Resolution of Group: Decision of Group:

Reason for Group's Decision/Resolution:

Group’s Action Items:

Proposed Resolution: Accepted

Reason for Recommendation:
It doesn't matter. Obviously, a "partitioning model" divides (or partitions) the functionality to various layers. But, either wording is okay.

Resolution of Group: Decision of Group:

Reason for Group’s Decision/Resolution:

Group’s Notes:

Group’s Action Items:
The 802.20 standard shall also address the needs of logical link control and how and when the 802.2 LLC functionality is used.

Proposed Resolution: **Rejected**

**Suggested Remedy**

Though this is not a testable performance requirement, it is a requirement on the structure of the design and it is observable.

**Proposed Resolution**

- **Change to** "will specify"  
- **Reason for Recommendation**
  should be written in future tense to be consistent with the rest of the document

**Comment # 123**  
**Comment by:** Doug Knisely

**Comment**  
Informative and not testable.

**Suggested Remedy**

The 802.20 standard shall also address the needs of logical link control and how and when the 802.2 LLC functionality is used.

**Proposed Resolution**

- **Maintain current text**

**Reason for Recommendation**

Though this is not a testable performance requirement, it is a requirement on the structure of the design and it is observable.

**Comment # 124**  
**Comment by:** Doug Knisely

**Comment**  
1. Not a requirements; not testable.

2. We don't clarify (and the figure doesn't clarify much either, FWIW).

**Suggested Remedy**

- **Change "shall clarify" to "specify"**

**Proposed Resolution**

- **Accepted-Modified**

**Reason for Recommendation**

should be written in future tense to be consistent with the rest of the document
This section and numbers has been reviewed and voted by the working group. Suggest not to touch the text at this time!

This text has been reviewed and voted by the working group. Suggest not to change the text at this time.
This is a duplicate. See comment 1 submitted by Todd Chauvin. Same discussion.
Table 4-1 contains values that have been debated and approved by the working group. For the technology to be significantly better than available, it is necessary to let the previous stand. Do not change the text, since it has been discussed and voted by the WG.

Proposed Resolution

Reason for Recommendation
Text has been debated and approved by the WG.

Resolution of Group
Decision of Group:

Group’s Action Items

Evaluation criteria could be used to define graceful degradation. Add a reference to Evaluation Criteria Document for further definition.

Proposed Resolution

Reason for Recommendation

Resolution of Group
Decision of Group:

Group’s Action Items
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<th>Comment #</th>
<th>266</th>
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**Suggested Remedy**

**Proposed Resolution**

**Recommendation:** Rejected

**Recommendation by:** Naguib, Sutivong, Tomcik

The section and text have been reviewed and voted by the working group. Suggest not to change the text at this time.

**Reason for Recommendation**

Text has been debated, and approved by the WG.

**Resolution of Group**

**Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**

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**Suggested Remedy**

**Proposed Resolution**

**Recommendation:** Rejected-Duplicate

**Recommendation by:** Naguib, Sutivong, Tomcik

**Reason for Recommendation**

**Resolution of Group**

**Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**

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Cell size is constrained as stated in section 3.1, i.e., Macro, micro and pico-cells. To ensure the proposals are not only designed for very small cells, the "Range" performance which can be computed in the link budget, can be used as a performance metric as discussed in the earlier evaluation criteria CG meetings. Spectral efficiency requirement has already been reduced to a lower value for 120 km in SRD Ver. 13.
This requirement specifies stringent spectral efficiencies without explicitly clarifying the conditions under which it should be achieved. For example, because cell size is not constrained by the requirements, the spectral efficiencies could be achieved with very small cells. Or, for example, operation at 120km/hr is very different depending on the environment - certainly we are not interested in operation at 120km/hr in an urban setting, yet the requirement could be interpreted that it is applicable under all channel conditions. The separation of downlink versus uplink spectral efficiency unnecessarily compiles the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Specify 2 bits/sec/Hz/sector as the spectral efficiency and allow the evaluation criteria to determine the conditions under which this is achieved.

Proposed Resolution: Rejected
Recommendation by: Klerer

See my comment on this section that recommends we stay with the PAR value of 1 bits/sec/Hz/sector

Reason for Recommendation
See my original comment
The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy
Remove the distinction between uplink and downlink.

Proposed Resolution

Recommendation: Accepted
Recommendation by Klerer

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

This requirement specifies stringent spectral efficiencies without explicitly clarifying the conditions under which it should be achieved. For example, because cell size is not constrained by the requirements, the spectral efficiencies could be achieved with very small cells. Or, for example, operation at 120km/hr is very different depending on the environment - certainly we are not interested in operation at 120km/hr in an urban setting, yet the requirement could be interpreted that it is applicable under all channel conditions. The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy
Specify 2 bits/sec/Hz/sector as the spectral efficiency and allow the evaluation criteria to determine the conditions under which this is achieved.

Proposed Resolution

Recommendation: Rejected
Recommendation by Klerer

See reply comment 1
The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy
Remove the distinction between uplink and downlink.

Proposed Resolution
Recommendation: Accepted-Duplicate
Recommendation by: Klerer

This requirement specifies stringent spectral efficiencies without explicitly clarifying the conditions under which it should be achieved. For example, because cell size is not constrained by the requirements, the spectral efficiencies could be achieved with very small cells. Or, for example, operation at 120km/hr is very different depending on the environment - certainly we are not interested in operation at 120km/hr in an urban setting, yet the requirement could be interpreted that it is applicable under all channel conditions. The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy
Specify 2 bits/sec/Hz/sector as the spectral efficiency and allow the evaluation criteria to determine the conditions under which this is achieved.

Proposed Resolution
Recommendation: Rejected-Duplicate
Recommendation by: Klerer

See reply to initial comment.
Remove the distinction between uplink and downlink.

Proposed Resolution: **Accepted-Duplicate**

Comment # Comment by: Marc Goldburg

**Resolution of Group**

Decision of Group:

**Reason for Recommendation**

**Proposed Resolution**

Recommendation by

**Proposed Resolution**

Recommendation by

**Reason for Recommendation**

**Resolution of Group**

Decision of Group:

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**

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Delete "The spectral efficiency at higher speeds than those shown should degrade gracefully."

Alternatively define graceful degradation (but I don't think this is necessary or readily doable).

Proposed Resolution: **Rejected**

**Reason for Recommendation**

**Resolution of Group**

Decision of Group:

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**
"should" implies a required feature which is not true.

Suggested Remedy
Replace "should" with "may"

Proposed Resolution
Recommendation: Rejected

I believe it is a "required" feature

Resolution of Group
Decision of Group:

Reason for Recommendation

This requirement specifies stringent spectral efficiencies without explicitly clarifying the conditions under which it should be achieved. For example, because cell size is not constrained by the requirements, the spectral efficiencies could be achieved with very small cells. Or, for example, operation at 120km/hr is very different depending on the environment - certainly we are not interested in operation at 120km/hr in an urban setting, yet the requirement could be interpreted that it is applicable under all channel conditions. The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy
Specify 2 bits/sec/Hz as the spectral efficiency and allow the evaluation criteria to determine the conditions under which this is achieved.
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<td>The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.</td>
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</table>

**Suggested Remedy**
Remove the distinction between uplink and downlink.

**Proposed Resolution**
Recommendation: Accepted
Recommendation by: Klerer

**Resolution of Group**
Decision of Group:

<table>
<thead>
<tr>
<th>Comment #</th>
<th>276</th>
<th>Comment by:</th>
<th>Michael Youssefmir</th>
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<tr>
<td>Comment</td>
<td>Technical, Binding</td>
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**Suggested Remedy**
Specify 2 bits/sec/Hz as the spectral efficiency and allow the evaluation criteria to determine the conditions under which this is achieved.

**Proposed Resolution**
Recommendation: Rejected-Duplicate
Recommendation by: Klerer

**Resolution of Group**
Decision of Group:
The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy

Remove the distinction between uplink and downlink.

Proposed Resolution

Recommendation: Accepted-Duplicate
Recommendation by: Klerer

Resolution of Group

Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

This requirement specifies stringent spectral efficiencies without explicitly clarifying the conditions under which it should be achieved. For example, because cell size is not constrained by the requirements, the spectral efficiencies could be achieved with very small cells. Or, for example, operation at 120km/hr is very different depending on the environment - certainly we are not interested in operation at 120km/hr in an urban setting, yet the requirement could be interpreted that it is applicable under all channel conditions. The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy

Specify 2 bits/sec/Hz/sector as the spectral efficiency and allow the evaluation criteria to determine the conditions under which this is achieved.

Proposed Resolution

Recommendation: Accepted
Recommendation by: Joanne Wilson, Mike Youssefmir

Resolution of Group

Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

**Suggested Remedy**

Remove the distinction between uplink and downlink.

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This requirement specifies stringent spectral efficiencies without explicitly clarifying the conditions under which it should be achieved. For example, because cell size is not constrained by the requirements, the spectral efficiencies could be achieved with very small cells. Or, for example, operation at 120km/hr is very different depending on the environment - certainly we are not interested in operation at 120km/hr in an urban setting, yet the requirement could be interpreted that it is applicable under all channel conditions. The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

**Suggested Remedy**

Specify 2 bits/sec/Hz/sector as the spectral efficiency and allow the evaluation criteria to determine the conditions under which this is achieved.

---

**Proposed Resolution**

**Recommendation:** Accepted

**Recommendation by:** Joanne Wilson, Mlke Youssefmir
The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy
Remove the distinction between uplink and downlink.

Proposed Resolution
Recommendation: Accepted-Duplicate
Recommendation by: Joanne Wilson, Mike Youssefmir

Reason for Recommendation
Resolution of Group: Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

This requirement specifies stringent spectral efficiencies without explicitly clarifying the conditions under which it should be achieved. For example, because cell size is not constrained by the requirements, the spectral efficiencies could be achieved with very small cells. Or, for example, operation at 120km/hr is very different depending on the environment - certainly we are not interested in operation at 120km/hr in an urban setting, yet the requirement could be interpreted that it is applicable under all channel conditions. The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy
Specify 2 bits/sec/Hz/sector as the spectral efficiency and allow the evaluation criteria to determine the conditions under which this is achieved.

Proposed Resolution
Recommendation: Accepted-Duplicate
Recommendation by: Joanne Wilson, Mike Youssefmir

Reason for Recommendation
Resolution of Group: Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy
Remove the distinction between uplink and downlink.

Proposed Resolution
Recommendation: Accepted-Duplicate
Recommendation by Joanne Wilson, Mike Youssefmir

Resolution of Group
Decision of Group:
Reason for Group's Decision/Resolution
Group’s Notes
Group’s Action Items

Table 4.1 specifies a downlink spectral efficiency of 2.0 b/s/Hz/sector at 3 kmph and 1.5 b/s/Hz/sector at 120 kmph and uplink spectral efficiencies of 1.0 and 0.75 b/s/Hz/sector respectively. It is the intent to specify spectral efficiencies that are achievable in actual deployment in the timeframe of the PARs effectiveness. For full mobility and small form-factor portable devices I do not believe that these targets are realistic. Operators are making commitments to deploy systems in the timeframe of the 802.20 PAR that have performance that is significantly lower than the 1 b/s/Hz/sector specified in the PAR.

In light of the deployment evidence, there have been no convincing arguments that prove that systems meeting the PAR targets are not needed. Furthermore the process of developing the specification will assure that submitters provide their best possible designs in order to gain WG acceptance of their proposal.

Suggested Remedy
Make Table 4-1 consistent with the PAR and specify a downlink spectral efficiency of 1 b/s/Hz/sector .

Proposed Resolution
Recommendation: Accepted
Recommendation by Joanne Wilson

Resolution of Group
Decision of Group:
Reason for Group's Decision/Resolution
Group’s Notes
Group’s Action Items
Delete "The spectral efficiency at higher speeds than those shown should degrade gracefully."

Alternatively define graceful degradation (but I don't think this is necessary or readily doable).

Proposed Resolution

Recommendation: **Rejected**  Recommendation by: Joanne Wilson

Reason for Recommendation

By deleting this text it could be interpreted that the spectral efficiency will remain constant at higher speeds. Obviously, this is not the case and should not be implied. I don't think it's necessary to define "degrade gracefully." We can see how the various proposals will perform through the evaluation process and should therefore be able to predict how the ultimate 802.20 standard will perform. In any case, the spectral efficiency is likely to degrade in some manner at higher speeds.

"should" implies a required feature which is not true.

Proposed Resolution

Recommendation: **Accepted**  Recommendation by: Joanne Wilson

Reason for Recommendation

Should actually implies are desired but non-mandatory feature. In this case, "may" is better because this described allowed though certainly not desired performance.
This requirement specifies stringent spectral efficiencies without explicitly clarifying the conditions under which it should be achieved. For example, because cell size is not constrained by the requirements, the spectral efficiencies could be achieved with very small cells. Or, for example, operation at 120km/hr is very different depending on the environment - certainly we are not interested in operation at 120km/hr in an urban setting, yet the requirement could be interpreted that it is applicable under all channel conditions. The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy
Specify 2 bits/sec/Hz as the spectral efficiency and allow the evaluation criteria to determine the conditions under which this is achieved.

Proposed Resolution

Recommendation: **Accepted-Duplicate**
Recommendation by: Mike Youssefmir

The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy

Remove the distinction between uplink and downlink.
This requirement specifies stringent spectral efficiencies without explicitly clarifying the conditions under which it should be achieved. For example, because cell size is not constrained by the requirements, the spectral efficiencies could be achieved with very small cells. Or, for example, operation at 120km/hr is very different depending on the environment - certainly we are not interested in operation at 120km/hr in an urban setting, yet the requirement could be interpreted that it is applicable under all channel conditions. The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy
Specify 2 bits/sec/Hz as the spectral efficiency and allow the evaluation criteria to determine the conditions under which this is achieved.

Proposed Resolution
Recommendation: Accepted-Duplicate
Recommendation by: Joanne Wilson

Reason for Recommendation
the spectral efficiency requirement is ill-defined and overly stringent

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy
Remove the distinction between uplink and downlink.

Proposed Resolution
Recommendation: Accepted-Duplicate
Recommendation by: Joanne Wilson

Reason for Recommendation
agree

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
This requirement specifies stringent spectral efficiencies without explicitly clarifying the conditions under which it should be achieved. For example, because cell size is not constrained by the requirements, the spectral efficiencies could be achieved with very small cells. Or, for example, operation at 120km/hr is very different depending on the environment - certainly we are not interested in operation at 120km/hr in an urban setting, yet the requirement could be interpreted that it is applicable under all channel conditions. The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

** Proposed Resolution **

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<td>1</td>
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<td>Technical, Binding</td>
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<td>5</td>
<td>4.1.1</td>
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</table>

** Suggested Remedy **

Specify 2 bits/sec/Hz/sector as the spectral efficiency and allow the evaluation criteria to determine the conditions under which this is achieved.

** Proposed Resolution **

- ** Recommendation:** Accepted  
- ** Recommendation by:** Lalit Kotecha

** Reason for Recommendation **

** Resolution of Group **

** Decision of Group: **

** Reason for Group’s Decision/Resolution **

** Group’s Notes **

** Group’s Action Items **

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** Proposed Resolution **

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</table>

** Suggested Remedy **

Remove the distinction between uplink and downlink.

** Proposed Resolution **

- ** Recommendation:** Rejected  
- ** Recommendation by:** Lalit Kotecha

** Reason for Recommendation **

** Resolution of Group **

** Decision of Group: **

** Reason for Group’s Decision/Resolution **

** Group’s Notes **

** Group’s Action Items **
This requirement specifies stringent spectral efficiencies without explicitly clarifying the conditions under which it should be achieved. For example, because cell size is not constrained by the requirements, the spectral efficiencies could be achieved with very small cells. Or, for example, operation at 120km/hr is very different depending on the environment - certainly we are not interested in operation at 120km/hr in an urban setting, yet the requirement could be interpreted that it is applicable under all channel conditions. The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy
Specify 2 bits/sec/Hz/sector as the spectral efficiency and allow the evaluation criteria to determine the conditions under which this is achieved.

Proposed Resolution
Acceptance: Accepted-Duplicate

#1 supercedes this comment

Reason for Recommendation

Resolution of Group: Decision of Group:

Reason for Group's Decision/Resolution:

Group's Notes

Group's Action Items

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The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy
Remove the distinction between uplink and downlink.

Proposed Resolution
Acceptance: Rejected-Duplicate

#2

Reason for Recommendation

Resolution of Group: Decision of Group:

Reason for Group's Decision/Resolution:

Group's Notes

Group's Action Items
This requirement specifies stringent spectral efficiencies without explicitly clarifying the conditions under which it should be achieved. For example, because cell size is not constrained by the requirements, the spectral efficiencies could be achieved with very small cells. Or, for example, operation at 120km/hr is very different depending on the environment - certainly we are not interested in operation at 120km/hr in an urban setting, yet the requirement could be interpreted that it is applicable under all channel conditions. The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy
Specify 2 bits/sec/Hz/sector as the spectral efficiency and allow the evaluation criteria to determine the conditions under which this is achieved.

Proposed Resolution
Recommendation: Accepted-Duplicate
Recommendation by Lalit Kotecha

Comment #1
Reason for Recommendation
Resolution of Group
Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy
Remove the distinction between uplink and downlink.

Proposed Resolution
Recommendation: Rejected-Duplicate
Recommendation by Lalit Kotecha

Comment #2
Reason for Recommendation
Resolution of Group
Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
Delete "The spectral efficiency at higher speeds than those shown should degrade gracefully."

Alternatively define graceful degradation (but I don't think this is necessary or readily doable).

Proposed Resolution Recommendation: Accepted
Recommendation by Lalit Kotecha

Comment #266 Comment by: Joanne Wilson

This requirement specifies stringent spectral efficiencies without explicitly clarifying the conditions under which it should be achieved. For example, because cell size is not constrained by the requirements, the spectral efficiencies could be achieved with very small cells. Or, for example, operation at 120km/hr is very different depending on the environment - certainly we are not interested in operation at 120km/hr in an urban setting, yet the requirement could be interpreted that it is applicable under all channel conditions. The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Specify 2 bits/sec/Hz as the spectral efficiency and allow the evaluation criteria to determine the conditions under which this is achieved.

Proposed Resolution Recommendation: Accepted-Duplicate
Recommendation by Lalit Kotecha

Comment #1

Reason for Recommendation
Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

**Suggested Remedy**

Remove the distinction between uplink and downlink.

**Proposed Resolution**

Recommendation: **Rejected-Duplicate**  
Recommendation by Lalit Kotecha

Comment #2

**Resolution of Group**

Decision of Group:

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**

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This requirement specifies stringent spectral efficiencies without explicitly clarifying the conditions under which it should be achieved. For example, because cell size is not constrained by the requirements, the spectral efficiencies could be achieved with very small cells. Or, for example, operation at 120km/hr is very different depending on the environment - certainly we are not interested in operation at 120km/hr in an urban setting, yet the requirement could be interpreted that it is applicable under all channel conditions. The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

**Suggested Remedy**

Specify 2 bits/sec/Hz as the spectral efficiency and allow the evaluation criteria to determine the conditions under which this is achieved.

**Proposed Resolution**

Recommendation: **Accepted-Duplicate**  
Recommendation by Lalit Kotecha

Comment #1

**Resolution of Group**

Decision of Group:

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**
The separation of downlink versus uplink spectral efficiency unnecessarily complicates the requirement - a single spectral efficiency will allow proposals to sensibly make the split between uplink and downlink.

Suggested Remedy
Remove the distinction between uplink and downlink.

Proposed Resolution
Recommendation: **Rejected-Duplicate**
Recommendation by Lalit Kotecha

Proposed Resolution
Recommendation: **Rejected**
Recommendation by Naguib, Tomcik, Sutivong,
At some earlier version of the SRD, there was an agreed upon text that defined "Covergae Enhancing Technologies". That text needs to be restored to provide the necessary clarification.

Suggested Remedy
Restore the definition and put it either in this section (in line 15) or in the Terminology (Appendix A) with a reference in line 15, such as "see definition in Appendix A, Terminology"

Proposed Resolution
recommendation: Accepted

Recommendation by Klerer

Given that we have a new editor - Dan should locate the defintion and supply it to the editor.

Reason for Recommendation

Resolution of Group decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

At some earlier version of the SRD, there was an agreed upon text that defined "Covergae Enhancing Technologies". That text needs to be restored to provide the necessary clarification.

Suggested Remedy
Restore the definition and put it either in this section (in line 15) or in the Terminology (Appendix A) with a reference in line 15, such as "see definition in Appendix A, Terminology"

Proposed Resolution
recommendation: Rejected

Recommendation by Joanne Wilson

This text was developed to address a proposal made at the September 2003 Interim 802.20 meeting. I reviewed the previous versions of the 802.20 requirements document and could not find a further definition of "coverage enhancing technologies." I believe the text is self explanatory and intended to provide the proponents with the flexibility in how they support this requirement .

Resolution of Group decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
Proposed modified text: "The security provisions of IEEE 802.20 should be part of an end-to-end solution that includes higher protocol layers..." etc.

Proposed Resolution: Accepted-Modified

Reason for Recommendation
This text is informative because it refers to the end-to-end security architecture that is beyond the scope of the 802.20 project and of this document. As such, it is inappropriate to say that this "should be part of ...". Thus, the current text is preferable.

Resolution of Group: Decision of Group:
The scope of this requirement needs to be refined. As worded, may suggest that the entire access control protocol must be encrypted.

Suggested Remedy

Proposed rewording: "The AI's secure access control shall use cryptographic methods."

Proposed Resolution: Rejected

The suggested paraphrase could be interpreted to imply that there is also a non-secure access control.

Reason for Recommendation

Resolution of Group: Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

Use reply to comment #87

Proposed Resolution: Accepted-Modified

Reason for Recommendation

improves clarity

Resolution of Group: Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
Comment # 142 Comment by: Doug Knisely

Terminology

Suggested Remedy

"Access control" => "Access authentication"

Proposed Resolution Recommendation: Accepted-Modified Recommendation by Joanne Wilson

Replace the text with, "Access control shall include authentication using a cryptographic method."

Reason for Recommendation

Agree with the spirit of the comment, but believe the above is a more complete statement of the requirement.

Comment # 54 Comment by: Dan Gal

The sub-section heading does not reflect the Integrity part of the text.

Suggested Remedy

Change the heading of 4.1.1.2 to: "Privacy and Message Integrity"

Proposed Resolution Recommendation: Accepted Recommendation by Klerer
Language is not that of a requirement, especially the usage of "will" instead of "shall/should".

Suggested Remedy

Change to: "The AI shall provide privacy and message integrity protection for both signalling messages and user data traffic. Appropriate methods shall be employed to protect the individual user's identity and messages from being altered, duplicated or otherwise compromised. Indication to both the sender and recipient of the altered message/data should be given by the system.

Proposed Resolution

Change to: "The AI shall provide privacy and message integrity protection for both signalling messages and user data traffic. Appropriate methods shall be employed to protect the individual user's identity and messages from being altered, duplicated or otherwise compromised. Indication to both the sender and recipient of the altered message/data should be given by the system.

Proposed Resolution

Language is not that of a requirement, especially the usage of "will" instead of "shall/should".

Proposed Resolution

Change to: "The AI shall provide privacy and message integrity protection for both signalling messages and user data traffic. Appropriate methods shall be employed to protect the individual user's identity and messages from being altered, duplicated or otherwise compromised. Indication to both the sender and recipient of the altered message/data should be given by the system.

Proposed Resolution

A method that will provide message integrity across the air interface to protect user data traffic, as well as signaling messages from unauthorized modification shall be specified.

Proposed Resolution

A method that will provide message integrity across the air interface to protect user data traffic, as well as signaling messages from unauthorized modification shall be specified.

Proposed Resolution

A method that will provide message integrity across the air interface to protect user data traffic, as well as signaling messages from unauthorized modification shall be specified.

Proposed Resolution

Text should be a normative requirement.

Proposed Resolution

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Proposed Resolution

A method that will provide message integrity across the air interface to protect user data traffic, as well as signaling messages from unauthorized modification shall be specified.
Text should be a normative requirement.

**Suggested Remedy**

Encryption across the air interface to protect user data traffic, as well as signaling messages, from unauthorized disclosure shall be provided.

**Proposed Resolution**

Add after line 2:

"The 802.20 standard shall permit the data traffic and signaling information on a per-user basis to be protected by:
- message integrity and encryption,
- protected by message integrity but not encryption,
- protected by encryption but not message integrity, or
- unprotected by either message integrity or encryption."

**Resolution of Group**

This should only apply to data traffic. The treatment of signalling information is a network operator issue more than a user issue.

**Comment # 144**

Comment by: Doug Knisely

Text should be a normative requirement.

**Suggested Remedy**

Encryption across the air interface to protect user data traffic, as well as signaling messages, from unauthorized disclosure shall be provided.

**Proposed Resolution**

Add after line 2:

"The 802.20 standard shall permit the data traffic and signaling information on a per-user basis to be protected by:
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- protected by message integrity but not encryption,
- protected by encryption but not message integrity, or
- unprotected by either message integrity or encryption."

**Comment # 147**

Comment by: Doug Knisely

Need to clarify that system can operate with any combination of integrity, encryption, neither, or both.

**Suggested Remedy**

Add after line 2:

"The 802.20 standard shall permit the data traffic and signaling information on a per-user basis to be protected by:
- message integrity and encryption,
- protected by message integrity but not encryption,
- protected by encryption but not message integrity, or
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**Proposed Resolution**

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**Resolution of Group**

This should only apply to data traffic. The treatment of signalling information is a network operator issue more than a user issue.

**Comment # 144**

Comment by: Doug Knisely

Text should be a normative requirement.

**Suggested Remedy**

Encryption across the air interface to protect user data traffic, as well as signaling messages, from unauthorized disclosure shall be provided.

**Proposed Resolution**

Add after line 2:

"The 802.20 standard shall permit the data traffic and signaling information on a per-user basis to be protected by:
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**Resolution of Group**

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**Comment # 147**

Comment by: Doug Knisely

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**Suggested Remedy**

Add after line 2:

"The 802.20 standard shall permit the data traffic and signaling information on a per-user basis to be protected by:
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**Resolution of Group**

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**Comment # 144**

Comment by: Doug Knisely

Text should be a normative requirement.

**Suggested Remedy**

Encryption across the air interface to protect user data traffic, as well as signaling messages, from unauthorized disclosure shall be provided.

**Proposed Resolution**

Add after line 2:

"The 802.20 standard shall permit the data traffic and signaling information on a per-user basis to be protected by:
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**Resolution of Group**

This should only apply to data traffic. The treatment of signalling information is a network operator issue more than a user issue.

**Comment # 147**

Comment by: Doug Knisely

Need to clarify that system can operate with any combination of integrity, encryption, neither, or both.

**Suggested Remedy**

Add after line 2:

"The 802.20 standard shall permit the data traffic and signaling information on a per-user basis to be protected by:
- message integrity and encryption,
- protected by message integrity but not encryption,
- protected by encryption but not message integrity, or
- unprotected by either message integrity or encryption."

**Resolution of Group**

This should only apply to data traffic. The treatment of signalling information is a network operator issue more than a user issue.
Change the heading of 4.1.1 to: "Privacy and Message Integrity"

Proposed Resolution: Accepted

Recommendation by: Joanne Wilson

Reason for Recommendation:
There should be consistency between the header and the contents of the section

Resolution of Group: Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
The AI shall provide privacy and message integrity protection for both signalling messages and user data traffic. Appropriate methods shall be employed to protect the individual user's identity and messages from being altered, duplicated or otherwise compromised. Indication to both the sender and recipient of the altered message/data should be given by the system.

Proposed Resolution: Rejected
Recommendation by: Joanne Wilson

Use reply in record #80 to comment #212

Reason for Recommendation:
The second part of the proposed remedy establishes requirements on higher layers that are outside of the scope of the 802.20 standard.

Proposed Resolution: Accepted-Modified
Recommendation by: Joanne Wilson

Use reply in record #80 to comment #212

Reason for Recommendation:
A method that will provide message integrity across the air interface to protect user data traffic, as well as signaling messages from unauthorized modification shall be provided will be specified.

Proposed Resolution: Accepted-Modified
Recommendation by: Joanne Wilson

Use reply in record #80 to comment #212

Reason for Recommendation:
Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution:
Group’s Action Items:
Group’s Notes:
Group’s Action Items:
Text should be a normative requirement.

**Suggested Remedy**

Encryption across the air interface to protect user data traffic, as well as signaling messages, from unauthorized disclosure shall be provided will be incorporated.

**Proposed Resolution**

Revise sentence to read, "The 802.20 standard shall support encryption across the air interface to protect user data traffic, as well as signaling messages, from unauthorized disclosure ."

**Reason for Recommendation**

improved clarity
Add after line 2:

"The 802.20 standard shall permit the data traffic and signaling information on a per-user basis to be protected by:
- message integrity and encryption,
- protected by message integrity but not encryption,
- protected by encryption but not message integrity, or
- unprotected by either message integrity or encryption."

Proposed Resolution Recommendation: **Rejected**

Recommendation by Joanne Wilson, Mike Youssefmir

Reason for Recommendation
No explanation given as to the benefit of providing these various options.

Resolution of Group Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

---

Text should be a normative requirement. Also strengthen to include other MT identifying parameters.

Proposed Resolution Recommendation: **Accepted-Clarified**

Recommendation by Klerer

Reason for Recommendation
See reply to other comments on this section

Resolution of Group Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
The system will provide appropriate MAC and PHY capabilities to prevent the unauthorized disclosure of the mobile terminal identifier, mobile terminal hardware identifier (e.g., electronic serial number), and end-user identity.

It's not clear why the current requirement is inadequate and why lower level requirements are not implied by the existing text. Also unclear as to what are the trade-offs associated with this requirement. More explanation is needed.

It shall be possible to provide protection against Denial of Service (DOS) attacks whenever possible.
In a wireless system, protection against DoS is not always possible, but should be a design goal whenever practical.

**Suggested Remedy**

It shall be possible to provide protection against Denial of Service (DOS) attacks whenever possible.

**Proposed Resolution**

Replaced with "reasonable and non-discriminatory (RAND)".
"...currently known attacks.." current attacks were unknown to past analysis

Delete "currently"

Proposed Resolution Recommendation: Accepted Recommendation by Klerer

Reason for Recommendation
Resolution of Group Decision of Group:

Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items

"...on a fair and non-discriminatory..." is not consistent with ANSI IPR (for example) and other public Standards IPR policies

Replace it with "reasonable and non-discriminatory (RAND).."

Proposed Resolution Recommendation: Accepted Recommendation by Joanne Wilson

Reason for Recommendation okay
Resolution of Group Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items
### Comment # 187
**Comment by:** Eshwar Pittampalli  
**Type:** Technical, Binding  
**Page:** 17  
**Line:** 14  
**Fig/Table#:**  
**Section:** 4.1.11.5

"...currently known attacks.." current attacks were unknown to past analysis

**Suggested Remedy**
Delete "currently"

**Proposed Resolution**
**Recommendation:** Accepted
**Recommendation by:** Joanne Wilson

**Reason for Recommendation**
editorial and the change doesn't impact the meaning of the sentence

**Resolution of Group**
**Decision of Group:**
**Reason for Group’s Decision/Resolution**
**Group’s Notes**
**Group’s Action Items**

### Comment # 128
**Comment by:** Doug Knisely  
**Type:** Technical, Binding  
**Page:** 12  
**Line:** 5  
**Fig/Table#:**  
**Section:** 4.1.2

Not a requirement; immediately obvious and adds no value.

**Suggested Remedy**
Delete "The individual 802.20 technology proposals may optimize their MAC and PHY designs for specific bandwidth and Duplexing schemes."

**Proposed Resolution**
**Recommendation:** Rejected
**Recommendation by:** Klerer

**Reason for Recommendation**
This is an important meta-requirement which has been the subject of extensive discussion and is not immediately obvious as there have been other proposals that require common MAC/PHY across duplexing schemes.

**Resolution of Group**
**Decision of Group:**
**Reason for Group’s Decision/Resolution**
**Group’s Notes**
**Group’s Action Items**
Comment # 128 Comment by: Doug Knisely

**Technical, Binding Type**

Page 12 Line 5 Section 4.1.2

Not a requirement; immediately obvious and adds no value.

**Suggested Remedy**
Delete "The individual 802.20 technology proposals may optimize their MAC and PHY designs for specific bandwidth and Duplexing schemes."

**Proposed Resolution**

**Recommendation:** Rejected

**Recommendation by:** Joanne Wilson

**Reason for Recommendation**
Text is informative and useful.

**Resolution of Group**

Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

---

Comment # 170 Comment by:

**Technical, Binding Type**

Page 12 Line 11 Section 4.1.3

**Suggested Remedy**

**Proposed Resolution**

**Recommendation:** Accepted-Clarified

**Recommendation by:** Naguib, Sutivong, Tomcik

Add Clarification to these terms.

**Reason for Recommendation**
various levels of "coupling" are not defined in this document. They should be defined, or a reference given.

**Resolution of Group**

Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
"The AI shall support..... (TDD)." is ambiguous.

Suggested Remedy
Replace it with "The AI shall support closely coupled/loosely coupled / mutually decoupled FDD and TDD modes."

Resolution of Group Decision of Group:
Reason for Recommendation
I prefer the comment of Dan Gal to fix this.

Proposed Resolution
Recommendation: Rejected
Reason for Recommendation
The proposed terms "closed coupled/ loosely coupled/ mutually coupled" are not defined. Please clarify.

Resolution of Group
Decision of Group:
"The AI shall support..... (TDD)." is ambiguous.

Suggested Remedy
Replace it with "The AI shall support closely coupled/loosely coupled / mutually decoupled  FDD and TDD modes."

Proposed Resolution
Recommendation: **Rejected**

Recommendation by Joanne Wilson

Reason for Recommendation
The newly proposed text is thoroughly ambiguous.

Resolution of Group
Decision of Group:

Group's Notes

Group's Action Items

---

Proposed Resolution
Recommendation: **Rejected**

Recommendation by Naquib, Sutivong, Tomcik

Reason for Recommendation
Disagree, this is not implied in line 21/page 11

Resolution of Group
Decision of Group:

Group's Notes

Group's Action Items
If we delete that sentence, we need to make it clear somehow that the 802.20 system is not required to maintain the same data rate at different speeds. The fact that data rates degrade gracefully from ped speeds to high speeds need to be stressed out. Otherwise, it might be wrongly implied that system need to maintain same data rate across different speeds.

Proposed Resolution

Rejected

Naguib, Sutivong, Tomcik

Reason for Recommendation

Resolution of Group

Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

The sentence "As an example, ..." is redundant. Has the same meaning as line 21 in page 11.

Proposed Resolution

Accepted-Modified

Klerer

Reason for Recommendation

Resolution of Group

Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
Not an example as advertised. Not relevant to the requirement, thus adding no value.

Suggested Remedy
Delete "As an example, data rates gracefully degrade from pedestrian speeds to high speed mobility."

Proposed Resolution

Reason for Recommendation

Resolution of Group

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

---

"As an example,...mobility." is ambiguous.

Suggested Remedy
replace it with "Data rates may gracefully degrade from pedestrian speeds to higher speed mobility."

Proposed Resolution

Reason for Recommendation

Prefer other proposed solutions

Resolution of Group

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
The sentence "As an example, ..." is redundant. Has the same meaning as line 21 in page 11.

Delete the entire sentence that spans lines 17, 18: "As an example...".

Proposed Resolution

Recommendation: Accepted

Recommendation by: Joanne Wilson

Reason for Recommendation

No need to be redundant

Resolution of Group

Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

Delete "As an example, data rates gracefully degrade from pedestrian speeds to high speed mobility."

Proposed Resolution

Recommendation: Accepted-Duplicate

Recommendation by: Joanne Wilson

Reason for Recommendation

Same as reply in record #101 to comment # 31

Resolution of Group

Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
As an example, data rates may gracefully degrade from pedestrian speed to higher speed mobility.

Suggested Remedy
replace it with "Data rates may gracefully degrade from pedestrian speed to higher speed mobility."

Proposed Resolution
delete sentence,

Reason for Recommendation
see reply in record #101 to comment #31

Resolution of Group
Decision of Group:

Group’s Notes

Group’s Action Items

Comment # 171 Comment by: Eshwar Pittampalli
Comment Type Technical, Binding Page 12 Line 17 Fig/Table# Section 4.1.4

Comment # 129 Comment by: Doug Knisely
Comment Type Technical, Non-binding Page 12 Line 17 Fig/Table# Section 4.1.4

Not an example as advertised. Not relevant to the requirement, thus adding no value.

Suggested Remedy
Delete "As an example, data rates gracefully degrade from pedestrian speeds to high speed mobility."

Proposed Resolution
Recommendation: Accepted Recommendation by Lalit Kotecha

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
Comment # 33  Comment by: 

Suggested Remedy

Proposed Resolution

Resolution of Group

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

---

Comment # 32  Comment by: Dan Gal

Suggested Remedy

Proposed Resolution

Resolution of Group

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

---

The text of section 4.1.5 is not specific enough

append to the end of the sentence: "requirements of section 4.1.1".
so that the sentence should read: "...consistent with the spectral efficiency requirements of section 4.1.1."
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<th>33</th>
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<td>Section</td>
<td>4.1.5</td>
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</tr>
<tr>
<td>Comment</td>
<td>Need to clarify what &quot;consistent with spectral efficiency&quot; means.</td>
<td></td>
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</tbody>
</table>

**Suggested Remedy**  
Add the following sentence: "Thus, the aggregate data rate per sector shall be calculated by multiplying the spectral efficiency entry from Table 4-1 by the specified channel bandwidth."

**Proposed Resolution**  
This suggestion may be acceptable once we have a good understanding of how the term "channel bandwidth" is used. Does it or does it not include guard bands?

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<thead>
<tr>
<th>Comment #</th>
<th>172</th>
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<th>Eshwar Pittampalli</th>
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<td>4.1.5</td>
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<tr>
<td>Comment</td>
<td>&quot;Average user data.................greater&quot; is not in excess of existing technologies.</td>
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</table>

**Suggested Remedy**  
Replace it with "Average user data in a loaded system shall be in excess of 2 Mbps downlink and 1 Mbps uplink."

**Proposed Resolution**  
We need to maintain some sense of reality in numbers we throw about; certainly these numbers make no sense for a mobile system with a 1.25 MHz channel.
Table 4.2 ambiguous.

Suggested Remedy
Replace it with Phase 1 numbers changed to >3.0 Mbps (for 1.25 MHz DL), >1.5 Mbps (for 1.25 MHz UL), >12 Mbps (for 5 MHz DL), >6 Mbps (for 5 MHz UL) respectively and delete Phase 2 columns

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Suggested Remedy

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<tr>
<td>Replace it with Phase 1 numbers changed to &gt;3.0 Mbps (for 1.25 MHz DL), &gt;1.5 Mbps (for 1.25 MHz UL), &gt;12 Mbps (for 5 MHz DL), &gt;6 Mbps (for 5 MHz UL) respectively and delete Phase 2 columns</td>
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<td>Delete Option 2</td>
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<td>Option 2 is not desired.</td>
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<tr>
<td>Delete Option 2</td>
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<td>I prefer option 2</td>
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<td>Decision of Group:</td>
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<th>Group’s Action Items</th>
</tr>
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</table>
The average user data rate depends on number of users and channel conditions. As such, this requirement is incomplete and needs further clarification.

Proposed Resolution: **Rejected**

Recommended by: Naguib, Sutivong, Tomcik

Reason for Recommendation

Resolution of Group: Decision of Group:

Group's Decision/Resolution

Group's Notes

Group's Action Items

---

The text of section 4.1.5 is not specific enough

Suggested Remedy

Append to the end of the sentence: "requirements of section 4.1.1", so that the sentence should read: "...consistent with the spectral efficiency requirements of section 4.1.1."

Proposed Resolution: **Accepted**

Recommended by: Joanne Wilson

Reason for Recommendation

Appropriate completion of the sentence.

Resolution of Group: Decision of Group:

Group's Notes

Group's Action Items
Need to clarify what "consistent with spectral efficiency" means.

Add the following sentence: "Thus, the aggregate data rate per sector shall be calculated by multiplying the spectral efficiency entry from Table 4-1 by the specified channel bandwidth."

Proposed Resolution: Rejected

Reason for Recommendation:
The current text is sufficient for the purposes of the requirements document. The remainder should be addressed in the evaluation criteria document. Also, I believe that the aggregate data rate being specified in this section is to be quoted for a specified block size and not on a per channel basis, thereby taking into account the requirement to meet the out of band emission limits.

Resolution of Group: Decision of Group:

"Average user data........................greater" is not in excess of existing technologies.

Proposed Resolution: Rejected

Reason for Recommendation:
The current requirement is sufficiently ambitious for a loaded system at 90% of the cell coverage area. The statement that existing technologies meet this requirement is unsupportable and there is no assurance that the proposed requirements can be met by any currently available technology. It's also impossible to develop a standard based on currently unavailable technology.

Resolution of Group: Decision of Group:

Average user data in a loaded system shall be in excess of 2 Mbps downlink and 1 Mbps uplink.
Table 4-2 ambiguous.

Suggested Remedy
Replace it with Phase 1 numbers changed to >3.0 Mbps (for 1.25 MHz DL), >1.5 Mbps (for 1.25 MHz UL), >12 Mbps (for 5 MHz DL), >6 Mbps (for 5 MHz UL) respectively and delete Phase 2 columns

Proposed Resolution Recommendation: Rejected Recommendation by Joanne Wilson

Reason for Recommendation
Since 802.20 is not establishing requirements on the channel bandwidth, it should not express requirements for the data rates based on channel bandwidths. Hence, these requirements are ambiguous in that its not clear what bandwidth is being referenced.

Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

Comment # 174 Comment by: Eshwar Pittampalli
Comment Type Technical, Binding Page 13 Line 11 Fig/Table# 4-2 Section 4.1.5
Option 2 is not desired.

Suggested Remedy
Delete Option 2

Proposed Resolution Recommendation: Rejected Recommendation by

Reason for Recommendation
there is no reason given in the comment about why option 2 is not desired. Hence, there is no basis for accepting this comment.

Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
Comment # 288
Comment by:

Suggested Remedy

Proposed Resolution: **Accepted-Modified**
Recommended by: Naguib, Sutivong, Tomcik
Change values to be consistent with 2 b/s/Hz downlink and 1 b/s/Hz Uplink, Spectral Efficiencies, as adopted by the WG

Reason for Recommendation
Resolution of Group: Decision of Group:
Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

---

Comment # 3
Comment by:

Suggested Remedy

Proposed Resolution: **Rejected**
Recommended by: Anna Tee
Please see Comment #220.

Reason for Recommendation
The peak user data rate mainly reflects the maximum capability that the system can support. The 802.20 standard requirement should be consistent with its other section, i.e., 1) Section 1.3 PAR summary, where it said that 802.20 should be significantly better than existing mobile cellular standards; 2) data rate requirements of the applications as listed in section 2.

Resolution of Group: Decision of Group:
Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
Comment # 13  Comment by:
Page 12  Line 22  Section 4.1.5.1

Suggested Remedy

Proposed Resolution  Recommendation: Rejected-Duplicate  Recommendation by Anna Tee

Please see Comment #220

Reason for Recommendation
See reasons proposed for comment #3.

Resolution of Group  Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

Comment # 77  Comment by:
Page 12  Line 22  Section 4.1.5.1

Suggested Remedy

Proposed Resolution  Recommendation: Rejected-Duplicate  Recommendation by Anna Tee

See reply to comment #3

Reason for Recommendation
See reply to comment #3

Resolution of Group  Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
Comment # 130  
Comment by: Anna Tee  
Type Technical, Binding  
Page 13  
Line 5  
Fig/Table#  
Section 4.1.5.1

Suggested Remedy

Proposed Resolution  
Recommendation: Specify an alternative fairness criteria, e.g., the one used in the evaluation criteria methodology or any other appropriate ones.

Recommendation by Anna Tee

Reason for Recommendation

Resolution of Group: Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

Comment # 3  
Comment by: Todd Chauvin  
Type Technical, Binding  
Page 12  
Line 22  
Fig/Table#  
Section 4.1.5.1

Suggested Remedy

Remove option 1 and adopt option 2

Proposed Resolution  
Recommendation: Accepted

Recommendation by Klerer

Reason for Recommendation

Resolution of Group: Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
The concept of bandwidth must be clarified given that we are not requiring specific channel bandwidths

Remove option 1 and adopt option 2

Accept with modification as suggested in my comment

The concept of two phases is ill-defined

Remove option 1 and adopt option 2

As in comment 4
Option 1 peak rates result in a large user data rate peak to average ratio of the order of 10:1 and will rarely be seen in practice (see C802-20-04-33r1). We should therefore not artificially limit proposals to large peak data rates whose sole purpose is specs-manship and will rarely be seen in practice.

Suggested Remedy
Remove option 1 and adopt option 2

The concept of bandwidth must be clarified given that we are not requiring specific channel bandwidths

Suggested Remedy
Remove option 1 and adopt option 2
The concept of two phases is ill-defined

Suggested Remedy
Remove option 1 and adopt option 2

Proposed Resolution
Recommendation: **Accepted-Duplicate**
Recommendation by: **Klerer**

Reason for Recommendation

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

---

Current options have internal inconsistencies. Need to "harmonize" with section 4.1.1 (Spectral Efficiency).

Suggested Remedy
option 3:
1. delete the table.
2. Alternate text for this section:

"The user peak data rate is the maximum attainable data rate, under best channel conditions, mobility, system loading and service parameters such as QoS. For a given link (DL/UL) and a given channel bandwidth, it is calculated by multiplying the appropriate spectral efficiency entry of Table 4-1 by the specified channel bandwidth and factored by 1.2. As an example, the peak user data rate for a pedestrian user of a 5 MHz downlink channel, would be 12 Mbs (2.0*5*1.2 = 12 Mbs)."

Proposed Resolution
Recommendation: **Rejected**
Recommendation by: **Klerer**

The multiplier of 1.2 needs explanation, otherwise it appears to be purely arbitrary. Also the text is ambiguous does "best" modify channel conditions, mobility, system loading or only channel conditions?

Reason for Recommendation

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

---
Option 1 peak rates result in a large user data rate peak to average ratio of the order of 10:1 and will rarely be seen in practice (see C802-20-04-33r1). We should therefore not artificially limit proposals to large peak data rates whose sole purpose is specs-manship and will rarely be seen in practice.

Proposed Resolution
Remove option 1 and adopt option 2

The concept of bandwidth must be clarified given that we are not requiring specific channel bandwidths

Proposed Resolution
Remove option 1 and adopt option 2

Proposed Resolution
Remove option 1 and adopt option 2

Proposed Resolution
Remove option 1 and adopt option 2
The concept of two phases is ill-defined

Suggested Remedy
Remove option 1 and adopt option 2
Option 1 "Peak Per User Data Rates" is a very important parameter for definition of the system performance for TDMA and CDMA architecture even if there is no or less chance for one user get this defined peak user data rate. However, for FDMA system, this definition is not system performance, but this is only performance for one user. They are able to provide all sub channels to one user, for make appearant large peak user data rate. But, for FDMA system, it is no meaning. Current description makes a limitation of system architecture in system requirement phase, (it must be executed in call for proposal and evaluation phase) although it is not necessary to define a performance of very few situation

Suggested Remedy

1: Change option 1 Line 2-3 to "System Architecture" data rate and Am and modified to "These peak data rate targets are independent of channel conditions, traffic and loading."
(Delete "and system architecture"

"2: Insert after Option 1 Line 4 with the following words
"If system has some sub channels for users, user data rate is defined sum of user data rates in one sub channel."

Proposed Resolution

Recommendation: **Rejected**

Reason for Recommendation

Resolution of Group  Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items
Average user data rate is not defined and depends on the number of users. At best, it would be equal to the total system capacity divided by the number of users in the system; at worst, it is contradictory to the spectral efficiency requirements and would be unachievable for any representative number of users. If this statement was meant to convey a fairness requirements, it does just the opposite.

Suggested Remedy

Delete "Average user data rates in a loaded system shall be in excess of 512Kbps downlink and 128Kbps uplink. This shall be true for 90% of the cell coverage or greater."

Proposed Resolution: **Accepted**

Reason for Recommendation

Resolution of Group

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
Multiple phases are a bad idea at this stage (early in requirements). The requirements should focus on the real market requirements driven by carrier needs and competitive realities (i.e., other competing technologies). If after evaluating all technology submissions it is necessary to adopt a phased approach, the requirements can be revised IFF there is a compelling reason that the requirements cannot be met.

Phase 1 requirements are below the capabilities of published, implemented standards and are not nearly aggressive enough for the 802.20 market window.

Suggested Remedy
Delete Phase 1 columns. Delete Phase 2 headings. I.e., Phase 2 requirements as shown should be the requirements for 802.20.

Delete Option 2.

Proposed Resolution
See my comments

Reason for Recommendation
Disagree that the current Phase 2 requirements are realistic

Resolution of Group
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items
"Peak Per User Data Rates" is a very important parameter for defining the system performance for TDMA and CDMA architecture.
It is not define system performance for FDMA system, it's define only performance for one user.
It is able to all sub channels provides to one user, for make apparent large peak user data rate.
But, What is it meaning for FDMA system?
It is not neccessary define a performance of very few situation.

Suggested Remedy
#1:Line 2-3 is modified to "These peak data rate targets are independent of channel conditions, traffic and loading."
#2:Incert following line to after Line4 "If system has some sub channels for users, user data rate is defined sum of user data rates in one sub channel"

Proposed Resolution

Recommendation: **Rejected-Duplicate**

Reason for Recommendation

See reply on initial comment

Resolution of Group

Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
Based on the standards and products time frame, the technology would probably be available at least two years later. It would be necessary for this technology to support maximum user data rates that are higher than the capability of the current technology, which is supporting similar applications of a relatively older generation.

As a reference, 1xEV-DV Release D supports peak data rates of 3.08 Mbps and 1.5 Mbps for the DL and RL respectively in an 1.25 MHz bandwidth. Scaling these to 5 MHz channel bandwidth results in: 12.32 Mbps and 6 Mbps respectively.

For further information on bandwidth requirements for video streams: 6-32 Mbps for high definition MPEG-2 movies, up to 19.6 Mbps for hi-def MPEG-2 sports; DVD with standard definition: maximum requirement of 9 Mbps.

Suggested Remedy
Scaling the above peak data rates in the reference case by approximately 1.6 times results in the following proposed values:

"Under an ideal channel and loading conditions, the AI shall support peak user data rates in excess of the following:
1.25 MHz channel bandwidth - DL: 5 Mbps; UL: 2.5 Mbps
5 MHz bandwidth - DL: 20 Mbps; UL: 10 Mbps"

Proposed Resolution
Recommendation: **Rejected**

Reason for Recommendation
The multipliers are artificial.

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
(C802.20-04-44) text in Section 4.1.5.1 represents a consensus of a number of Individuals. It was included previously in V12, but seems to have been removed in V13.

Suggested Remedy

Adopt the text in Section 4.1.5.1 of C802.20-04-44, with the modification of deleting the word "channel" from the table.

Proposed Resolution

Recommendation: Rejected

 Recommendation by: Klerer

Option 1 peak rates result in a large user data rate peak to average ratio of the order of 10:1 and will rarely be seen in practice (see C802-20-04-33r1). We should therefore not artificially limit proposals to large peak data rates whose sole purpose is specs-manship and will rarely be seen in practice.

Suggested Remedy

Remove option 1 and adopt option 2

Proposed Resolution

Recommendation: Accepted-Duplicate

 Recommendation by: Klerer
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The concept of bandwidth must be clarified given that we are not requiring specific channel bandwidths

**Suggested Remedy**

Remove option 1 and adopt option 2

**Proposed Resolution**

Recommendation: **Accepted-Duplicate**

Recommendation by: Klerer

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The concept of two phases is ill-defined

**Suggested Remedy**

Remove option 1 and adopt option 2

**Proposed Resolution**

Recommendation: **Accepted-Duplicate**

Recommendation by: Klerer
Option 1 peak rates result in a large user data rate peak to average ratio of the order of 10:1 and will rarely be seen in practice (see C802-20-04-33r1). We should therefore not artificially limit proposals to large peak data rates whose sole purpose is specs-manship and will rarely be seen in practice.

Proposed Resolution
Remove option 1 and adopt option 2

Suggested Remedy
Remove option 1 and adopt option 2

Proposed Resolution
Remove option 1 and adopt option 2

Suggested Remedy
Remove option 1 and adopt option 2
The concept of two phases is ill-defined

Suggested Remedy
Remove option 1 and adopt option 2

Proposed Resolution

Recommendation: **Accepted-Duplicate**

Recommendation by: Klerer

Separate Peak and Average data rates

The 802.20 system shall support non-line of sight, outdoor to indoor scenarios and indoor coverage.

Change overall heading to 4.1.6 User Data rates. Add new subheading 4.1.6.1 Peak User Data rates

Proposed Resolution

Recommendation: **Accepted**

Recommendation by: Klerer
Jim Ragsdale

Suggested Remedy
Move to new subsection 4.1.6.2 Average User Data rates and change text to: System average user data rates shall be in excess of 1.5 Mbps downlink and 500 Kbps uplink.

Proposed Resolution
Rejection
Reason for Recommendation
Resolution of Group
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items

Suggested Remedy
The requirements on the DL and UL peak user data rates as stated in option 2 are too weak and should not be accepted. Current systems such as WCDMA and 1xEV-DO provide significantly higher peak user data rates and are much more in line with what's proposed in option 1.

Proposed Resolution
Rejection
Reason for Recommendation
Resolution of Group
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items
Comment # 13  Comment by:

Comment  Type  Technical, Binding  Page 12  Line 22  Fig/Table#  Section 4.1.5.1
Suggested Remedy

Proposed Resolution  Recommendation:  Rejected-Duplicate  Recommendation by  Naguib, Sutivong, Tomcik

Reason for Recommendation
Resolution of Group  Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items

Comment # 77  Comment by:

Comment  Type  Technical, Binding  Page 12  Line 22  Fig/Table#  Section 4.1.5.1
Suggested Remedy

Proposed Resolution  Recommendation:  Rejected-Duplicate  Recommendation by  Naguib, Sutivong, Tomcik

Reason for Recommendation
Resolution of Group  Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items

Comment # 130  Comment by:

Comment  Type  Technical, Binding  Page 13  Line 5  Fig/Table#  Section 4.1.5.1
Suggested Remedy

Proposed Resolution  Recommendation:  Accepted  Recommendation by  Naguib, Sutivong, Tomcik

Agreed.

Reason for Recommendation
Resolution of Group  Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items
Agreed. 802.20-based systems should be at least on par with other existing systems out there.

Proposed Resolution: Accepted

Recommended by: Naguib, Sutivong, Tomcik

Rejected-Duplicate

Recommended by: Naguib, Sutivong, Tomcik

Rejected-Duplicate

Recommended by: Naguib, Sutivong, Tomcik
Option 1 peak rates result in a large user data rate peak to average ratio of the order of 10:1 and will rarely be seen in practice (see C802-20-04-33r1). We should therefore not artificially limit proposals to large peak data rates whose sole purpose is specs-manship and will rarely be seen in practice.

**Proposed Resolution**
Remove option 1 and adopt option 2

**Reason for Recommendation**
option 2 is more reasonable and realistic

**Resolution of Group**
Decision of Group:

**Recommendation by** Joanne Wilson

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The concept of bandwidth must be clarified given that we are not requiring specific channel bandwidths

**Proposed Resolution**
Remove option 1 and adopt option 2

**Reason for Recommendation**
see reply in record #111 to comment #3

**Resolution of Group**
Decision of Group:

**Recommendation by** Joanne Wilson
The concept of two phases is ill-defined

Suggested Remedy
Remove option 1 and adopt option 2

Proposed Resolution: Accepted

Reason for Recommendation
see reply in record #111 to comment #3

Resolution of Group: Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

Option 1 peak rates result in a large user data rate peak to average ratio of the order of 10:1 and will rarely be seen in practice (see C802-20-04-33r1). We should therefore not artificially limit proposals to large peak data rates whose sole purpose is specs-manship and will rarely be seen in practice.

Suggested Remedy
Remove option 1 and adopt option 2

Proposed Resolution: Accepted-Duplicate

Reason for Recommendation

Resolution of Group: Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
The concept of bandwidth must be clarified given that we are not requiring specific channel bandwidths.

Suggested Remedy
Remove option 1 and adopt option 2

Proposed Resolution Recommendation: Accepted-Duplicate Recommendation by Joanne Wilson

Reason for Recommendation
Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

The concept of two phases is ill-defined

Suggested Remedy
Remove option 1 and adopt option 2

Proposed Resolution Recommendation: Accepted-Duplicate Recommendation by Joanne Wilson

Reason for Recommendation
Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
Current options have internal inconsistencies. Need to "harmonize" with section 4.1.1 (Spectral Efficiency).

Suggested Remedy

option 3:
1. delete the table.
2. Alternate text for this section:

"The user peak data rate is the maximum attainable data rate, under best channel conditions, mobility, system loading and service parameters such as QoS. For a given link (DL/UL) and a given channel bandwidth, it is calculated by multiplying the appropriate spectral efficiency entry of Table 4-1 by the specified channel bandwidth and factored by 1.2. As an example, the peak user data rate for a pedestrian user of a 5 MHz downlink channel, would be 12 Mbs (2.0*5*1.2 = 12 Mbs)."

Proposed Resolution

Recommendation: **Rejected**
Recommendation by: Joanne Wilson

Reason for Recommendation

The per user peak data rate is dependent on the specific air interface design and is not merely a calculation of the spectral efficiency requirement in the table times the channel bandwidth. Also, the example provided assumes that the user has access to the full 5 MHz block. The peak data rate for the 802.20 systems should not be required to give a single user access to all of the spectrum in a licensed block of spectrum. Given that the block assignments include OOB limits, it is unlikely that the full 5 MHz in a block is available to the system at large, let alone a single user. This example demonstrates that the targets are unachievable as specified in this section.

Resolution of Group

Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
Option 1 peak rates result in a large user data rate peak to average ratio of the order of 10:1 and will rarely be seen in practice (see C802-20-04-33r1). We should therefore not artificially limit proposals to large peak data rates whose sole purpose is specs-manship and will rarely be seen in practice.

The concept of bandwidth must be clarified given that we are not requiring specific channel bandwidths.

Remove option 1 and adopt option 2
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Option 1 "Peak Per User Data Rates" is a very important parameter for definition of the system performance for TDMA and CDMA architecture even if there is no or less chance for one user to get this defined peak user data rate. However, for FDMA system, this definition is not system performance, but this is only performance for one user. They are able to provide all sub-channels to one user, for making apparent large peak user data rate but, for FDMA system, it is no meaning. Current description makes a limitation of system architecture in system requirement phase, (it must be executed in call for proposal and evaluation phase) although it is not necessary to define a performance of very few situations.

Suggested Remedy

1: Change option 1 Line 2-3 to "System Architecture" data rate and A modified to "These peak data rate targets are independent of channel conditions, traffic and loading."
(Delete "and system architecture"

"2: Insert after Option 1 Line 4 with the following words
"If system has some sub-channels for users, user data rate is defined sum of user data rates in one sub-channel."

Proposed Resolution

Recommendation: Accepted

Recommendation by Joanne Wilson

Reason for Recommendation

If option 1 is selected then it should be modified per this comment. My preference is for option 2.

Resolution of Group

Decision of Group:

Group's Notes

Group's Action Items
This section specifies two options. Option 1 makes reference to a Phase 1 and Phase 2. This concept is not defined, and is therefore, not meaningful.

Suggested Remedy
Select option 2 and delete text dealing with average rates.

Proposed Resolution

Recommendation: **Accepted**
Recommendation by: Joanne Wilson

Reason for Recommendation
most preferred option of all.

Resolution of Group
Decision of Group:

Group’s Notes

Group’s Action Items

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Average user data rate is not defined and depends on the number of users. At best, it would be equal to the total system capacity divided by the number of users in the system; at worst, it is contradictory to the spectral efficiency requirements and would be unachievable for any representative number of users. If this statement was meant to convey a fairness requirements, it does just the opposite.

Suggested Remedy
Delete "Average user data rates in a loaded system shall be in excess of 512Kbps downlink and 128Kbps uplink. This shall be true for 90% of the cell coverage or greater."

Proposed Resolution

Recommendation: **Accepted-Modified**
Recommendation by: Joanne Wilson, Mike Youssefmir

see reply in record #122 to comment #92

Reason for Recommendation
consequential to previous reply

Resolution of Group
Decision of Group:

Group’s Notes

Group’s Action Items
Multiple phases are a bad idea at this stage (early in requirements). The requirements should focus on the real market requirements driven by carrier needs and competitive realities (i.e., other competing technologies). If after evaluating all technology submissions it is necessary to adopt a phased approach, the requirements can be revised IFF there is a compelling reason that the requirements cannot be met.

Phase 1 requirements are below the capabilities of published, implemented standards and are not nearly aggressive enough for the 802.20 market window.

Suggested Remedy
Delete Phase 1 columns. Delete Phase 2 headings. I.e., Phase 2 requirements as shown should be the requirements for 802.20.

Delete Option 2.

Proposed Resolution
Recommendation: **Rejected**

Reason for Recommendation
Preference is for option 2. Agree that the concept of phases should be deleted, but the "bandwidth" dependency is ill defined in option 1, particularly since proposals may be submitted using any channel bandwidth.

Resolution of Group

Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
"Peak Per User Data Rates" is a very important parameter for define the system performance for TDMA and CDMA architecture.
It is not define system performance for FDMA system, it's define only performance for one user.
It is able to all sub channels provides to one user, for make appearant large peak user data rate.
But, What is it meaning for FDMA system?
It is not neccessary define a performance of very few situation.

Suggested Remedy

#1: Line 2-3 is modified to "These peak data rate targets are independent of channel conditions, traffic and loading."
#2: Insert following line to after Line4 "If system has some sub channels for users, user data rate is defined sum of user data rates in one sub channel"

Proposed Resolution: Accepted-Modified
Recommendation by: Joanne Wilson
Should delete "and system architecture" in both lines 3 and 13, since the same text appears in both options.

Reason for Recommendation

Should not define performance requirements for only a subset of the system architectures that may be proposed for the 802.20 air interface.

Resolution of Group: Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
The AI shall support peak system data rates in excess of the values shown in table 4-3. These peak data rate targets are independent of channel conditions, traffic loading, and system architecture.

Average user data rates in a loaded system shall be in excess of 512Kbps downlink and 128Kbps uplink. This shall be true for 90% of the cell coverage or greater.

It is better to specify the system peak data rates instead of peak user data rates. The reason why the large peak data rates is little hope and confusing for user. Important things are system data rates and average user data rates. The peak user data rates should be defined by each system for user if necessary.

Proposed Resolution: Accepted-Modified
Recommendation by: Joanne Wilson

Section and Option 1 modification

4.1.5.1 Peak system data rates and average user data rates -Downlink & Uplink

The AI shall support peak system data rates in excess of the values shown in table 4-3. These peak data rate targets are independent of channel conditions, traffic loading, and system architecture.

Reason for Recommendation
It is better to specify the system peak data rates instead of peak user data rates. The reason why the large peak data rates is little hope and confusing for user. Important things are system data rates and average user data rates. The peak user data rates should be defined by each system for user if necessary.
Based on the standards and products time frame, the technology would probably be available at least two years later. It would be necessary for this technology to support maximum user data rates that are higher than the capability of the current technology, which is supporting similar applications of a relatively older generation.

As a reference, 1xEV-DV Release D supports peak data rates of 3.08 Mbps and 1.5 Mbps for the DL and RL respectively in an 1.25 MHz bandwidth. Scaling these to 5 MHz channel bandwidth results in: 12.32 Mbps and 6 Mbps respectively.

For further information on bandwidth requirements for video streams: 6-32 Mbps for high definition MPEG-2 movies, up to 19.6 Mbps for hi-def MPEG-2 sports; DVD with standard definition: maximum requirement of 9 Mbps.

Suggested Remedy
Scaling the above peak data rates in the reference case by approximately 1.6 times results in the following proposed values:

"Under an ideal channel and loading conditions, the AI shall support peak user data rates in excess of the following:
1.25 MHz channel bandwidth - DL: 5 Mbps; UL: 2.5 Mbps
5 MHz bandwidth - DL: 20 Mbps; UL: 10 Mbps"

Proposed Resolution
Recommendation: Rejected
Recommendation by Joanne Wilson

Reason for Recommendation
The standard can only be based on the technology available at the time the standard is developed. It's impossible to develop a standard that can be assured to work well using a projection of what future technology will be able to deliver. Additionally, there is no technical basis for scaling up this requirement beyond its already unachievable level.

Resolution of Group Decision of Group:
Reason for Group's Decision/Resolution

Group's Notes
Group's Action Items
(C802.20-04-44) text in Section 4.1.5.1 represents a consensus of a number of Individuals. It was included previously in V12, but seems to have been removed in V13.

Suggested Remedy

Adopt the text in Section 4.1.5.1 of C802.20-04-44, with the modification of deleting the word "channel" from the table.

Proposed Resolution Recommendation: **Rejected**

Recommendation by: Joanne Wilson

Reason for Recommendation
The comment doesn't describe a problem with the current text. There is no technical basis presented for the proposed remedy to the unspecified problem.

Resolution of Group Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

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Option 1 peak rates result in a large user data rate peak to average ratio of the order of 10:1 and will rarely be seen in practice (see C802-20-04-33r1). We should therefore not artificially limit proposals to large peak data rates whose sole purpose is specs-manship and will rarely be seen in practice.

Suggested Remedy
Remove option 1 and adopt option 2

Proposed Resolution Recommendation: **Accepted-Duplicate**

Recommendation by: Joanne Wilson

Reason for Recommendation

Resolution of Group Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
The concept of bandwidth must be clarified given that we are not requiring specific channel bandwidths.

**Suggested Remedy**

*Remove option 1 and adopt option 2*

**Proposed Resolution**

*Recommendation: Accepted-Duplicate*

**Reason for Recommendation**

**Resolution of Group**

**Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**

---

The concept of two phases is ill-defined.

**Suggested Remedy**

*Remove option 1 and adopt option 2*

**Proposed Resolution**

*Recommendation: Accepted-Duplicate*

**Reason for Recommendation**

**Resolution of Group**

**Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**
Option 1 peak rates result in a large user data rate peak to average ratio of the order of 10:1 and will rarely be seen in practice (see C802-20-04-33r1). We should therefore not artificially limit proposals to large peak data rates whose sole purpose is specs-manship and will rarely be seen in practice.

Suggested Remedy
Remove option 1 and adopt option 2

Proposed Resolution Recommendation: **Accepted-Duplicate** Recommendation by Joanne Wilson

Reason for Recommendation
Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
The concept of two phases is ill-defined

Suggested Remedy
Remove option 1 and adopt option 2

Proposed Resolution
Recommendation: Accepted-Duplicate

Reason for Recommendation
Resolution of Group: Decision of Group:
Reason for Group’s Decision/Resolution

Group’s Notes
Group’s Action Items

The 802.20 system shall support non-line of sight, outdoor to indoor scenarios and indoor coverage.
Change overall heading to 4.1.6 User Data rates. Add new subheading 4.1.6.1 Peak User Data rates
Suggested Remedy
Move to new subsection 4.1.6.2 Average User Data rates and change text to: System average user data rates shall be in excess of 1.5 Mbps downlink and 500 Kbps uplink.

Proposed Resolution Recommendation: Rejected
Reason for Recommendation
Agree that there is too large a span between peak and average rates. However, there is no justification given for increasing the system average user data rates to the level presented. Obviously, it doesn't matter whether these requirements appear in the same or different sections.

Resolution of Group Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items

Comment # 13 Comment by: John Chen
Type Technical, Binding Page 12 Line 22 Fig/Table# Section 4.1.5.1
Option 1 peak rates result in a large user data rate peak to average ratio of the order of 10:1 and will rarely be seen in practice (see C802-20-04-33r1). We should therefore not artificially limit proposals to large peak data rates whose sole purpose is specs-manship and will rarely be seen in practice.

Suggested Remedy
Remove option 1 and adopt option 2

Proposed Resolution Recommendation: Superceded
Reason for Recommendation
Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
The concept of bandwidth must be clarified given that we are not requiring specific channel bandwidths.

Remove option 1 and adopt option 2

Proposed Resolution: **Superseded**

Proposed Resolution: **Superseded**

Comment # 14  
Comment by: John Chen  
Type: Technical, Binding  
Page 12  
Line 22  
Figure/Table:  
Section: 4.1.5.1

Comment # 15  
Comment by: John Chen  
Type: Technical, Binding  
Page 12  
Line 22  
Figure/Table:  
Section: 4.1.5.1

The concept of two phases is ill-defined.

Remove option 1 and adopt option 2

Proposed Resolution: **Superseded**

Proposed Resolution: **Superseded**

Resolution of Group:  
Decision of Group:

Resolution of Group:  
Decision of Group:

Group’s Notes
Group’s Notes

Group’s Action Items
Group’s Action Items
Option 1 peak rates result in a large user data rate peak to average ratio of the order of 10:1 and will rarely be seen in practice (see C802-20-04-33r1). We should therefore not artificially limit proposals to large peak data rates whose sole purpose is specs-manship and will rarely be seen in practice.

The concept of bandwidth must be clarified given that we are not requiring specific channel bandwidths.
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**Suggested Remedy**
Remove option 1 and adopt option 2

**Proposed Resolution**

**Recommendation:** Superceded

**Reason for Recommendation**

Respiration of Group
Decision of Group:

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**
Based on the standards and products time frame, the technology would probably be available at least two years later. It would be necessary for this technology to support maximum user data rates that are higher than the capability of the current technology, which is supporting similar applications of a relatively older generation.

As a reference, 1xEV-DV Release D supports peak data rates of 3.08 Mbps and 1.5 Mbps for the DL and RL respectively in an 1.25 MHz bandwidth. Scaling these to 5 MHz channel bandwidth results in: 12.32 Mbps and 6 Mbps respectively.

For further information on bandwidth requirements for video streams: 6-32 Mbps for high definition MPEG-2 movies, up to 19.6 Mbps for hi-def MPEG-2 sports; DVD with standard definition: maximum requirement of 9 Mbps.

Suggested Remedy

Scaling the above peak data rates in the reference case by approximately 1.6 times results in the following proposed values:

"Under an ideal channel and loading conditions, the AI shall support peak user data rates in excess of the following:
1.25 MHz channel bandwidth - DL: 5 Mbps; UL: 2.5 Mbps
5 MHz bandwidth - DL: 20 Mbps; UL: 10 Mbps"

Proposed Resolution

Option 2 in sec 4.1.5.1 specified data rate very close to specified in this comment

Reason for Recommendation

Resolution of Group

Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
<table>
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<th>Comment #</th>
<th>Type</th>
<th>Page</th>
<th>Line</th>
<th>Fig/Table#</th>
<th>Section</th>
<th>Suggested Remedy</th>
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<tbody>
<tr>
<td>133</td>
<td>Technical, Non-binding</td>
<td>13</td>
<td>29</td>
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<td>4.1.6</td>
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**Resolution of Group Decision of Group:**

**Reason for Group’s Decision/Resolution:**

**Group’s Action Items:**

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**Resolution of Group Decision of Group:**

**Reason for Group’s Decision/Resolution:**

**Group’s Action Items:**
The phrase "scales linearly with system bandwidth" is inadequate. The scaling factor needs to be specified.

Suggested Remedy
Add a sentence (on line 3): "The scaling factor to be assumed for the technology evaluation purposes is 0.9. Thus, for a 5 MHz channel, the number of supported simultaneous sessions would be greater than $100 \times (5/1.25) \times 0.9 = 360$.

Proposed Resolution Recommendation: **Rejected**
It would be ok to clarify that "linearly" means a factor of 1. A factor not equal to one requires explanation.

Resolution of Group Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items

---

There are hardly any applications that require bearer access time as low as 25 ms. Consequently, setting the access time requirement to be 25 ms is likely to be perceived as too restrictive.

Suggested Remedy
Define an active user as one who can get access to a bearer channel within 100 ms.

Proposed Resolution Recommendation: **Accepted**
Reason for Recommendation
Resolution of Group Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items
Confusing, unnecessary sentence.

Suggested Remedy
Delete "This requirement shall be met even if the sessions are all on different terminals."

Proposed Resolution
Recommendation: **Rejected**

Reason for Recommendation
This sentence was requested by a service provider to avoid the possibility of this requirement only being met if all sessions were on one terminal.

Resolution of Group
Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

Unnecessary informative sentence creates more problems that it solves (e.g., what is "control capacity?").

Suggested Remedy
Delete "Note: Depending on traffic mix within a cell the control capacity may not be the limiting system parameter."

Proposed Resolution
Recommendation: **Rejected**

Reason for Recommendation
It is important to realize that the theoretical capacity indicated by the number of sessions that can be controlled may not be achievable e.g., if users require high throughput relative to the channel capacity.

Resolution of Group
Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
Comment # 175  Comment by:  Eshwar Pittampalli
Comment Type  Technical, Binding  Page 13  Line 22  Fig/Table#  Section 4.1.6
"potentially only" -- redundant

Suggested Remedy
Delete "potentially only"

Proposed Resolution

Recommended: Accepted
Recommendation by: Klerer

Reason for Recommendation

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

Comment # 176  Comment by:  Eshwar Pittampalli
Comment Type  Technical, Binding  Page 13  Line 22  Fig/Table#  Section 4.1.6

Sentences "Note that...VOIP." and "This requirement....terminals" are not cooperative.

Suggested Remedy
Replace with "Certain applications shall be given preferential treatment w.r.t. delay in order to work and this requirement shall be met even if the sessions are all on different terminals."

Proposed Resolution

Recommended: Rejected
Recommendation by: Klerer

Reason for Recommendation
I do not understand the comment

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
<table>
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<tr>
<th>Comment #</th>
<th>177</th>
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<th>Eshwar Pittampalli</th>
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<tr>
<td>Comment</td>
<td>Technical, Binding</td>
<td>Page 14</td>
<td>Line 5</td>
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<tr>
<td>&quot;control capacity&quot; is not clear.</td>
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<tr>
<td><strong>Suggested Remedy</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>Define &quot;control capacity&quot;</strong></td>
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<tr>
<td><strong>Proposed Resolution</strong></td>
<td><strong>Rejected</strong></td>
<td><strong>Recommendation by</strong></td>
<td>Klerer</td>
</tr>
<tr>
<td><strong>Reason for Recommendation</strong></td>
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<tr>
<td>The first sentence speaks about being able to &quot;control&quot; more than 100 simultaneous active sessions&quot;; it should be obvious that control capacity refers back to that.</td>
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<td><strong>Resolution of Group</strong></td>
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<tr>
<td><strong>Decision of Group</strong>:</td>
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<tr>
<td><strong>Reason for Group's Decision/Resolution</strong></td>
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<tr>
<th>Comment #</th>
<th>227</th>
<th>Comment by:</th>
<th>Ayman, Arak, Jim Naguib, Sutivong, Tomcik</th>
</tr>
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<tbody>
<tr>
<td>Comment</td>
<td>Technical, Binding</td>
<td>Page 13</td>
<td>Line 23</td>
</tr>
<tr>
<td>It is expected that system access times will be a probabilistic quantity.</td>
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<td><strong>Suggested Remedy</strong></td>
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<tr>
<td>Change to read as follows: &quot;...bearer channel available with a delay of less than 25 ms with a probability of at least 0.9.</td>
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</tr>
<tr>
<td><strong>Proposed Resolution</strong></td>
<td><strong>Accepted-Modified</strong></td>
<td><strong>Recommendation by</strong></td>
<td>Klerer</td>
</tr>
<tr>
<td><strong>Reason for Recommendation</strong></td>
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<tr>
<td>Probability is OK but number should be as proposed in my comment.</td>
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<td><strong>Resolution of Group</strong></td>
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<td><strong>Reason for Group's Decision/Resolution</strong></td>
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<td><strong>Group's Notes</strong></td>
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<td><strong>Group's Action Items</strong></td>
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</table>
This parameter is understood to be a scalable quantity, however linearity may not be the appropriate choice.

**Proposed Resolution**

Suggested Remedy

Change to read as follows: "...should scale with system bandwidth if the same application mixes are assumed."

**Resolution of Group Decision of Group:**

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

---

**Comment # 228**

**Comment by:** Ayman, Arak, Jim Naguib, Sutivong, Tomcik

**Comment**

**Type** Technical, Binding

**Page** 14 **Line** 2 **Fig/Table#** Section 4.1.6

This parameter is understood to be a scalable quantity, however linearity may not be the appropriate choice.

**Proposed Resolution**

Suggested Remedy

Change to read as follows: "...should scale with system bandwidth if the same application mixes are assumed."

**Resolution of Group Decision of Group:**

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

---

**Comment # 37**

**Comment by:**

**Comment**

**Type** Technical, Binding

**Page** 14 **Line** 2 **Fig/Table#** Section 4.1.6

Suggested Remedy

**Proposed Resolution**

Why is 0.9 chosen? Please clarify.

**Resolution of Group Decision of Group:**

Reason for Recommendation

Resolution of Group Decision/Resolution

Group’s Notes

Group’s Action Items

---
The requirement on number of simultaneous active users is not clearly stated. For instance, are all 100 users supposed to be able to get a bearer channel within the specified time limit under all channel conditions and loading? Due to the random nature of the wireless channel, at best this requirement should be probabilistic in nature. Furthermore, rationales on number of users as well as access latency should be provided.

Proposed Resolution

Recommendation: Rejected

Recommendation by Naguib, Sutivong, Tomcik

Agreed.

Reason for Recommendation

Resolution of Group

Decision of Group:

Group’s Notes

Group’s Action Items
Potentially confusing text.

Suggested Remedy

Change "...available with a delay of less than 25 ms." to: "...available within less than 25 ms."

Proposed Resolution  Recommendation: **Rejected**  Recommendation by: Joanne Wilson

**Reason for Recommendation**

Though an editorial change, this is commonly referred to as a delay requirement, so the current text is actually lends itself to less confusion than the proposed remedy.

Resolution of Group  Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

---

The phrase "scales linearly with system bandwidth" is inadequate. The scaling factor needs to be specified.

Suggested Remedy

Add a sentence (on line 3): "The scaling factor to be assumed for the technology evaluation purposes is 0.9. Thus, for a 5 MHz channel, the number of supported simultaneous sessions would be greater than 100* (5/1.25) * 0.9 = 360."

Proposed Resolution  Recommendation: **Rejected**  Recommendation by: Joanne Wilson

**Reason for Recommendation**

disagree. We should be able to evaluate proposals that may scale differently with system bandwidth. If a scaling factor is needed, that should be determined and presented as part of the evaluation criteria and not in the requirements document.

Resolution of Group  Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
There are hardly any applications that require bearer access time as low as 25 ms. Consequently, setting the access time requirement to be 25 ms is likely to be perceived as too restrictive.

Suggested Remedy
Define an active user as one who can get access to a bearer channel within 100 ms.

Proposed Resolution
Accepted
Recommendation by Joanne Wilson

The constraints on the time in which a channel needs to be available are too tight. For the 1.25 Mhz channel bandwidth either the number of users could be decreased or the time to have full use of the channel can be increased.

Suggested Remedy
Change text to read: “In this state the user should have a radio bearer channel available with a delay of less than 100 ms.”

Proposed Resolution
Accepted
Recommendation by Joanne Wilson

see reply in record #139 to comment #72.
Confusing, unnecessary sentence.

Delete "This requirement shall be met even if the sessions are all on different terminals."

Proposed Resolution: **Accepted**

Reason for Recommendation

Resolution of Group: **Decision by Group**: agree.

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

Unnecessary informative sentence creates more problems that it solves (e.g., what is "control capacity?").

Delete "Note: Depending on traffic mix within a cell the control capacity may not be the limiting system parameter."

Proposed Resolution: **Accepted**

Reason for Recommendation

Resolution of Group: **Decision by Group**: agree.

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
"potentially only" -- redundant

Delete "potentially only"

Proposed Resolution

Recommendation: **Rejected**
Recommendation by: Joanne Wilson

Reason for Recommendation

"potentially only minimal delay" is explained by the parenthetical statement that follows. I interpret this to mean that a user in an active session can have more than a "minimal delay" depending on their QoS level and that of other users.

Resolution of Group

Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

---

Repalce with "Certain applications shall be given preferential treatment w.r.t. delay in order to work and this requirement shall be met even if the sessions are all on different terminals."

Proposed Resolution

Recommendation: **Accepted-Modified**
Recommendation by: Joanne Wilson

Reason for Recommendation

Resolution of Group

Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
"control capacity" is not clear.

Define "control capacity"

Proposed Resolution

Recommendation: Rejected

Reason for Recommendation

See reply in record #143 to comment #135 which was to delete this sentence.

Resolution of Group

Decision of Group:

Group's Notes

Group's Action Items

It is expected that system access times will be a probabilistic quantity.

Change to read as follows: "...bearer channel available with a delay of less than 25 ms with a probability of at least 0.9.

Proposed Resolution

Recommendation:

Reason for Recommendation

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
This parameter is understood to be a scalable quantity, however linearity may not be the appropriate choice.

Suggested Remedy
Change to read as follows: 
"...should scale with system bandwidth if the same application mixes are assumed."

Proposed Resolution: Accepted
Recommended by: Joanne Wilson

Proposed Resolution: Accepted
Recommended by: Lalit Kotecha

Define an active user as one who can get access to a bearer channel within 100 ms.
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<th>Comment #</th>
<th>93</th>
<th>Comment by:</th>
<th>Mark Klerer</th>
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<tr>
<td>Type</td>
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<td>Page 13</td>
<td>Line 20</td>
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</table>
| Comment | The constraints on the time in which a channel needs to be available are too tight. For the 1.25 Mhz channel bandwidth either the number of users could be decreased or the time to have full use of the channel can be increased.

**Suggested Remedy**
Change text to read: "In this state the user should have a radio bearer channel available with a delay of less than 100ms."

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<th>Recommendation by</th>
<th>Lalit Kotecha</th>
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<td>Comment #72</td>
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| Reason for Recommendation |
| Resolution of Group |
| Decision of Group: |
| Reason for Group's Decision/Resolution |
| Group's Notes |
| Group's Action Items |

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<th>Doug Knisely</th>
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<tr>
<td>Type</td>
<td>Technical, Non-binding</td>
<td>Page 13</td>
<td>Line 29</td>
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</table>
| Comment | Confusing, unnecessary sentence.

**Suggested Remedy**
Delete "This requirement shall be met even if the sessions are all on different terminals."

<table>
<thead>
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<th>Recommendation: <strong>Accepted</strong></th>
<th>Recommendation by</th>
<th>Lalit Kotecha</th>
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</table>
Unnecessary informative sentence creates more problems that it solves (e.g., what is "control capacity?").

Delete "Note: Depending on traffic mix within a cell the control capacity may not be the limiting system parameter."

Proposed Resolution
Recommendation: Accepted
Recommendation by Lalit Kotecha

Suggested Remedy
Option 3 refers to an expired IETF draft for latency and error rate requirements. The IETF draft does not have clear requirements on latency and error rates, and it is mainly focus on requirements for the IP network. 802.20 standard's focus is mainly the wireless access network.

Proposed Resolution
Recommendation: Rejected
Recommendation by Anna Tee

Please refer to C802.20-04-55 for the proposed resolution.
Comment # 136  Comment by: 
Comment Type Technical, Binding Page 14 Line 9 Fig/Table# Section 4.1.7

Suggested Remedy

Proposal Resolution: **Accepted**

Recommendation: **Accepted**

Recommendation by: Anna Tee

Reason for Recommendation

Resolution of Group: Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Action Items

Comment # 73  Comment by: Hari Ganti

Comment Type Technical, Binding Page 15 Line 15 Fig/Table# Section 4.1.7

Suggested Remedy

Support option 3 as far as latency requirements are concerned.

Proposal Resolution: **Accepted**

Recommendation: **Accepted**

Recommendation by: Klerer

Reason for Recommendation

Resolution of Group: Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
The QoS requirements in the document today e.g. DiffServ, flexible ARQ schemes, etc., can be used to create QoS profiles that meet the needs of the applications several years from now when .20 is first implemented. Furthermore, our PAR specifically says that we are designing a system optimized for IP-data transport. That means the 802.20 air interface will handle applications over TCP and UDP that in turn require low error rates and low latency. In addition the current requirements document requires a MAC layer RTT of <10ms, ensuring the air interface can support low latency traffic under appropriate RF conditions. We recommend that the group not adopt specific packet error rate and latency requirements that would be arbitrary and only restrict possible service definitions in specific deployments.

Suggested Remedy
Remove this section.

Proposed Resolution

Recommendation: Accepted-Modified

Reason for Recommendation
this is a duplicate comment see reply to initial comment

Resolution of Group
Decision of Group:
"The 802.20 system shall provide the MAC and PHY capabilities to satisfy link-level QoS requirements by resolving system resource demand conflicts between all mobile terminals while still satisfying the negotiated QoS commitments for each individual terminal. A given user may be using several applications with differing QoS requirements at the same time (e.g., web browsing while also participating in a video conferencing activity with separate audio and video streams of information). The 802.20 system shall provide the MAC and PHY capabilities to distinguish various packet flows from the same mobile terminal or user and provide differentiated QoS delivery to satisfy the QoS requirement for each packet flow. The 802.20 system shall provide the ability to negotiate the traffic flow templates that define the various packet flows within a user's IP traffic and to associate those packet flows with the QoS requirements for each flow (i.e., QoS parameters such as delay, bit rate, error rate, and jitter)."

Proposed Resolution

Recommendation: Accepted-Modified

Recommendation by: Klerer

Needs additional clarification.

Reason for Recommendation

It should be possible to have a single QoS class that applies to an aggregate flow that may actually be multiple applications. In other cases there are multiple streams each with its own QoS class. Tying QoS to a stream should work whether it is from one user or more.

Resolution of Group

Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
"satisfy user QoS..." incomplete

Suggested Remedy
Replace it with "satisfy both intra and inter user QoS..."

Proposed Resolution
I can go either way

Resolution of Group
Agreed.

Reason for Recommendation

Group’s Notes

Group’s Action Items
Support option 3 as far as latency requirements are concerned.

Proposed Resolution: Rejected
Recommendation by: Joanne Wilson
propose to delete section 4.1.7.1 as opposed to adopting any of the options

Reason for Recommendation
Resolution of Group: Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items

The QoS requirements in the document today eg. DiffServ, flexible ARQ schemes, etc., can be used to create QoS profiles that meet the needs of the applications several years from now when .20 is first implemented. Furthermore, our PAR specifically says that we are designing a system optimized for IP-data transport. That means the 802.20 air interface will handle applications over TCP and UDP that in turn require low error rates and low latency. In addition the current requirements document requires a MAC layer RTT of <10ms, ensuring the air interface can support low latency traffic under appropriate RF conditions. We recommend that the group not adopt specific packet error rate and latency requirements that would be arbitrary and only restrict possible service definitions in specific deployments.

Proposed Resolution: Accepted-Modified
Recommendation by: Joanne Wilson
Agree to either delete the section or to use the text in record #152 in reply to comment #136

Reason for Recommendation
Resolution of Group: Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items
The 802.20 standard shall support the means to enable link-level end-to-end QoS between the base station and the mobile terminal. The link-level QoS structure shall provide sufficient capabilities to conform to an end-to-end QoS architecture, e.g., as negotiated by upper layer protocols such as RSVP, within the scope of the AI and The 802.20 standard shall support the ability to enforce QoS authorizations for each user and to support various policies determined by the system operator to resolve air interface resource contention issues between users based on the individual users’ QoS authorization and QoS requests. Policy-based QoS architecture.

Proposed Resolution: **Accepted**
Recommendation by: Joanne Wilson

Reason for Recommendation: agree with the comment.

Resolution of Group: Decision of Group:

Reason for Group’s Decision/Resolution:

Group’s Notes:

Group’s Action Items:
The 802.20 system shall provide the MAC and PHY capabilities to satisfy link-level QoS requirements by resolving system resource demand conflicts between all mobile terminals while still satisfying the negotiated QoS commitments for each individual terminal. A given user may be using several applications with differing QoS requirements at the same time (e.g., web browsing while also participating in a video conferencing activity with separate audio and video streams of information). The 802.20 system shall provide the MAC and PHY capabilities to distinguish various packet flows from the same mobile terminal or user and provide differentiated QoS delivery to satisfy the QoS requirement for each packet flow. The 802.20 system shall provide the ability to negotiate the traffic flow templates that define the various packet flows within a user's IP traffic and to associate those packet flows with the QoS requirements for each flow (i.e., QoS parameters such as delay, bit rate, error rate, and jitter).
**Comment # 178**  
**Comment by:** Eshwar Pittampalli

- **Type:** Technical, Binding  
- **Page:** 14  
- **Line:** 13  
- **Fig/Table#:**  
- **Section:** 4.1.7

"satisfy user QoS..." incomplete

**Suggested Remedy**

Replace it with "satisfy both intra and inter user QoS..."

**Proposed Resolution**

Rejection: **Rejected**  
**Recommendation by:** Joanne Wilson, Mike Youssefmir

See reply in record #153 to comment #137 for preferred remedy

**Reason for Recommendation**

**Resolution of Group**  
**Decision of Group:**

**Reason for Group's Decision/Resolution**

**Group's Notes**

**Group’s Action Items**

---

**Comment # 6**  
**Comment by:**

- **Type:** Technical, Binding  
- **Page:** 14  
- **Line:** 16  
- **Fig/Table#:**  
- **Section:** 4.1.7.1

**Suggested Remedy**

**Proposed Resolution**

Rejection: **Rejected**  
**Recommendation by:** Anna Tee

Please refer to contribution C802.20-04-55 for the proposed resolution.

**Reason for Recommendation**

Please refer to Comment #216 & C802.20-04-55 for the reasons why error rate and latency requirements are necessary for 802.20, as in many other wireless standards.

**Resolution of Group**  
**Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**
Comment # 16 Comment by:  
**Type**: Technical, Binding  
**Page**: 14  
**Line**: 16  
**Fig/Table#**:  
**Section**: 4.1.7.1  

**Suggested Remedy**  
**Proposed Resolution**  
**Recommendation**: Rejected-Duplicate  
**Recommendation by**: Anna Tee  

*See reply to comment #6*  

**Reason for Recommendation**  
*See reply to comment #6*  

**Resolution of Group**  
**Decision of Group:**  

**Reason for Group's Decision/Resolution**  

**Group's Notes**  

**Group's Action Items**  

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Comment # 80 Comment by:  
**Type**: Technical, Binding  
**Page**: 14  
**Line**: 16  
**Fig/Table#**:  
**Section**: 4.1.7.1  

**Suggested Remedy**  
**Proposed Resolution**  
**Recommendation**: Rejected-Duplicate  
**Recommendation by**: Anna Tee  

*See reply to comment #6*  

**Reason for Recommendation**  
*See reply to comment #6*  

**Resolution of Group**  
**Decision of Group:**  

**Reason for Group's Decision/Resolution**  

**Group's Notes**  

**Group's Action Items**  

Comment # 94 Comment by:

Comment Type Technical, Binding Page 14 Line 16 Fig/Table# Section 4.1.7.1

Suggested Remedy

Proposed Resolution Recommendation: Rejected Recommendation by Anna Tee

Please refer to C802.20-04-55 for the proposed resolution.

Reason for Recommendation

Please refer to Comment #216 & C802.20-04-55 for the reasons why error rate and latency requirements are necessary for 802.20, as in many other wireless standards.

Resolution of Group Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

Comment # 179 Comment by:

Comment Type Technical, Binding Page 14 Line 22 Fig/Table# Section 4.1.7.1

Suggested Remedy

Proposed Resolution Recommendation: Accepted-Clarified Recommendation by Anna Tee

The text for Option 1 was proposed in January's meeting in the contribution: C802.20-04-18r1. The referenced documents are listed as follows:

3. RFC 2475, "An Architecture for Differentiated Services"
4. RFC 2598, "An Expedited Forwarding PHB"
5. RFC 2597, "Assured Forwarding PHB Group"

Reason for Recommendation

Resolution of Group Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
Comment # 271

Comment by:

Comment
Type Technical, Binding
Page 14 Line 16 Fig/Table# Section 4.1.7.1
Suggested Remedy
Proposed Resolution Recommendation: Rejected-Duplicate Recommendation by Anna Tee
See reply to comment #6
Reason for Recommendation
See reply to comment #6
Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

Comment # 281

Comment by:

Comment
Type Technical, Binding
Page 14 Line 16 Fig/Table# Section 4.1.7.1
Suggested Remedy
Proposed Resolution Recommendation: Rejected-Duplicate Recommendation by Anna Tee
See reply to comment #6
Reason for Recommendation
See reply to comment #6
Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
The QoS requirements in the document today eg. DiffServ, flexible ARQ schemes, etc., can be used to create QoS profiles that meet the needs of the applications several years from now when .20 is first implemented. Furthermore, our PAR specifically says that we are designing a system optimized for IP-data transport. That means the 802.20 air interface will handle applications over TCP and UDP that in turn require low error rates and low latency. In addition the current requirements document requires a MAC layer RTT of <10ms, ensuring the air interface can support low latency traffic under appropriate RF conditions. We recommend that the group not adopt specific packet error rate and latency requirements that would be arbitrary and only restrict possible service definitions in specific deployments.

Suggested Remedy
Remove this section.

Proposed Resolution
Recommendation: Accepted-Clarified
Recommendation by: Klerer

Either this option or the one specified in my comments will work for me.
The QoS requirements in the document today, e.g., DiffServ, flexible ARQ schemes, etc., can be used to create QoS profiles that meet the needs of the applications several years from now when .20 is first implemented. Furthermore, our PAR specifically says that we are designing a system optimized for IP-data transport. That means the 802.20 air interface will handle applications over TCP and UDP that in turn require low error rates and low latency. In addition, the current requirements document requires a MAC layer RTT of <10ms, ensuring the air interface can support low latency traffic under appropriate RF conditions. We recommend that the group not adopt specific packet error rate and latency requirements that would be arbitrary and only restrict possible service definitions in specific deployments.

Suggested Remedy
Remove this section.

Proposed Resolution
Recommendation: Accepted-Duplicate
Recommendation by: Klerer

I believe bit rate, though an important service attribute, is not a QoS attribute as used here. It is an attribute of the data stream and the data streams attribute are subject to the QoS attributes. It could get quite unwieldy to use diff-serv to indicate bit rate.

Proposed Resolution
Recommendation: Rejected
Recommendation by: Klerer

Reason for Recommendation
Resolution of Group: Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
text such as in line 38 - "it may be useful to consider" is not recommended for use in a requirements document as it is quite useless.

Suggested Remedy
Delete option 2.

Proposed Resolution

Recommendation: Accepted-Modified
Reason for Recommendation
One option needs to be picked rather than only eliminating one.

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

---

In Option 3, line 4, missing "data rate,"

Suggested Remedy
insert "data rate," after "...with different"

Proposed Resolution

Recommendation: Rejected-Duplicate
Reason for Recommendation
See reply to comment 39

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
In Option 4, line 27, missing "data rate,"

Suggested Remedy
insert "data rate," after "...with different"

Proposed Resolution Recommendation: **Rejected-Duplicate** Recommendation by Klerer

See reply to comment 39

Resolution of Group Decision of Group:
Reason for Group's Decision/Resolution
Group's Action Items

Comment # Comment by: Dan Gal
Comment Type Technical, Binding Page 15 Line 27 Fig/Table# Section 4.1.7.1

1. All the entries of the table under Option 4 should be specified for the Air Interface portion of the system.
2. Need to distinguish between Realtime (RT) and non-Relatime (NRT) traffic types and specify corresponding maximum tolerable Latency figures.

Suggested Remedy
Harmonize with the appropriate 802.20 contributions on this topic.

Proposed Resolution Recommendation: **Rejected** Recommendation by Klerer

I do not support option 4. Also detailed remedy is not specified.

Resolution of Group Decision of Group:
Reason for Group's Decision/Resolution
Group's Action Items
Group's Notes
The QoS requirements in the document today e.g. DiffServ, flexible ARQ schemes, etc., can be used to create QoS profiles that meet the needs of the applications several years from now when .20 is first implemented. Furthermore, our PAR specifically says that we are designing a system optimized for IP-data transport. That means the 802.20 air interface will handle applications over TCP and UDP that in turn require low error rates and low latency. In addition the current requirements document requires a MAC layer RTT of <10ms, ensuring the air interface can support low latency traffic under appropriate RF conditions. We recommend that the group not adopt specific packet error rate and latency requirements that would be arbitrary and only restrict possible service definitions in specific deployments.

Suggested Remedy
Remove this section.

Proposed Resolution

Recommendation: **Accepted-Duplicate**

Recommendation by: Klerer

See comment to initial comment in this section

Reason for Recommendation

Resolution of Group

Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
The system shall support an arbitrary set variety of traffic classes that are defined by the system operator in terms of classic QoS attributes (e.g., data rate, latency, packet error rate, and delay variation), with different latency and packet error rates performance, in order to meet the end-user QoS requirements for the various applications, for example, as recommended by ITU [2]. The 802.20 standard shall support the ability to negotiate the traffic class associated with each packet flow, for each user, and for each mobile terminal. The 802.20 standard shall permit the set of traffic classes to be defined by the system operator in terms of classic QoS attributes (along with the range of values that:
- data rate (1 bps to maximum data rate supported by the MAC/PHY),
- latency (delivery delay) (10 ms to 10 seconds),
- packet error rate (after all corrections provided by the MAC/PHY layers) (10E-8 to 10E-1), and
- delay variation (jitter) (10 ms to 10 seconds).

Proposed Resolution: Rejected

Reason for Recommendation
We need to get to a realistic set of QoS classes that can realistically be supported. Data rate from 1bps to system capacity does not seem to be something that can easily be supported with a realistic number of streams.
Delete "Based on the classification of traffic in accordance with the QoS architecture as described in Section 4.4.1 [3,4,5,6], appropriate latency and packet error rate performance targets can be associated with each class."

To support the Expedited Forwarding traffic class, the latency should be as low as possible while the corresponding packet error rate should be low enough to support real-time conversational audio/video applications, and near zero for error intolerant, delay sensitive data applications such as Telnet, interactive games.

For the Best Effort traffic class, the packet error rate performance should comply with the requirement as stated in IEEE Std. 802-2001 [7], quoted as follows:

"The probability that a MAC Service Data Unit (MSDU) is not delivered correctly at an MSAP due to the operation of the Physical layer and the MAC protocol, SHALL be less than 8 x 10^-8 per octet of MSDU length."]"

Proposed Resolution

Recommended: Rejected

Reason for Recommendation

Prefer the solution in my comments

Resolution of Group

Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
Quantitative requirement is required (instead of qualitative).

Suggested Remedy

To support..... the requirement has no teeth.

Proposed Resolution

Accepted-Modified

Reason for Recommendation

I prefer option 3

Resolution of Group

Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Action Items

Option 2 provides description for only Best Effort data leaving Expedited Forwarding and Assured Forwarding traffic classes

Suggested Remedy

Include Expedited Forwarding traffic class description

Proposed Resolution

Rejected

Reason for Recommendation

I prefer option 3

Resolution of Group

Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Action Items
Define requirements for delay and data rate loss.

Suggested Remedy

Define "moderate"

Proposed Resolution

Recommendation: Rejected

Recommendation by Klerer

Reason for Recommendation

Consistent with RFC

Resolution of Group

Decision of Group:

See previous reply comment

Group’s Action Items

Group’s Notes
As described in the PAR, the 802.20 standard is designed to support various types of applications. In order to support these applications that could have very different requirements in error rate and latency tolerance optimally, it is important to specify the corresponding minimum requirements for different classes of traffic as targets for the specification of optimal PHY and MAC standards.

Similar requirements have been specified for other similar standards such as IEEE 802.16.3, IEEE Std. 802-2001 and 3GPP. Please refer to Contribution C802.20-04/55 for further information.

**Suggested Remedy**

As proposed in Contribution C802.20-04/55.

---

**Comment # 229**

**Comment by:** Ayman, Arak, Jim Naguib, Sutivong, Tomcik

**Type** Technical, Binding

**Page** 15 **Line** 1

**Comment**

DiffServ may work with interfacing to 3GPP networks, but the 3GPP2 approach is different. The 3GPP2 network sets the QoS for the Mobile based on call type and type of service the user has paid for. The network tells the RAN what it needs to deliver. Option 4 seems to be the closest to this, with ranges specified for different traffic classes. However, we need to fill in Section XXX.

**Suggested Remedy**

Define draft text for Section XXX. Define the "TBR" values of Option 4. Then add Text to Reflect 3GPP2 Approach to Qos to Section XXX.

---

**Proposed Resolution**

**Recommendation:** Rejected

**Reason for Recommendation**

**Resolution of Group**

**Decision of Group:**

**Reason for Group's Decision/Resolution**

**Group's Notes**

**Group's Action Items**

---

**Comment # 216**

**Comment by:** Anna Tee

**Type** Technical, Binding

**Page** 14 **Line** 16

**Comment**

As proposed in Contribution C802.20-04/55.
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Removal of section can only further confusion in defining QoS requirements and in evaluating the performance of QoS for various proposals. Need to have requirements to be able to specify different packet flows and different sets of attributes for different types of traffic.

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Reason for Recommendation

Resolution of Group Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

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Proposed Resolution

Recommendation: **Accepted**

Recommendation by: Naguib, Sutivong, Tomcik,
<table>
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**Comment by:**

**Suggested Remedy**

**Proposed Resolution**

**Resolution of Group Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**

- Agreed, the word "moderate" is vague

**Proposal Resolution**

**Resolution of Group**

**Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**

**Proposed Resolution**

**Resolution of Group**

**Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**
Removal of section can only further confusion in defining QoS requirements and in evaluating the performance of QoS for various proposals. Need to have requirements to be able to have specify different packet flows different sets of attributes for different types of traffic.

The QoS requirements in the document today eg. DiffServ, flexible ARQ schemes, etc., can be used to create QoS profiles that meet the needs of the applications several years from now when .20 is first implemented. Furthermore, our PAR specifically says that we are designing a system optimized for IP-data transport. That means the 802.20 air interface will handle applications over TCP and UDP that in turn require low error rates and low latency. In addition the current requirements document requires a MAC layer RTT of <10ms, ensuring the air interface can support low latency traffic under appropriate RF conditions. We recommend that the group not adopt specific packet error rate and latency requirements that would be arbitrary and only restrict possible service definitions in specific deployments.
The QoS requirements in the document today eg. DiffServ, flexible ARQ schemes, etc., can be used to create QoS profiles that meet the needs of the applications several years from now when .20 is first implemented. Furthermore, our PAR specifically says that we are designing a system optimized for IP-data transport. That means the 802.20 air interface will handle applications over TCP and UDP that in turn require low error rates and low latency. In addition the current requirements document requires a MAC layer RTT of <10ms, ensuring the air interface can support low latency traffic under appropriate RF conditions. We recommend that the group not adopt specific packet error rate and latency requirements that would be arbitrary and only restrict possible service definitions in specific deployments.

Suggested Remedy
Remove this section.

Proposed Resolution
Recommendation: Accepted-Duplicate
Recommendation by: Joanne Wilson, Mike Youssefmir

Proposed Resolution
Recommendation: Rejected
Recommendation by: Joanne Wilson, Mike Youssefmir

Propose to delete the section, per reply in record 155 to comment #6

Propose to delete the section, per reply in record 155 to comment #6
text such as in line 38 - "it may be useful to consider" is not recommended for use in a requirements document as it is quite useless.

Suggested Remedy
Delete option 2.

Proposed Resolution
Recommendation: **Rejected**

Resolution of Group
Reason for Recommendation
Our preference is to delete this entire section.

Resolution of Group
Decision of Group:
Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

---

In Option 3, line 4, missing "data rate,"

Suggested Remedy
insert "data rate," after "...with different"

Proposed Resolution
Recommendation: **Rejected**

Resolution of Group
Reason for Recommendation
disagree that "data rate" is missing in this text

Resolution of Group
Decision of Group:
Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
In Option 4, line 27, missing "data rate,"

Suggested Remedy
insert "data rate," after "...with different"

Proposed Resolution Recommendation: Rejected
Reason for Recommendation
Disagree that "data rate" is missing in this sentence

Resolution of Group Decision of Group:

Group's Notes
Group's Action Items

Propose to delete the section, per reply in record 155 to comment #6

Reason for Recommendation
Resolution of Group Decision of Group:

Group's Notes
Group's Action Items
The QoS requirements in the document today, e.g., DiffServ, flexible ARQ schemes, etc., can be used to create QoS profiles that meet the needs of the applications several years from now when .20 is first implemented. Furthermore, our PAR specifically says that we are designing a system optimized for IP-data transport. That means the 802.20 air interface will handle applications over TCP and UDP that in turn require low error rates and low latency. In addition, the current requirements document requires a MAC layer RTT of <10ms, ensuring the air interface can support low latency traffic under appropriate RF conditions. We recommend that the group not adopt specific packet error rate and latency requirements that would be arbitrary and only restrict possible service definitions in specific deployments.

Suggested Remedy
Remove this section.

Proposed Resolution Recommendation: Accepted-Duplicate Recommendation by Joanne Wilson
Same as reply in record 155 to comment #6

4 Options are specified. All but option 3 impose trade-off burdens in design that cannot be justified as hard limit in a mobile environment.

Suggested Remedy
Delete this section or retain option 3.

Proposed Resolution Recommendation: Accepted-Modified Recommendation by Joanne Wilson
Propose to delete the section, per reply in record 155 to comment #6
The system shall support an arbitrary set variety of traffic classes that are defined by the system operator in terms of classic QoS attributes (e.g., data rate, latency, packet error rate, and delay variation), with different latency and packet error rates performance, in order to meet the end-user QoS requirements for the various applications, for example, as recommended by ITU [2]. The 802.20 standard shall support the ability to negotiate the traffic class associated with each packet flow, for each user, and for each mobile terminal. The 802.20 standard shall permit the set of traffic classes to be defined by the system operator in terms of classic QoS attributes (along with the range of values that:
- data rate (1 bps to maximum data rate supported by the MAC/PHY),
- latency (delivery delay) (10 ms to 10 seconds),
- packet error rate (after all corrections provided by the MAC/PHY layers) (10E-8 to 10E-1), and
- delay variation (jitter) (10 ms to 10 seconds).

Proposed Resolution: **Rejected**

Recommendation by Joanne Wilson, Mike Youssefmir

Reason for Recommendation
This is not a requirement on the air interface, but is instead a requirement on the scheduler which is part of the implementation and is not within the scope of the standard.

Resolution of Group

Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
Delete "Based on the classification of traffic in accordance with the QoS architecture as described in Section 4.4.1 [3,4,5,6], appropriate latency and packet error rate performance targets can be associated with each class.

To support the Expedited Forwarding traffic class, the latency should be as low as possible while the corresponding packet error rate should be low enough to support real-time conversational audio/video applications, and near zero for error intolerant, delay sensitive data applications such as Telnet, interactive games.

For the Best Effort traffic class, the packet error rate performance should comply with the requirement as stated in IEEE Std. 802-2001 [7], quoted as follows:

"The probability that a MAC Service Data Unit (MSDU) is not delivered correctly at an MSAP due to the operation of the Physical layer and the MAC protocol, SHALL be less than 8 x 10^-8 per octet of MSDU length."

Recommended Resolution: **Rejected**

Reason for Recommendation: consequential, since accepting this comment required accepting comment #138 in record #169.
Comment # 179  
**Comment by:** Eshwar Pittampalli  
**Type:** Technical, Binding  
**Page:** 14  
**Line:** 22  
**Fig/Table#**  
**Section:** 4.1.7.1  

..in Section 4.4.1 “[3,4,5,6]...” not clear.

**Suggested Remedy**

**Need more explanation.**

**Proposed Resolution**

**Recommendation:** Rejected  
**Recommendation by:** Joanne Wilson, Mike Youssefmir

**Resolution of Group**

**Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Action Items**

---

Comment # 180  
**Comment by:** Eshwar Pittampalli  
**Type:** Technical, Binding  
**Page:** 14  
**Line:** 25  
**Fig/Table#**  
**Section:** 4.1.7.1  

"To support....." the requirement has no teeth.

**Suggested Remedy**

**Quantitative requirement is required (instead of qualitative).**

**Proposed Resolution**

**Recommendation:** Rejected  
**Recommendation by:** Joanne Wilson, Mike Youssefmir

**Resolution of Group**

**Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**
Option 2 provides description for only Best Effort data leaving Expedited Forwarding and Assured Forwarding traffic classes. Include Expedited Forwarding traffic class description.

Propose to delete the section, per reply in record 155 to comment #6. Recommendation: Rejected

"low delay, low data loss rate,..." does not provide quantitative measures for delay and data loss rate. Define requirements for delay and data rate loss.

Propose to delete the section, per reply in record 155 to comment #6. Recommendation: Rejected
Define "moderate"

Proposed Resolution: Rejected

Propose to delete the section, per reply in record 155 to comment #6

Reason for Recommendation

Resolution of Group: Decision of Group:

Reason for Group's Decision/Resolution

Group's Action Items

Comment # 183 Comment by: Eshwar Pittampalli

Comment Type: Technical, Binding Page 15 Line 19 Fig/Table#: Section 4.1.7.1

"..moderate delay, moderate data loss rate,..." ambiguous

Suggested Remedy

As proposed in Contribution C802.20-04/55.

Proposed Resolution: Rejected

Contribution C802.20-04/55 was incomplete with many TBRs. Plus, we still don't believe that this requirements document should be setting packet loss and latency requirements, particularly without a justification for doing so or an analysis of the impact and tradeoffs.

Reason for Recommendation

Resolution of Group: Decision of Group:

Reason for Group's Decision/Resolution

Group’s Notes

Group’s Action Items
DiffServ may work with interfacing to 3GPP networks, but the 3GPP2 approach is different. The 3GPP2 network sets the QoS for the Mobile based on call type and type of service the user has paid for. The network tells the RAN what it needs to deliver. Option 4 seems to be the closest to this, with ranges specified for different traffic classes. However, we need to fill in Section XXX.

Suggested Remedy

Define draft text for Section XXX. Define the "TBR" values of Option 4. Then add Text to Reflect 3GPP2 Approach to Qos to Section XXX.

Proposed Resolution: Accepted-Duplicate

Reason for Recommendation: Accepted-Duplicate

Resolution of Group: Accept-Duplicate

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

The QoS requirements in the document today eg. DiffServ, flexible ARQ schemes, etc., can be used to create QoS profiles that meet the needs of the applications several years from now when .20 is first implemented. Furthermore, our PAR specifically says that we are designing a system optimized for IP-data transport. That means the 802.20 air interface will handle applications over TCP and UDP that in turn require low error rates and low latency. In addition the current requirements document requires a MAC layer RTT of <10ms, ensuring the air interface can support low latency traffic under appropriate RF conditions. We recommend that the group not adopt specific packet error rate and latency requirements that would be arbitrary and only restrict possible service definitions in specific deployments.

Suggested Remedy

Delete this section.

Proposed Resolution: Rejected

Recommendation by Joanne Wilson, Mike Youssefmir

Reason for Recommendation

Remedy does not propose solution only that values are needed.

Resolution of Group

Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
The QoS requirements in the document today eg. DiffServ, flexible ARQ schemes, etc., can be used to create QoS profiles that meet the needs of the applications several years from now when .20 is first implemented. Furthermore, our PAR specifically says that we are designing a system optimized for IP-data transport. That means the 802.20 air interface will handle applications over TCP and UDP that in turn require low error rates and low latency. In addition the current requirements document requires a MAC layer RTT of <10ms, ensuring the air interface can support low latency traffic under appropriate RF conditions. We recommend that the group not adopt specific packet error rate and latency requirements that would be arbitrary and only restrict possible service definitions in specific deployments.

Suggested Remedy
Remove this section.

Proposed Resolution
Recommendation: **Accepted-Duplicate**
Recommendation by Joanne Wilson

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

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The QoS requirements in the document today eg. DiffServ, flexible ARQ schemes, etc., can be used to create QoS profiles that meet the needs of the applications several years from now when .20 is first implemented. Furthermore, our PAR specifically says that we are designing a system optimized for IP-data transport. That means the 802.20 air interface will handle applications over TCP and UDP that in turn require low error rates and low latency. In addition the current requirements document requires a MAC layer RTT of <10ms, ensuring the air interface can support low latency traffic under appropriate RF conditions. We recommend that the group not adopt specific packet error rate and latency requirements that would be arbitrary and only restrict possible service definitions in specific deployments.

Suggested Remedy
Remove this section.

Proposed Resolution
Recommendation: **Superceded**
Recommendation by Lalit Kotecha

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
Comment # 39  Comment by:  Dan Gal

Comment Type Technical, Non-binding  Page 14  Line 19  Fig/Table#  Section 4.1.7.1

Suggested Remedy

add an important attribute of traffic classes - data rate.

Proposed Resolution

Recommendation: Accepted

Recommendation by Lalit Kotecha

Resolution of Group

Decision of Group:

Proposed Resolution

Recommendation: Rejected

Recommendation by Lalit Kotecha

Resolution of Group

Decision of Group:

Proposed Resolution

Reason for Recommendation

Resolution of Group

Decision of Group:

Proposed Resolution
The term "Interconnectivity at the PHY/MAC" is not clear.

Suggested Remedy
Proposed change of the entire sentence in line 6: "The AI shall support advanced antenna techniques, at the Base Station and/or Mobile Station, so as to achieve higher effective data rates, ..." etc.

Proposed Resolution Recommendation: Accepted Recommendation by Klerer

"Interconnectivity at the PHY/MAC.." ambiguous

Suggested Remedy
Define what is "Interconnectivity at the PHY/MAC?"

Proposed Resolution Recommendation: Superceded Recommendation by Klerer
The term "Interconnectivity at the PHY/MAC" is not clear.

Proposed change of the entire sentence in line 6: "The AI shall support advanced antenna techniques, at the Base Station and/or Mobile Station, so as to achieve higher effective data rates, ..." etc.

Proposed Resolution
Recommendation: Accepted
Recommendation by: Joanne Wilson

Proposed Resolution
Recommendation: Accepted
Recommendation by: Naguib, Sutivong, Tomcik,

Resolution of Group
Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
Define what is "Interconnectivity at the PHY/MAC?"

Proposed Resolution: **Rejected**
Recommendation by: Joanne Wilson
Proposal to accept the wording in record #180 reply to comment #50

Reason for Recommendation:
no text remedy proposed -- only a question for consideration

Resolution of Group:
Decision of Group:

Group’s Notes

Group’s Action Items

Remove reference to the "MIMO" Example. The text in C802.20-04-44 is all that needs to be said.

Proposed Resolution: **Accepted-Modified**
Recommendation by: Joanne Wilson
Delete the sentence "As an example, MIMO."

Reason for Recommendation:
see reply in record 181 to comment #140

Resolution of Group:
Decision of Group:

Group’s Notes

Group’s Action Items
Proposed Resolution

Replace text for the section with: "The base station should provide antenna diversity, but the standard shall neither require nor preclude the use of antenna diversity at the mobile stations."

Reason for Recommendation

Clarified text

Resolution of Group Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

Replace the word "should" with "may"

Proposed Resolution

Superceded

Recommendation by Klerer

Resolution of Group

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
The two parts of the sentence - starting at line 10 - may appear to be contradicting each other.

**Suggested Remedy**
Replace the word "should" with "may"

**Proposed Resolution**  
Recommendation: **Rejected**  
Recommendation by: Joanne Wilson

**Reason for Recommendation**
The two parts of the sentence are not contradictory. The statement is intended to be a recommendation, but not a mandatory requirement.
This section is lacking in RF requirements. It is suggested that all RF requirements be placed in section 4.2.1 and its new sub-section as proposed below.

Suggested Remedy
1. Change the heading of 4.2.1 to: “RF Requirements”
2. Insert new subsection 4.2.1.1 - "General"
3. Insert new subsection 4.2.1.2 - "Radio Transmitter"
4. Insert new subsection 4.2.1.3 - "Radio Receiver"

Proposed text for section 4.2.1.1 - General

"The RF part of the IEEE 802.20 physical layer shall be specified in a manner and level of detail consistent with similar public wireless land mobile communication service standards. Minimum performance specification shall be defined in the standard, such that equipment certification tests could be developed and be used to verify that multi-vendor compliant equipment would interoperate as well as meet applicable regulatory rules and coexistence requirements. Band-classes should be defined for specific global and local frequency bands of interest. These band-classes should define the channelization of the band along with specific RF characteristics such as transmitter maximum power, receiver sensitivity,

Proposed Resolution

This is a meta-requirement on what each proposal needs to supply in the way of documentation, but I can live with that.
While we are open to adding RF requirements to this section, this specific proposal requires more detailed review and discussion. To move forward, we will provide any additional inputs at the July plenary.
This section is lacking in RF requirements. It is suggested that all RF requirements be placed in section 4.2.1 and its new sub-section as proposed below.

Suggested Remedy
1. Change the heading of 4.2.1 to: "RF Requirements"
2. Insert new subsection 4.2.1.1 - "General"
3. Insert new subsection 4.2.1.2 - "Radio Transmitter"
4. Insert new subsection 4.2.1.3 - "Radio Receiver"

Proposed text for section 4.2.1.1 - General

"The RF part of the IEEE 802.20 physical layer shall be specified in a manner and level of detail consistent with similar public wireless land mobile communication service standards. Minimum performance specification shall be defined in the standard, such that equipment certification tests could be developed and be used to verify that multi-vendor compliant equipment would interoperate as well as meet applicable regulatory rules and coexistence requirements. Band-classes should be defined for specific global and local frequency bands of interest. These band-classes should define the channelization of the band along with specific RF characteristics such as transmitter maximum power, receiver sensitivity,

Proposed Resolution Recommendation: **Rejected**

Reason for Recommendation
RF requirements should not be included in this document because of their dependency on the specific bands of operation, which are not addressed in this document. Additionally, since no text is proposed this comment is incomplete, creating instead of remedying a problem in the document.

Resolution of Group Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
This section is lacking in RF requirements. It is suggested that all RF requirements be placed in section 4.2.1 and its new sub-section as proposed below.

Suggested Remedy
1. Change the heading of 4.2.1 to: "RF Requirements"
2. Insert new subsection 4.2.1.1 - "General"
3. Insert new subsection 4.2.1.2 - "Radio Transmitter"
4. Insert new subsection 4.2.1.3 - "Radio Receiver"

Proposed text for section 4.2.1.1 - General

"The RF part of the IEEE 802.20 physical layer shall be specified in a manner and level of detail consistent with similar public wireless land mobile communication service standards. Minimum performance specification shall be defined in the standard, such that equipment certification tests could be developed and be used to verify that multi-vendor compliant equipment would interoperate as well as meet applicable regulatory rules and coexistence requirements. Band-classes should be defined for specific global and local frequency bands of interest. These band-classes should define the channelization of the band along with specific RF characteristics such as transmitter maximum power, receiver sensitivity,

Proposed Resolution: Accepted
Recommendation by Lalit Kotecha

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items
Proposed Resolution: **Accepted**

Relevant references or information need to be provided to specify the blocking and selectivity requirements for 802.20 subscriber terminals.

Proposed Resolution: **Rejected**

Specific references are not needed, particularly since "best commercial practices" may improve over time.
As written, the requirement seems to be an equipment requirement and an implementation issue. Not an air interface requirement. Contribution C802.20-04-44 has consensus text from a number of individuals. It can serve as a good starting point for this section.

Suggested Remedy
Adopt 4.2.1 from C802.20-04.44

Proposed Resolution  Recommendation: Rejected  Recommendation by  Joanne Wilson

Reason for Recommendation
The proposed text is inappropriate for a requirements document, which is not a equipment specification. Additionally, much of the material is of a tutorial (text book) nature which is also inappropriate for a requirements document.

Resolution of Group  Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

Inadequate detail of Power Control requirements. Need more specific requirements.

Suggested Remedy
Add the following text in line 28:
" Both base station and mobile station should employ transmit power control mechanisms and exchange control and monitoring information required to achieve optimal performance while keeping the environmental noise floor as low as possible on the one hand and helping the MS preserve its battery power. The number of transmit Power levels as well as the associated control messaging should be optimized for cost effectiveness and performance. Mobile stations’ operating states should include sleep-mode and in general should minimize their idle communications to the minimum. "

Proposed Resolution  Recommendation: Accepted  Recommendation by  Klerer

Reason for Recommendation
Resolution of Group  Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
Terms are not defined, nor are they requirements for a system that meets the 802.20 requirements. They may be techniques used by particular proposals, but the real requirements are already described elsewhere.

**Suggested Remedy**

Link adaptation shall be used by the AI for increasing spectral efficiency, data rate, and cell coverage reliability. The AI shall support adaptive bandwidth allocation, and adaptive power allocation. The system will have adaptive modulation and coding in both the uplink and the downlink.

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<th>Doug Knisely</th>
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Proposed Resolution: **Accepted**

**Comment # 189**

Comment by: Eshwar Pittampalli

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"..adaptive bandwidth allocation.." not clear

**Suggested Remedy**

Explain what is "adaptive bandwidth allocation"?

Proposed Resolution: **Superceded**

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</table>
Replace the word "will" on line 26 with "shall"

This section doesn't belong in this document. Either delete or make it informative. We have approved spectral efficiencies, data rates, etc. The requirements document should not dictate what tools to use to achieve these.

Delete Section or remove requirements and preserve as in informative section.
Use of the word "will" is not appropriate. Suggest the following remedy; Comment 190 has the same proposed resolution.

Link adaptation may be used by the AI for increasing spectral efficiency, data rate, and cell coverage reliability. The 802.20 AI may use adaptive modulation and coding schemes in both the uplink and the downlink.

This section should be worded to be informative rather than specifying requirements.
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</table>
Link adaptation shall be used by the AI for increasing spectral efficiency, data rate, and cell coverage reliability. The AI shall support adaptive bandwidth allocation, and adaptive power allocation. The system will have adaptive modulation and coding in both the uplink and the downlink.

Suggested Remedy
Link adaptation shall be used by the AI for increasing spectral efficiency, data rate, and cell coverage reliability. The AI shall support adaptive bandwidth allocation, and adaptive power allocation. The system will have adaptive modulation and coding in both the uplink and the downlink.

Proposed Resolution
Link adaptation shall be used by the AI for increasing spectral efficiency, data rate, and cell coverage reliability. The AI shall support adaptive bandwidth allocation, and adaptive power allocation. The system will have adaptive modulation and coding in both the uplink and the downlink.

Reason for Recommendation
agree that adaptive bandwidth allocation and adaptive power allocation are design techniques, not performance requirements. Also changed the subsequent paragraph to be normative instead of informative.

Resolution of Group
Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

Comment # 189 Comment by: Eshwar Pittampalli
Comment Type Technical, Binding Page 17 Line 25 Fig/Table# Section 4.2.2
"..adaptive bandwidth allocation.." not clear

Suggested Remedy
Explain what is "adaptive bandwidth allocation"?

Proposed Resolution
delete sentence

Reason for Recommendation
see reply in record #194 to comment #150

Resolution of Group
Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
Sentences starting on lines 25 and 26 are contradicting each other.

Suggested Remedy
Replace the word "will" on line 26 with "shall"

Proposed Resolution Recommendation: **Accepted-Modified**
Joanne Wilson
see reply in record #194 to comment #150

Proposed Resolution Recommendation by
see reply in record #194 to comment #150

Resolution of Group Decision of Group:

This section doesn't belong in this document. Either delete or make it informative. We have approved spectral efficiencies, data rates, etc. The requirements document should not dictate what tools to use to achieve these.

Suggested Remedy
Delete Section or remove requirements and preserve as in informative section.
Inadequate detail of Power Control requirements. Need more specific requirements.

Suggested Remedy
Add the following text in line 28:
"Both base station and mobile station should employ transmit power control mechanisms and exchange control and monitoring information required to achieve optimal performance while keeping the environmental noise floor as low as possible on the one hand and helping the MS preserve its battery power. The number of transmit Power levels as well as the associated control messaging should be optimized for cost effectiveness and performance. Mobile stations' operating states should include sleep-mode and in general should minimize their idle communications to the minimum."

Proposed Resolution
"Both base station and mobile station should employ transmit power control mechanisms and exchange control and monitoring information required to achieve optimal performance while keeping the environmental noise floor as low as possible on the one hand and helping the MS preserve its battery power. The number of transmit Power levels as well as the associated control messaging should be optimized for cost effectiveness and performance. Mobile stations' operating states should include sleep-mode and in general should minimize their idle communications to the minimum."

Reason for Recommendation
Strikeout part of the text needs to be covered in addressing power save requirement in a separate section in requirements document. This helps separating "power control" and "power save" requirements.
Comment # 289  
Type: Technical, Binding  
Page 18  
Line 12  
Fig/Table#:  
Section: 4.2.3

Resolution of Group: 
Reason for Group’s Decision/Resolution:

Proposed Resolution:  
Recommendation: Rejected  
Recommendation by: Naguib, Sutivong, Tomcik

Adopt Option 2.

Reason for Recommendation:
Option 2 is preferable to the recommenders; while 5 microsecond delay spread is the minimum that a proposal should be able to handle, proposers should plan that actual delay spreads in a mobile environment can be much larger.

Resolution of Group: 
Decision of Group: 
Reason for Group’s Decision/Resolution:

Group’s Action Items:

Comment # 59  
Type: Technical, Binding  
Page 17  
Line 16  
Fig/Table#:  
Section: 4.2.3

Resolution of Group: 
Reason for Group’s Decision/Resolution:

Proposed Resolution:  
Recommendation: Superceded  
Recommendation by: Anna Tee

Adopt Option 3.

Reason for Recommendation:
With the other requirements defined in the individual sections of the SRD, it should be sufficiently clear that the system - including base stations' and mobile terminals' performance should meet all those requirements. This section is supposed to specify the type of channel environments under which the system needs to operate.

Resolution of Group: 
Decision of Group: 
Reason for Group’s Decision/Resolution:

Group’s Notes

Group’s Action Items
Comment # 95  Comment by:

Comment Type Technical, Binding  Page 17  Line 29  Fig/Table#  Section 4.2.3

Suggested Remedy

Proposed Resolution Recommendation: Rejected Recommendation by Anna Tee
Adopt option 3 as is.

Reason for Recommendation
The last sentence is a requirement to ensure that an active call will not be dropped when the user walks into a building from the outdoor, and vice versa.

Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

Comment # 7  Comment by: Todd Chauvin

Comment Type Technical, Binding  Page 17  Line 29  Fig/Table#  Section 4.2.3
Option 3 is simple, straightforward, and well defined.

Suggested Remedy
Adopt Option 3

Proposed Resolution Recommendation: Accepted-Modified Recommendation by Klerer
See modification in my comment

Reason for Recommendation
Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
Option 3 is simple, straightforward, and well defined.

Accept Option 3

Proposed Resolution

Reason for Recommendation

Resolution of Group

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

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Option 1: Page 18, line 4 - the "(TBR)" needs to be defined or else discard option-1 entirely.

Discard option 1.

Proposed Resolution

Reason for Recommendation

Resolution of Group

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
All current three options need improvement. Add Option 4.

Suggested Remedy

Proposed Option 4:
"Mobile stations shall perform well (quantitative requirements should be specified in the 802.20 standard) under all mobility modes; from pedestrian to 250 Km/hr vehicular speed (as defined in the 802.20 PAR). Key performance attributes that affect the user experience such as data rates, fading, loss of session, call disruption, inability to get service altogether should be kept to an unnoticeable degradation level. This requirement should apply to both outdoor, indoor and outdoor (BS) to indoor (MS) operations at delay spreads of 5 micro-seconds or greater."

Proposed Resolution: Rejected
I still prefer option 3

Reason for Recommendation

Resolution of Group: Rejected
Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Action Items

Suggested Remedy
Support Option 2 for “Performance under Mobility and Delay Spread.”

Proposed Resolution: Accepted

Reason for Recommendation

Resolution of Group: Accepted
Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
Option 3 is simple, straightforward, and well defined.

Suggested Remedy
Adopt Option 3

Proposed Resolution

Option 3 is simple, straightforward, and well defined.

Comment # 81  Comment by: Marc Goldburg  Page 17  Line 29  Fig/Table#  Section 4.2.3

Comment Type  Technical, Binding  Page 17  Line 29  Fig/Table#  Section 4.2.3

Resolution of Group
Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items

Comment # 87  Comment by: Kazuhiro Murakami  Page 19  Line 8  Fig/Table#  Section 4.2.3

"Option 3 is simple, straightforward, and well defined."

Suggested Remedy
Adopt Option 3

Proposed Resolution

Option 3 is simple, straightforward, and well defined.

Comment # 87  Comment by: Kazuhiro Murakami  Page 19  Line 8  Fig/Table#  Section 4.2.3

Resolution of Group
Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items
Comment # 191  
Comment by: Eshwar Pittampalli

Comment
Technical, Binding  
Page 18  
Line 1  
Section 4.2.3

“The system is expected to work in dense....“ Not clear .. And also has some redundant information

Suggested Remedy
Replace with "The system shall work in urban, suburban and rural areas..."

Proposed Resolution  
Recommendation: Rejected  
Recommendation by: Klerer

Use option 3

Reason for Recommendation

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

Comment # 193  
Comment by: Eshwar Pittampalli

Comment
Technical, Binding  
Page 18  
Line 18  
Section 4.2.3

“The system shall NOT...” Negative comment.

Suggested Remedy
Replace with "The system shall support both indoor and outdoor scenarios."

Proposed Resolution  
Recommendation: Rejected  
Recommendation by: Klerer

see my comment on this section.

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
“The system shall support 95%...” not clear

Suggested Remedy
Replace with "The system shall support at least 95%..."

Proposed Resolution
Recommendation: **Rejected**

Reason for Recommendation
see my comment on this section

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

---

5 Microseconds seems to be a reasonable minimum requirement. Option 2 seems to be reasonable for the section.

Suggested Remedy
Adopt Option 2 with a minor modification as follows: ...system shall work...

Proposed Resolution
Recommendation: **Accepted**

Reason for Recommendation
Prefer option 3 but can live with option 2

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
Option 3 is simple, straightforward, and well defined.

Suggested Remedy
Adopt Option 3

Proposed Resolution
Recommendation: Accepted-Duplicate
Recommendation by: Klerer

Reason for Recommendation
Resolution of Group: Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

Comment # 282 Comment by: Michael Youssefm

Option 3 is simple, straightforward, and well defined.

Suggested Remedy
Adopt Option 3

Proposed Resolution
Recommendation: Accepted-Duplicate
Recommendation by: Klerer

Reason for Recommendation
Resolution of Group: Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
System must work under the various environments of a Macro/Micro/pico cellular system.

Suggested Remedy
Pick option 3

Proposed Resolution
Recommendation: Accepted
Recommendation by: Klerer

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution

Group's Action Items

The requirement for minimum delay spread needs to be specified

Proposed Resolution
Recommendation: Rejected
Recommendation by: Naguib, Sutivong, Tomcik,

Option 2 is preferable. Some sort of minimum requirement for delay spread should be specified.

Reason for Recommendation

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
Comment # 17  
Comment by:  
Comment  
Type Technical, Binding  
Page 17  
Line 29  
Fig/Table#  
Section 4.2.3  
Suggested Remedy  
Proposed Resolution  
Recommendation: Rejected-Duplicate  
Recommendation by Naguib, Sutivong, Tomcik,  
Duplicate with Comment 7  
Reason for Recommendation  
Resolution of Group  
Decision of Group:  
Reason for Group’s Decision/Resolution  
Group’s Notes  
Group’s Action Items  

Comment # 74  
Comment by:  
Comment  
Type Technical, Binding  
Page ?  
Line 18  
Fig/Table#  
Section 4.2.3  
Suggested Remedy  
Proposed Resolution  
Recommendation: Accepted-Modified  
Recommendation by Rao YallapraNaguib, Sutivong,  
Modify the first part of line 8 (for Option 2) as follows:  

"The system shall work in dense...."

Reason for Recommendation  
Resolution of Group  
Decision of Group:  
Reason for Group’s Decision/Resolution  
Group’s Notes  
Group’s Action Items
Comment # 81  
Type: Technical, Binding  
Page 17  
Line 29  
Fig/Table#:  
Section 4.2.3  

Suggested Remedy

Proposed Resolution

The requirement for minimum delay spread needs to be specified

Reason for Recommendation

Resolution of Group

Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

Comment # 87  
Type: Technical, Binding  
Page 19  
Line 8  
Fig/Table#:  
Section 4.2.3  

Suggested Remedy

Proposed Resolution

The requirement for minimum delay spread needs specification

Reason for Recommendation

Resolution of Group

Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

Recommendation by  
Naguib, Sutivong, Tomcik,
Comment # 95
Comment by:
Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

Comment # 191
Comment by:
Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

Comment # 193
Comment by:
Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
The requirement for minimum delay spread needs to be specified. Option 2 does this well.

The requirement for minimum delay spread needs to be specified
Option 3 is simple, straightforward, and well defined.

Suggested Remedy
Adopt Option 3

Proposed Resolution
Accepted-Modified

Recommendation by: Joanne Wilson

See reply in record #206 to comment #95

Reason for Recommendation
Resolution of Group: Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

Comment # 7
Comment by: Todd Chauvin
Page 17 Line 29 Fig/Table# Section 4.2.3

Comment Type Technical, Binding

Comment # 17
Comment by: John Chen
Page 17 Line 29 Fig/Table# Section 4.2.3

Comment Type Technical, Binding

Option 3 is simple, straightforward, and well defined.

Suggested Remedy
Adopt Option 3

Proposed Resolution
Accepted-Modified

Recommendation by: Joanne Wilson

See reply in record #206 to comment #95

Reason for Recommendation
Resolution of Group: Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
4.2.3 Option 1: Page 18, line 4 - the "(TBR)" needs to be defined or else discard option-1 entirely.

Suggested Remedy

**Proposed Resolution**

<table>
<thead>
<tr>
<th>Recommendation:</th>
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<tbody>
<tr>
<td>Recommendation by</td>
<td>Joanne Wilson</td>
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**Reason for Recommendation**

**Resolution of Group**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**

Comment # 59 Comment by: Dan Gal  
Type Technical, Binding  Page 17  Line 16  Fig/Table#  Section 4.2.3

All current three options need improvement. Add Option 4.

Suggested Remedy

**Proposed Option 4:**

"Mobile stations shall perform well (quantitative requirements should be specified in the 802.20 standard) under all mobility modes; from pedestrian to 250 Km/hr vehicular speed (as defined in the 802.20 PAR). Key performance attributes that affect the user experience such as data rates, fading, loss of session, call disruption, inability to get service altogether should be kept to an unnoticeable degradation level. This requirement should apply to both outdoor, indoor and outdoor (BS) to indoor (MS) operations at delay spreads of 5 micro-seconds or greater."

**Proposed Resolution**

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<td>Joanne Wilson</td>
</tr>
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</table>

**Reason for Recommendation**

**Resolution of Group**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**
Support Option 2 for "Performance under Mobility and Delay Spread."

Proposed Resolution
Recommendation: Rejected
Recommendation by: Joanne Wilson
See reply in record #206 to comment #95

Option 3 is simple, straightforward, and well defined.

Proposed Resolution
Recommendation: Accepted-Modified
Recommendation by: Joanne Wilson
See reply in record #206 to comment #95
"Option 3 is simple, straightforward, and well defined."

Suggested Remedy
Adopt Option 3

Proposed Resolution
Recommendation: Accepted-Modified
Recommendation by: Joanne Wilson

See reply in record #206 to comment #95

Reason for Recommendation
See reply in record #206 to comment #95

Group’s Notes

Comment # 95
Comment by: Mark Klerer

Comment Type: Technical, Binding
Page 17
Line 29
Fig/Table# 4.2.3

Three options are specified. I prefer option 3 with the last sentence deleted.

The last sentence states "The system shall NOT be designed for indoor only and outdoor only scenarios." If the system meets the requirements it does not matter what it was designed for.

Suggested Remedy
The text should read: "The system shall work in dense urban, suburban, rural outdoor-indoor, pedestrian and vehicular environments and the relevant channel models shall be applicable."

Proposed Resolution
Recommendation: Accepted
Recommendation by: Joanne Wilson

Reason for Recommendation
Agree. If the first requirement is met, the second one is irrelevant

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
Comment # 191  Comment by: Eshwar Pittampalli
Comment Type: Technical, Binding  Page 18  Line 1  Fig/Table#:  Section 4.2.3

"The system is expected to work in dense...." Not clear .. And also has some redundant information

Suggested Remedy
Replace with "The system shall work in urban, suburban and rural areas..."

Proposed Resolution: Accepted-Modified  Recommendation by: Joanne Wilson
See reply in record #206 to comment #95

Reason for Recommendation
See reply in record #206 to comment #95

Resolution of Group: Decision of Group:

Comment # 192  Comment by: Eshwar Pittampalli
Comment Type: Technical, Binding  Page 18  Line 2  Fig/Table#:  Section 4.2.3

"...relevant channel models..." association of environments with channel models is missing

Suggested Remedy
Specify association of environments with the appropriate channel models.

Proposed Resolution: Accepted-Modified  Recommendation by: Joanne Wilson
See reply in record #206 to comment #95

Reason for Recommendation
See reply in record #206 to comment #95

Resolution of Group: Decision of Group:

Group's Notes
Group’s Action Items
Comment # 193  Comment by: Eshwar Pittampalli

Comment Type Technical, Binding Page 18 Line 18 Fig/Table# Section 4.2.3

"The system shall NOT..." Negative comment.

Suggested Remedy
Replace with "The system shall support both indoor and outdoor scenarios."

Proposed Resolution Recommendation: Accepted-Modified Recommendation by Joanne Wilson
See reply in record #206 to comment #95

Reason for Recommendation
See reply in record #206 to comment #95

Resolution of Group Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items

Comment # 194  Comment by: Eshwar Pittampalli

Comment Type Technical, Binding Page 18 Line 3 Fig/Table# 4 Section 4.2.3

"The system shall support 95%....." not clear

Suggested Remedy
Replace with "The system shall support at least 95%..."

Proposed Resolution Recommendation: Rejected Recommendation by Joanne Wilson
See reply to record 201 to comment #58

Reason for Recommendation
See reply to record 201 to comment #58

Resolution of Group Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items
Comment # 195  Comment by: Eshwar Pittampalli
Same as comment 35

Suggested Remedy
Same as comment 35

Proposed Resolution
Recommendation: Rejected
Recommendation by: Joanne Wilson

Resolution of Group
Decision of Group:

Reason for Recommendation
Comment 35 is not related to section 4.2.3

Group’s Notes

Comment # 235  Comment by: Ayman, Arak, Jim Naguib, Sutivong, Tomcik
5 Microseconds seems to be a reasonable minimum requirement. Option 2 seems to be reasonable for the section.

Suggested Remedy
Adopt Option 2 with a minor modification as follows: ...system shall work...

Proposed Resolution
Recommendation: Rejected
Recommendation by: Joanne Wilson

See reply in record #206 to comment #95

Resolution of Group
Decision of Group:

Reason for Recommendation
See reply in record #206 to comment #95

Group’s Notes

Group’s Action Items
Option 3 is simple, straightforward, and well defined.

Adopt Option 3

Proposed Resolution

Suggested Remedy

Acceptance: Accepted-Modified

Resolution of Group

Reason for Recommendation

Group's Notes

Group's Action Items

Comment # 272

Comment by: Joanne Wilson

Comment Type: Technical, Binding

Page 17

Line 29

Section 4.2.3

Comment # 282

Comment by: Michael Youssefmir

Comment Type: Technical, Binding

Page 17

Line 29

Section 4.2.3
System must work under the various environments of a Macro/Micro/pico cellular system.

Suggested Remedy
Pick option 3

Proposed Resolution
Recommendation: Accepted-Modified
Recommendation by: Joanne Wilson
See reply in record #206 to comment #95

Reason for Recommendation
See reply in record #206 to comment #95

Resolution of Group: Decision of Group:

Group’s Action Items

Comment # 289
Comment by: Jim Ragsdale
Type: Technical, Binding
Page 18, Line 12, Fig/Table# 18, Section 4.2.3

Option 3 is simple, straightforward, and well defined.

Suggested Remedy
Adopt Option 3

Proposed Resolution
Recommendation: Superceded
Recommendation by: Lalit Kotecha

Reason for Recommendation

Resolution of Group: Decision of Group:

Group’s Notes

Group’s Action Items
Suggested Remedy

<table>
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<tr>
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<th>Recommendation: Accepted</th>
<th>Recommendation by Lalit Kotecha</th>
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Option 1: Page 18, line 4 - the "(TBR)" needs to be defined or else discard option-1 entirely.

Resolution of Group

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

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Suggested Remedy

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<td>&quot;Mobile stations shall perform well (quantitative requirements should be specified in the 802.20 standard) under all mobility modes; from pedestrian to 250 Km/hr vehicular speed (as defined in the 802.20 PAR). Key performance attributes that affect the user experience such as data rates, fading, loss of session, call disruption, inability to get service altogether should be kept to an unnoticeable degradation level. This requirement should apply to both outdoor, indoor and outdoor (BS) to indoor (MS) operations at delay spreads of 5 micro-seconds or greater.&quot;</td>
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<th>Recommendation: Accepted-Modified</th>
<th>Recommendation by Lalit Kotecha</th>
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"Mobile stations/Base Stations shall perform well (quantitative requirements should be specified in the 802.20 standard) under all mobility modes; from pedestrian to 250 Km/hr vehicular speed (as defined in the 802.20 PAR). Key performance attributes that affect the user experience such as data rates, fading, loss of session, call disruption, inability to get service altogether should be kept to an unnoticeable degradation level. This requirement should apply to both outdoor, indoor and outdoor (BS) to indoor (MS) operations at delay spreads of 5 micro-seconds or greater."
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<th>Line</th>
<th>Fig/Table#</th>
<th>Section</th>
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<td>81</td>
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<td>Comment #7</td>
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<td>Proposed Resolution: <strong>Superceded</strong></td>
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<td>18</td>
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<tr>
<td>Comment</td>
<td></td>
<td>Add a clarification on implementation</td>
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<tr>
<td>Suggested Remedy</td>
<td></td>
<td>Add on line 19: &quot;Implementations may support either mode (FDD or TDD) or both.&quot;</td>
<td></td>
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<tr>
<td>Comment #7</td>
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<table>
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<td>Group's Action Items</td>
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<tr>
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</table>
"The 802.20 standard shall support..." This sentence is not clear in terms of whether the standard should have any coupling between FDD and TDD. Are they mutually exclusive? If there is any coupling, is it close coupling or loose coupling?

Suggested Remedy
Clarification is needed.

Proposed Resolution
Recommendation: **Superceded**
Recommendation by: Klerer

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

---

Section 4.1.3 already specifies the AI requirements on FDD and TDD frequency arrangements. Remove Section 4.2.4

Proposed Resolution
Recommendation: **Rejected**
Recommendation by: Naguib, Sutivong, Tomcik,

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
Section 4.1.3 already specifies the AI requirements on FDD and TDD frequency arrangements. Remove Section 4.2.4.

We cannot establish requirements on the implementations of the standard. This is outside of the scope of this document and of 802.20 WG.
"The 802.20 standard shall support..." This sentence is not clear in terms of whether the standard should have any coupling between FDD and TDD. Are they mutually exclusive? If there is any coupling, is it close coupling or loose coupling?

Suggested Remedy
Clarification is needed.

Proposed Resolution
Recommendation: Rejected

Reason for Recommendation
The text is clear. The standard shall have both a TDD and an FDD mode. That's the only requirement established in this section.

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

---

This is stated elsewhere (Section 4.1.3). It is a duplicated requirement.

Proposed Resolution
Recommendation: Rejected

Reason for Recommendation
They are consistent. The requirement appropriately appears as both a functional requirement and as a PHY/RF requirement.

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
Add a clarification on implementation

Add on line 19: "Implementations may support either mode (FDD or TDD) or both."

Proposed Resolution

Recommendation: Rejected

Recommendation by Lalit Kotecha

Reason for Recommendation

This requirement needs to be separately defined for BS as well as MS. e.g. BS will support FDD or TDD as mandatory mode and optionally may support operating at FDD and TDD mode at the same time. Similar requirements for MS is required.

Resolution of Group

Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

Delete Section.

Proposed Resolution

Recommendation: Accepted

Recommendation by Lalit Kotecha

Reason for Recommendation

Resolution of Group

Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
"Synchronization" between MT and BS is not defined. It does not seem to be required; a technology proposal that meets all other requirements but does not synchronize between MT and BS would be acceptable.

Second sentence is a "non-requirement." We don't need to specify all the possible non-requirements.

Delete all text in 4.2.5.

Proposed Resolution
delete section 4.2.5

Recommendation: Accepted

Recommendation by Joanne Wilson, Mike Youssefmir
This section implies some near real-time measurement on the physical link which are essential for link adaptation or handoff purposes. The section should be kept with modifications to the text as proposed in comment # 224.

Resolution of Group
Decision of Group:
Reason for Resolution
Group's Notes
Group's Action Items

Change "network" to "Base Station"

Proposed Resolution
Recommendation: Accepted
Recommendation by: Klerer

Reason for Recommendation
Resolution of Group
Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items
The sentence "The Physical layer provides..." is vague and not using proper engineering terms.

Suggested Remedy

Change the entire sentence as follows: The physical layer measurements shall include, but not limited to: signal strength and signal quality (C/I) measurements and reporting to the opposite side of the air link, measure neighboring cells' signals and monitor their broadcast channels (if applicable), measure and report error rates, measure and report access delays and call interruption, measure and report effective throughput (good-put), provide any other measurement needed for handoff support, maintenance and quality of service monitoring. Measurements results may need to be sent out at prescribed (in the 802.20 standard) a frequency as well as stored internally for offline processing.

Proposed Resolution

Use the following text:

The physical layer measurements shall include the measurement of such parameters as are important and relevant to the particular RF technology employed. Such measurements and associated reports may include: signal strength and signal quality (C/I) measurements and reporting to the opposite side of the air link, measures of neighboring cells' signal strength and monitoring of their broadcast channels (if applicable), measures and reports of error rates, measures and reports of...
We suggest modifying the last sentence as follows:

....sent out at prescribed ( ) periodicities as well as.......
The term "network" is inappropriate here.

Change "network" to "Base Station"

Proposed Resolution: Accepted

Resolution of Group: Decision of Group:

Reason for Recommendation:
agree that base station is the appropriate entity

The sentence "The Physical layer provides..." is vague and not using proper engineering terms.

Chaneg the entire sentence as follows" The physical layer measurements shall include, but not limited to: signal strength and signal quality (C/I) measurements and reporting to the opposite side of the air link, measure neiboring cells’ signals and monitor their broadcast channels (if applicable), measure and report error rates, measure and report access delays and call interruption, measure and report effective throughput (good-put), provide any other measurement needed for handoff support, maintenance and quality of service monitoring. Measurements results may need to be sent out at prescribed (in the 802.20 standard) a frequency as well as stored internally for offline processing. 

Proposed Resolution: Rejected

Recommendation by Joanne Wilson, Mike Youssefmir

delete section 4.2.6

Reason for Recommendation:
Should not provide an exhaustive list of the measurements to be taken. This is subsumed by the OA&M requirements.
Comment # 152  
Comment by: Doug Knisely  
Page 18  
Line 24  
Fig/Table#  
Section 4.2.6

No idea what this section is trying to say.

MIB-like parameters are defined elsewhere. The only thing unique here is "intra-frequency, inter-frequency, ...".

Perhaps something about operational service metrics is desired, but not described by this non-testable requirement.

Suggested Remedy
Delete all text (and possibly the section heading, too).

Alternatively, rewrite to clarify intent.

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<th>Recommendation by Joanne Wilson, Mike Youssefmir</th>
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<td>Reason for Recommendation</td>
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Comment # 197  
Comment by: Eshwar Pittampalli  
Page 18  
Line 25  
Fig/Table#  
Section 4.2.6

"The physical layer provides ...., etc." Not clear

Suggested Remedy
Specify what metrics are being measured.

<table>
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<th>Proposed Resolution</th>
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<th>Recommendation by Joanne Wilson</th>
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<td></td>
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</tbody>
</table>
As written these seem to be vague equipment requirements, not requirements on the air interface PHY or MAC. The text suggested below adds an air interface requirement so that Base Stations can extract measurement or status information from mobiles.

**Suggested Remedy**
Change to read: "The 802.20 air interface shall provide features for the Base Station to request Status and Measurement Information from mobile stations, and a "Status Response" for mobile stations to transmit measurements and status to the infrastructure."

**Proposed Resolution:**
Revised

**Reason for Recommendation:**
As written these seem to be vague equipment requirements, not requirements on the air interface PHY or MAC. The text suggested below adds an air interface requirement so that Base Stations can extract measurement or status information from mobiles.

**Resolution of Group:**
Decision of Group:

**Reason for Group's Decision/Resolution:**
Proposed Resolution

**Group's Notes**

**Group's Action Items**

---

The term "network" is inappropriate here.

**Suggested Remedy**
Change "network" to "Base Station"

**Proposed Resolution:**
Accepted

**Reason for Recommendation:**

**Resolution of Group:**
Decision of Group:

**Reason for Group's Decision/Resolution:**

**Group's Notes**

**Group's Action Items**
The sentence “The Physical layer provides...” is vague and not using proper engineering terms.

Suggested Remedy

Change the entire sentence as follows: The physical layer measurements shall include, but not limited to: signal strength and signal quality (C/I) measurements and reporting to the opposite side of the air link, measure neighboring cells’ signals and monitor their broadcast channels (if applicable), measure and report error rates, measure and report access delays and call interruption, measure and report effective throughput (good-put), provide any other measurement needed for handoff support, maintenance and quality of service monitoring. Measurements results may need to be sent out at prescribed (in the 802.20 standard) a frequency as well as stored internally for offline processing."

Proposed Resolution: Accepted

Recommendation by Lalit Kotecha

The standard should provide a scalable solution to accommodate deployment in various channel bandwidths.

Proposed Resolution: Accepted-Modified

Recommendation by Anna Tee
Comment # 63  Comment by: Dan Gal

Comment Type Technical, Binding Page 18 Line 30 Fig/Table# Section 4.3

Redundancy in line 30 - "The AI shall be designed ..."

Suggested Remedy
Delete the sentence.

Proposed Resolution Recommendation: Accepted

Reason for Recommendation

Resolution of Group Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

Comment # 64  Comment by: Dan Gal

Comment Type Technical, Binding Page 18 Line 33 Fig/Table# Section 4.3

Need to state that some channel BWs should be mandatory and others optional.

Suggested Remedy
Add a new sentence before "Channel bandwidths..." in line 33: The 802.20 standard shall specify which channel bandwidths would be mandatory and which would be optional".

Proposed Resolution Recommendation: Rejected

Reason for Recommendation

Resolution of Group Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
Need to clarify/change the sentence "The design shall be..."

Suggested Remedy

Change the sentence as follows:
"The 802.20 standard should be kept up to date with future advancements in radio technology and availability of spectrum that would be suitable for deployment of wider channel bandwidths."

Proposed Resolution Recommendation: Rejected

The meaning of the current sentence is a design constraint. The proposed paraphrase is a requirement on updating of the standard.; this is a totally different semantic.

Reason for Recommendation

Resolution of Group Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

"cellular" word conveys only partial information.

Suggested Remedy

Replace it with "wireless"

Proposed Resolution Recommendation: Rejected

We do mean "cellular"

Resolution of Group Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
"readily extensible to wider channels..." -- this is an open-ended requirement for channel bandwidth.

Specify maximum channel bandwidth.

Proposed Resolution Recommendation: **Rejected**

**Reason for Recommendation**
The max channel bandwidth would be equal to the max block size.

**Resolution of Group**
Decision of Group:

**Group’s Action Items**

---

This sentence may be useful to retain. Scalability is useful, but let's not demand linearity or any other specific functional relationship.

**Reword as follows:** The air interface design shall scale to wider channel bandwidths than those mentioned here, as they become available.

Proposed Resolution Recommendation: **Accepted**

**Reason for Recommendation**

**Resolution of Group**
Decision of Group:

**Group’s Notes**
Section 4.1.2 has already dealt with this aspect sufficiently and has been voted for approval by the working group.
Redundancy in line 30 - "The AI shall be designed ..."

Suggested Remedy
Delete the sentence.

Proposed Resolution
Replace the first two sentences in section 4.3 with the following sentence, "The 802.20 AI standard shall support system implementation in TDD or FDD licensed spectrum below 3.5 GHz and allocated to the Mobile Service."

Reason for Recommendation
eliminates redundancy and improves clarity

Need to state that some channel BWs should be mandatory and others optional.

Proposed Resolution
Add a new sentence before "Channel bandwidths..." in line 33: The 802.20 standard shall specify which channel bandwidths would be mandatory and which would be optional.

Reason for Recommendation
Obviously, the 802.20 standard will specify its channel bandwidth. It's not clear how the standard could specify an optional channel bandwidth. The 802.20 working group is not establishing a requirement on what that channel bandwidth has to be so that proposals can make use of the channel bandwidth that is most appropriate for their design.
**Comment # 65**  
Comment by: Dan Gal

**Comment**  
Need to clarify/change the sentence "The design shall be..."

**Suggested Remedy**  
Change the sentence as follows:  
"The 802.20 standard should be kept up to date with future advancements in radio technology and availability of spectrum that would be suitable for deployment of wider channel bandwidths."

**Proposed Resolution**  
Recommendation: **Rejected**  
Recommendation by: Joanne Wilson

**Reason for Recommendation**  
I don't believe this is what is intended by the sentence, which was not related to future revisions of the standard. The sentence in question is related to implementing the standard in larger block assignments as they become available. Could agree to delete the sentence.

**Resolution of Group**  
Decision of Group:

**Comment # 198**  
Comment by: Eshwar Pittampalli

**Comment**  
"cellular" word conveys only partial information.

**Suggested Remedy**  
Replace it with "wireless"

**Proposed Resolution**  
Recommendation: **Rejected**  
Recommendation by: Joanne Wilson

**Reason for Recommendation**  
No, wireless could include unlicensed or fixed systems. Cellular implies licensed systems and are most likely to be mobile. Could agree to change "cellular" to "mobile", but not to merely "wireless".

**Resolution of Group**  
Decision of Group:
Eshwar Pittampalli

Specify maximum channel bandwidth.

Proposed Resolution: **Rejected**

Reason for Recommendation:
The applicable block assignments establishes an upper limit on the channel bandwidths. Beyond that the WG has no justification for limiting proponent's design options.

Resolution of Group: Decision of Group:

Comment # Comment by: Ayman, Arak, Jim Naguib, Sutivong, Tomcik

Consolidate the useful information.

Proposed Resolution: **Rejected**

Reason for Recommendation:
The text is sets the overall parameters of the MBWA solution space. Additionally, this comment does not propose a specific remedy.

Resolution of Group: Decision of Group:

Comment # Comment by: Eshwar Pittampalli

"readily extensible to wider channels..." -- this is an open-ended requirement for channel bandwidth.

Suggested Remedy

Specify maximum channel bandwidth.

Proposed Resolution: **Rejected**

Reason for Recommendation:

Resolution of Group: Decision of Group:

Comment # Comment by: Eshwar Pittampalli

This could be consolidated with other material. Note that Lines 31-34 in the section puts requirements on regulators and service providers. Will they be compliant? Can we do anything about it?

Suggested Remedy

Consolidate the useful information.
This sentence may be useful to retain. Scalability is useful, but let's not demand linearity or any other specific functional relationship.

Suggested Remedy
Reword as follows: The air interface design shall scale to wider channel bandwidths than those mentioned here, as they become available.

Proposed Resolution Recommendation: **Rejected** Recommendation by Joanne Wilson

**Reason for Recommendation**
It not clear how a design scales to wider channel bandwidths. It makes sense that the design could be implemented in larger block assignments as they become available. Channel bandwidths are a design choice, hence all options are already available. The question is how much licensed spectrum will an operator have that will allow them to deploy wider channel bandwidths.

Resolution of Group Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items

**Comment # 63** Comment by: Dan Gal

Redundancy in line 30 - "The AI shall be designed ..."

Suggested Remedy
Delete the sentence.

Proposed Resolution Recommendation: **Accepted** Recommendation by Lalit Kotecha

**Reason for Recommendation**
**Resolution of Group Decision of Group:**
**Reason for Group's Decision/Resolution**
**Group's Notes**
**Group's Action Items**
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<tr>
<th>Comment #</th>
<th>64</th>
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<th>Dan Gal</th>
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<tr>
<td>Comment</td>
<td>Technical, Binding</td>
<td>Page 18</td>
<td>Line 33</td>
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<tr>
<td>Need to state that some channel BWs should be mandatory and others optional.</td>
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<th>Recommendation: Accepted</th>
<th>Recommendation by Lalit Kotecha</th>
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<td>Reason for Recommendation</td>
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<td>Group’s Action Items</td>
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</table>
"cellular" word conveys only partial information.

**Suggested Remedy**
Replace it with "wireless"

**Proposed Resolution**

**Recommended by:** Lalit Kotecha

**Resolution of Group**

**Decision of Group:**

**Reason for Group's Decision/Resolution**

**Group's Notes**

**Group's Action Items**

---

"readily extensible to wider channels..." -- this is an open-ended requirement for channel bandwidth.

**Suggested Remedy**

Specify maximum channel bandwidth.

**Proposed Resolution**

**Recommended by:** Lalit Kotecha

**Specify a list of channel BW to be supported**

**Resolution of Group**

**Decision of Group:**

**Reason for Group's Decision/Resolution**

**Group's Notes**

**Group's Action Items**
The 802.20 MAC design shall support both FDD and TDD modes. It will take into account the architectural requirements of section 3.1.1 as well as the need for flexible, future proof design that would readily accommodate changes in the PHY layer as well as in upper layer. To the extent that performance is not taxed significantly, the MAC should abstract general purpose functionalities and keep the number of PHY-specific optimized functions to a minimum. Such functions would have a role similar to that of device drivers in personal computer architectures.

Proposed Resolution
Recommendation: Accepted-Modified
Recommendation by: Naguib, Sutivong, Tomcik

The last sentence of the "suggested remedy" may not entirely describe the intent of the remainder of the paragraph.
Add a new subsection "4.4.2 - MAC Design and Performance Requirements"

**Initial text for this new sub-section:**
"The 802.20 MAC design shall support both FDD and TDD modes. It will take into account the architectural requirements of section 3.1.1 as well as the need for flexible, future proof design that would readily accommodate changes in the PHY layer as well as in upper layer. To the extent that performance is not taxed significantly, the MAC should abstract general purpose functionalities and keep the number of PHY-specific optimized functions to a minimum. Such functions would have a role similar to that of device drivers in personal computer architectures."

**Proposed Resolution**

**Recommendation:** Rejected  
**Recommendation by:** Joanne Wilson

**Reason for Recommendation**

There should not be a requirement for a common MAC design to support both TDD and FDD modes as that would certainly sub-optimize the design and performance of one or both of those modes. Frankly, this is a bad design requirement that can only diminish the performance of an 802.20 system.

**Resolution of Group**

**Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group's Notes**

**Group’s Action Items**
Adding a new subsection "4.4.2 - MAC Design and Performance Requirements"

Initial text for this new sub-section:
"The 802.20 MAC design shall support both FDD and TDD modes. It will take into account the architectural requirements of section 3.1.1 as well as the need for flexible, future proof design that would readily accommodate changes in the PHY layer as well as in upper layer. To the extent that performance is not taxed significantly, the MAC should abstract general purpose functionalities and keep the number of PHY-specific optimized functions to a minimum. Such functions would have a role similar to that of device drivers in personal computer architectures."

Proposed Resolution  Recommendation: Accepted  Recommendation by Lalit Kotecha

Reason for Recommendation
Resolution of Group  Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

Keep the first sentence: "The 802.20 air interface shall support the IETF Differentiated Services (DS) Architecture to be compatible with other IP network standards including IP mobile standards."

Proposed Resolution  Recommendation: Rejected  Recommendation by Anna Tee

Reason for Recommendation
The first sentence has already implied the rest of the paragraph. In order to better support end-to-end QoS, it would be necessary to take into consideration the mechanism for QoS support at the IP network layer, as 802.20 is an IP-based wireless access link standard.

Reason for Recommendation
Resolution of Group  Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
Comment # 68  
Type Technical, Binding  
Page 19  
Line 4  
Fig/Table#  
Section 4.4.1  

inappropriate text "802.20 protocols..."

Suggested Remedy  
change to:  
"The 802.20 MAC design shall specify mechanisms ..." etc.

Proposed Resolution  
Recommendation: Accepted  
Recommendation by Klerer  

There is nothing wrong with the present text.

Reason for Recommendation  
Resolution of Group  
Decision of Group:  
Reason for Group's Decision/Resolution  
Group's Notes  
Group's Action Items  

Comment # 69  
Type Technical, Binding  
Page 19  
Line 4  
Fig/Table#  
Section 4.4.1  

vague "...(QoS)" - need more specificity

Suggested Remedy  
Add after "(QoS)":
"control and monitoring"

Proposed Resolution  
Recommendation: Accepted  
Recommendation by Klerer  

Resolution of Group  
Decision of Group:  
Reason for Group's Decision/Resolution  
Group's Notes  
Group's Action Items
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<td>Technical, Binding</td>
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<td>19</td>
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<td></td>
<td>redundant second sentence (lines 4-6)</td>
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Suggested Remedy
suggest that we delete it or replace with the following:
"The MAC's QoS provisions shall allow flexible and reconfigurable implementations that would facilitate Service Providers' applications which require provisioning of users' QoS capabilities."

Proposed Resolution: **Accepted**

Recommendation by: **Klerer**
Most of this text is not MAC-text. Some should be moved to 4.1.7. Some should be changed. Some deleted.

Suggested Remedy

The 802.20 MAC layer protocols shall provide mechanisms for the over-the-air delivery of user data that satisfies negotiated link-level Quality of Service (QOS). The 802.20 protocol standards shall define the interfaces and procedures that facilitate the configuration, negotiation, and enforcement of QoS policies, which operators may choose to implement.

Move the next 3 paragraphs to section 4.1.7:

"The 802.20 air interface shall support the IETF Differentiated Services (DS) Architecture to be compatible with other IP network standards including IP mobile standards. To this end, 802.20 shall support the standard DiffServ QoS model. Some of the forwarding behaviors that should be supported by 802.20 include: Expedited Forwarding (EF), Assured Forwarding (AF), and Best Effort (BE) DS per Hop Behaviors (PHBs) as defined by the RFC 2597 and RFC 2598. 802.20 shall also support configuration of the PHBs by a DS API that shall be based on a subset of the information model defined in RFC 3289.

Service and QoS Mapping

Proposed Resolution

Recommendation: Rejected

Reason for Recommendation

Need to sort out higher layer issues (e.g., the use of RSVP) from lower layer issues.

Resolution of Group

Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
"802.20...mechanisms..." not clear

Suggested Remedy
Specify what mechanisms are being referred to in this sentence.

Proposed Resolution: Superceded

Resolution of Group: Decision of Group:
Reason for Group’s Decision/Resolution

Group’s Notes
Group’s Action Items

"...other IP network standards..." not complete

Suggested Remedy
Provide the references to other IP network standards and IP mobile standards.

Proposed Resolution: Superceded

Resolution of Group: Decision of Group:
Reason for Group’s Decision/Resolution

Group’s Notes
Group’s Action Items
This paragraph goes into great detail on what IETF RFCs to use in equipment. This can vary depending on the customer’s requirements, services offered, etc. We recommend deletion of the paragraph, or removal of requirements language to show intent with informative text.

**Suggested Remedy**
Delete the Paragraph or make informative.

**Proposed Resolution**

**Recommended:** Accepted-Modified
**Recommendation by:** Klerer

I can live with this if it becomes a should or informative as request by the comment

**Reason for Recommendation**

**Resolution of Group**

**Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group's Notes**

**Group’s Action Items**

---

This seems to place a requirement on the network and not the air interface PHY or MAC.

**Suggested Remedy**
Remove sentence starting with "A Qos based IP network..."

**Proposed Resolution**

**Recommended:** Accepted
**Recommendation by:** Klerer

**Reason for Recommendation**

**Resolution of Group**

**Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**
Comment # 68  Comment by:

Suggested Remedy

Proposed Resolution  Recommendation: Accepted  Recommendation by  Naguib, Sutivong, Tomcik,

Reason for Recommendation

Resolution of Group  Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

Comment # 69  Comment by:

Suggested Remedy

Proposed Resolution  Recommendation: Accepted  Recommendation by  Naguib, Sutivong, Tomcik,

Reason for Recommendation

Resolution of Group  Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

Comment # 70  Comment by:

Suggested Remedy

Proposed Resolution  Recommendation: Accepted  Recommendation by  Naguib, Sutivong, Tomcik,

Reason for Recommendation

Resolution of Group  Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
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<td>153</td>
<td>Resolution of Group Decision of Group:</td>
<td>Proposed Resolution</td>
<td>Accepted</td>
<td>Recommendation by Naguib, Sutivong, Tomcik,</td>
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<td></td>
<td>Reason for Recommendation</td>
<td>These changes improve clarity of the requirements.</td>
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<td>Accepted</td>
<td>Recommendation by Naguib, Sutivong, Tomcik,</td>
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</table>
The 802.20 MAC design shall specify mechanisms ... etc.

Proposed Resolution  Recommendation: Accepted-Modified  Recommendation by: Joanne Wilson
Delete the first sentence. Modify the second (now first) sentence to begin, "The 802.20 AI standard shall define interfaces and procedures that facilitate the configuration and enforcement of quality of service (QoS) policies, which operators may choose to implement.

Reason for Recommendation
The first sentence is redundant with the second. The modification to the second (now first) sentence is editorial and eliminates ambiguity.

Resolution of Group  Decision of Group:

Proposed Resolution  Recommendation: Rejected  Recommendation by: Joanne Wilson
see reply in record #237 to comment #68
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**Suggested Remedy**

suggest that we delete it or replace with the following:

"The MAC's QoS provisions shall allow flexible and reconfigurable implementations that would facilitate Service Providers' applications which require provisioning of users' QoS capabilities. "

**Proposed Resolution**

Rejected by Joanne Wilson

see reply in record #237 to comment #68 that removes redundancy with the first sentence.

**Reason for Recommendation**

see reply in record #237 to comment #68

**Resolution of Group**

Decision of Group:

**Reason for Group's Decision/Resolution**

**Group's Notes**

**Group's Action Items**
Most of this text is not MAC-text. Some should be moved to 4.1.7. Some should be changed. Some deleted.

Suggested Remedy

The 802.20 MAC layer protocols shall provide mechanisms for the over-the-air delivery of user data that satisfies negotiated link-level QoS. The 802.20 protocol standards shall define the interfaces and procedures that facilitate the configuration, negotiation, and enforcement of QoS policies, which operators may choose to implement.

Move the next 3 paragraphs to section 4.1.7:

"The 802.20 air interface shall support the IETF Differentiated Services (DS) Architecture to be compatible with other IP network standards including IP mobile standards. To this end, 802.20 shall support the standard DiffServ QoS model. Some of the forwarding behaviors that should be supported by 802.20 include: Expedited Forwarding (EF), Assured Forwarding (AF), and Best Effort (BE) DS per Hop Behaviors (PHBs) as defined by the RFC 2597 and RFC 2598. 802.20 shall also support configuration of the PHBs by a DS API that shall be based on a subset of the information model defined in RFC 3289.

Service and QoS Mapping

Proposed Resolution

see reply in record #237 to comment #68

Reason for Recommendation

see reply in record #237 to comment #68

Resolution of Group

Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
**Comment # 200**

**Comment by:** Eshwar Pittampalli

**Comment**  "802.20...mechanisms..."

**Suggested Remedy**

Specify what mechanisms are being referred to in this sentence.

**Proposed Resolution**

Rejection

**Recommendation by:** Joanne Wilson

**Reason for Recommendation**

see reply in record #237 to comment #68

**Resolution of Group**

**Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**

---

**Comment # 201**

**Comment by:** Eshwar Pittampalli

**Comment**  "...other IP network standards...." not complete

**Suggested Remedy**

Provide the references to other IP network standards and IP mobile standards.

**Proposed Resolution**

Rejection

**Recommendation by:** Joanne Wilson

**Reason for Recommendation**

There appears to be a mis-reading of the text because it is clear that those references are not needed. The text says that the 802.20 AI standard shall "support the IETF Differentiated Services (DS) Architecture," which would result in being compatible with other IP network and IP mobile standards.

**Resolution of Group**

**Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**
“The classes of service...” Is not clear.

Suggested Remedy
Replace with "The 802.20 standard shall specify all the parameters needed to address different classes of service and various QoS parameters."

Proposed Resolution
Replace with, "The 802.20 standard shall define a common set of parameters to address all classes of service and the QoS parameters for all services."

Reason for Recommendation
ditorial improvement that does not change the meaning of the original text.

Resolution of Group

Reason for Group's Decision/Resolution

Group's Action Items

Delete the Paragraph or make informative.

Proposed Resolution

Reason for Recommendation
The current text explains what needs to be supported on the air interface in order to support QoS. I would propose that the text should be made normative, instead of deleting it.

Resolution of Group

Reason for Group's Decision/Resolution

Group's Notes

Group’s Action Items
The word "may" has no special meaning in a requirements document (unlike a standard), and it appears that definition of parameters and ranges is underway in the other QoS sections.

Suggested Remedy
Change to read: ...services are translated into a common set of parameters and ranges.

Proposed Resolution
Recommended by: Joanne Wilson

See reply in record #243 to comment #202

This seems to place a requirement on the network and not the air interface PHY or MAC.

Suggested Remedy
Remove sentence starting with "A QoS based IP network..."

Proposed Resolution
Recommended by: Joanne Wilson

The text is both informative and useful.
Comment # 68 Comment by: Dan Gal

inappropriate text "802.20 protocols..."

Suggested Remedy
change to:
"The 802.20 MAC design shall specify mechanisms ..." etc.

Proposed Resolution Recommendation: Accepted
802.20 defines PHY/MAC only. QoS is an end-to-end issue to guarantee delay/jitter/bw for different services. QoS Definitions/Requirements for for higher layer is out of scope

Reason for Recommendation
Resolution of Group: Decision of Group: Group's Notes
Reason for Group’s Decision/Resolution Group’s Action Items

Comment # 200 Comment by: Eshwar Pittampalli

"802.20...mechanisms...") not clear

Suggested Remedy
Specify what mechanisms are being referred to in this sentence.

Proposed Resolution Recommendation: Accepted

Resolution of Group: Decision of Group: Group’s Notes
Reason for Recommendation Reason for Group’s Decision/Resolution Group’s Action Items
Provide the references to other IP network standards and IP mobile standards.

**Proposed Resolution**

**Recommendation:** Accepted

**Reason for Recommendation**

**Decision of Group:** Lalit Kotecha

**Resolution of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**

---

This paragraph goes into great detail on what IETF RFCs to use in equipment. This can vary depending on the customer’s requirements, services offered, etc. We recommend deletion of the paragraph, or removal of requirements language to show intent with informative text.

**Proposed Resolution**

**Recommendation:** Accepted

**Reason for Recommendation**

**Decision of Group:** Lalit Kotecha

**Resolution of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**
This seems to place a requirement on the network and not the air interface PHY or MAC.

Suggested Remedy
Remove sentence starting with "A Qos based IP network..."

Proposed Resolution

Reason for Recommendation

Resolution of Group

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

This should be a normative requirement.

Suggested Remedy
The system shall must support both IPv4 and IPv6.

Proposed Resolution

Reason for Recommendation

Resolution of Group

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
The word "must" has no meaning in a requirements document. We also would like some clarification regarding the support for IPv4 and IPv6 to specify that there is no requirement for simultaneous support.

Suggested Remedy
Change to read: The system should support IPv4, IPv6, or both.

Proposed Resolution

Reason for Recommendation
The system shall support both IPv4 and IPv6.

Resolution of Group

Reason for Group’s Decision/Resolution
can not establish requirements on the implementation, only on the standard.

Group’s Notes

Group’s Action Items
The word "must" has no meaning in a requirements document. We also would like some clarification regarding the support for IPv4 and IPv6 to specify that there is no requirement for simultaneous support.

Suggested Remedy

Change to read: The system should support IPv4, IPv6, or both.

Proposed Resolution

Recommendation: **Accepted**
Recommendation by: Lalit Kotecha

Reason for Recommendation

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
Same as a QC comment on the topic. A possible definition is based on CDMA as follows: "Soft Handoff: A handoff occurring while the mobile station in transmitting and receiving on a Traffic Channel. This handoff is characterized by commencing communications with a new base station on the same frequency before terminating communications with the old base station." "Hard Handoff: A handoff characterized by a temporary disconnection of the Traffic Channel. Hard handoffs occur when the mobile station is transferred between disjoint "Active Sets", the frequency assignment changes, or the mobile station is directed from the Traffic Channel to another wireless system."

"continuous" is definitly not the right word in this context.

Proposed Resolution
Replacement of Group Decision of Group:

"contiguous" is not the right word

Replace it with "contiguous"
"soft or hard handoffs.." not clear

Suggested Remedy
Define "soft handoff" and "hard handoff"

Proposed Resolution
Recommendation: Rejected

Reason for Recommendation
No proposal provided

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

This requirement as written places "may" requirements on the mobile station's movement! Recommended sentence places requirements on the AI. IP subnet mobility is at the network layer, hence is considered optional from an AI PHY and MAC perspective.

Suggested Remedy
Change the sentence starting on this line to state: Handoff techniques are required to support mobility between cells, systems, frequencies, and optionally between IP subnets.

Proposed Resolution
Recommendation: Accepted

Reason for Recommendation

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
The "definition" of soft handoff given here is incorrect. Soft HO is a HO with the MS transmitting simultaneously to two BS on the RL, while two BS transmit simultaneously to the MS. Generic make before break handoff is NOT soft handoff. See IS-95 or cdma2000 for a formal definition.

Proposed Resolution: **Accepted**

Reason for Recommendation

Resolution of Group: Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group’s Action Items
"continuous" is not the right word

**Suggested Remedy**
Replace it with "contiguous"

**Proposed Resolution**

**Recommendation:** Rejected

**Reason for Recommendation**
"continuous" is the correct word. This has to do with maintaining continuous service (i.e. no dropped connections) as opposed to contiguous coverage.

**Resolution of Group Decision of Group:**

**Reason for Group's Decision/Resolution**

**Group's Notes**

**Group's Action Items**

---

This requirement as written places "may" requirements on the mobile station's movement! Recommended sentence places requirements on the AI. IP subnet mobility is at the network layer, hence is considered optional from an AI PHY and MAC perspective.

**Suggested Remedy**

Change the sentence starting on this line to state: Handoff techniques are required to support mobility between cells, systems, frequencies, and optionally between IP subnets.

**Proposed Resolution**

**Recommendation:** Accepted-Modified

**Reason for Recommendation**
Changed the text from being informative to normative and remove ambiguities.

**Resolution of Group Decision of Group:**

**Reason for Group's Decision/Resolution**

**Group's Notes**

**Group's Action Items**
The "definition" of soft handoff given here is incorrect. Soft HO is a HO with the MS transmitting simultaneously to two BS on the RL, while two BS transmit simultaneously to the MS. Generic make before break handoff is NOT soft handoff. See IS-95 or cdma2000 for a formal definition.

Proposed Resolution
change "soft" to "make before break" and change "hard" to "break before make"

Reason for Recommendation
Resolution of Group: 
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

Proposed Resolution
Recommendation: Accepted
Recommendation by: Joanne Wilson

Proposed Resolution
Recommendation: Accepted
Recommendation by: Lalit Kotecha

"continuous" is not the right word
Replace it with "contiguous"
**Define "soft handoff" and "hard handoff"**

**Suggested Remedy**

**Proposed Resolution**

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<td>Comment</td>
<td>Technical, Binding</td>
<td>Page 19</td>
<td>Line 26</td>
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"soft or hard handoffs.." not clear

**Comment**

Delete sentence.

**Proposed Resolution**

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<td>Page 19</td>
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The "definition" of soft handoff given here is incorrect. Soft HO is a HO with the MS transmitting simultaneously to two BS on the RL, while two BS transmit simultaneously to the MS. Generic make before break handoff is NOT soft handoff. See IS-95 or cdma2000 for a formal definition.

**Suggested Remedy**

Delete sentence.

**Proposed Resolution**

| Recommendation by Lalit Kotecha |

Soft handoff is not defined in this section. If comment suggests to define soft handoff needs to be done. It is not clear which sentence to delete.

**Proposed Resolution**

| Recommendation Lalit Kotecha |

```
Since there is a requirement for both IPv4 and IPv6, the Mobile IP support should cite both MobileIPv4 and MobileIPv6.

Suggested Remedy
Change to read: "MobileIPv4, MobileIPv6, or Simple IP." Remove the fragment starting with "for the preservation..."

Proposed Resolution
Recommendation: **Accepted**

Reason for Recommendation
Decision of Group:

Resolution of Group
Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

---

This term Simple IP is not well defined in this document and was developed in TIA TR45 and 3GPP2.

Suggested Remedy
Add a definition for "Simple IP"

Proposed Resolution
Recommendation: **Accepted**

Reason for Recommendation
Decision of Group:

Resolution of Group
Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
This sentence is not relevant to handoff, but rather to NAT (Network Address Translation) techniques. These are implemented at higher layers than the 802.20 air interface will address.

Suggested Remedy
Delete this sentence.

Proposed Resolution
Recommendation: **Accepted**
Recommendation by: Klerer

Since there is a requirement for both IPv4 and IPv6, the Mobile IP support should cite both MobileIPv4 and MobileIPv6.

Suggested Remedy
Change to read: "MobileIPv4, MobileIPv6, or Simple IP." Remove the fragment starting with "for the preservation..."

Proposed Resolution
Recommendation: **Accepted**
Recommendation by: Joanne Wilson

not necessary to remove fragment starting with "for the preservation..." as it is informative.

Reason for Recommendation
improved clarity

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution

Group’s Notes

Group’s Action Items
This term Simple IP is not well defined in this document and was developed in TIA TR45 and 3GPP2.

**Suggested Remedy**

Add a definition for "Simple IP"

**Proposed Resolution**

Add definition to Appendix A - Definition of Terms and Concepts

**Resolution of Group**

Decision of Group:

**Reason for Group's Decision/Resolution**

**Group's Notes**

**Group's Action Items**

---

This sentence is not relevant to handoff, but rather to NAT (Network Address Translation) techniques. These are implemented at higher layers than the 802.20 air interface will address.

**Suggested Remedy**

Delete this sentence.

**Proposed Resolution**

**Resolution of Group**

**Reason for Recommendation**

agree that this is not related to handoffs

**Group's Notes**

**Group's Action Items**
Add a definition for "Simple IP"

This term Simple IP is not well defined in this document and was developed in TIA TR45 and 3GPP2.

Proposed Resolution

Recommendation: Accepted

Resolution of Group

Decision of Group:

Proposed Resolution

Delete this sentence.

This sentence is not relevant to handoff, but rather to NAT (Network Address Translation) techniques. These are implemented at higher layers than the 802.20 air interface will address.

Proposed Resolution

Delete Following Sentence

"Multiple IP addresses behind one terminal may also be supported."

Reason for Recommendation

Resolution of Group

Decision of Group:

Proposed Resolution

Delete Following Sentence

"Multiple IP addresses behind one terminal may also be supported."

Reason for Recommendation

Resolution of Group

Decision of Group:
Comment # 9 Comment by:

Comment Type Technical, Binding Page 19 Line 34 Fig/Table# Section 4.5.2

Suggested Remedy

Proposed Resolution Recommendation: Rejected-Duplicate

Reason for Recommendation

Resolution of Group Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

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Comment # 19 Comment by:

Comment Type Technical, Binding Page 19 Line 34 Fig/Table# Section 4.5.2

Suggested Remedy

Proposed Resolution Recommendation: Rejected-Duplicate

Reason for Recommendation

Resolution of Group Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
Comment # 83  Comment by:

Comment   Type  Technical, Binding
Page  19     Line  34     Fig/Table#  Section  4.5.2

Suggested Remedy

Proposed Resolution
Recommendation: Rejected-Duplicate

Reason for Recommendation
Resolution of Group
Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

Comment # 88  Comment by:

Comment   Type  Technical, Binding
Page  21     Line  9     Fig/Table#  Section  4.5.2

Suggested Remedy

Proposed Resolution
Recommendation: Rejected-Duplicate

Reason for Recommendation
Resolution of Group
Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
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Type: Technical, Binding
Page 19  Line 34  Section 4.5.2

Suggested Remedy

Proposed Resolution: **Rejected-Duplicate**
Recommendation by: Naguib, Sutivong, Tomick
Same as comment 273 - Reject comment

Reason for Recommendation
Resolution of Group: Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items

Comment # 9  
Type: Technical, Binding
Page 19  Line 34  Section 4.5.2

Suggested Remedy

Proposed Resolution: **Rejected**
Recommendation by: Anna Tee
Keep Option 2.

Reason for Recommendation
To be consistent with the architecture of IEEE 802 standards, and to allow better flexibility in service variations.
Resolution of Group: Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
Comment # 158

Comment by:

Suggested Remedy

Proposed Resolution  Recommendation: Rejected

Reason for Recommendation

To be consistent with the architecture of IEEE 802 standards, and to allow better flexibility in service variations.

Resolution of Group  Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

---

Comment # 9

Comment by: Todd Chauvin

Comment Type: Technical, Binding
Page 19  Line 34  Fig/Table#  Section 4.5.2

Suggested Remedy

Remove Section

Proposed Resolution  Recommendation: Accepted-Modified

Reason for Recommendation

Advocating a specific mechanism for separation of traffic does not allow 802.20 to maintain a network agnostic approach. This can be accomplished in many ways allowing use of 802.1q tagging, PPP or MPLS across the air interface without specifically mandating any particular technology at layer 2. Eg. 802.16 defines a convergence sublayer when VLAN frames are to be carried over the air interface without mandating 802.1q at layer 2.

Resolution of Group  Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
Advocating a specific mechanism for separation of traffic does not allow 802.20 to maintain a network agnostic approach. This can be accomplished in many ways allowing use of 802.1q tagging, PPP or MPLS across the air interface without specifically mandating any particular technology at layer 2. Eg. 802.16 defines a convergence sublayer when VLAN frames are to be carried over the air interface without mandating 802.1 q at layer 2.

Suggested Remedy
Remove Section

Proposed Resolution

Recommendation: **Accepted-Modified**
Recommendation by: Klerer

Duplicate

Reason for Recommendation

Resolution of Group

Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

This is a duplicate comment see reply to original comment.
Advocating a specific mechanism for separation of traffic does not allow 802.20 to maintain a network agnostic approach. This can be accomplished in many ways allowing use of 802.1q tagging, PPP or MPLS across the air interface without specifically mandating any particular technology at layer 2. Eg. 802.16 defines a convergence sublayer when VLAN frames are to be carried over the air interface without mandating 802.1q at layer 2.

### Suggested Remedy

**Remove Section**

### Proposed Resolution

**Recommendation:** **Accepted-Duplicate**  
**Recommendation by:** Klerer  
See reply comment to initial comment  

### Reason for Recommendation

**Resolution of Group**

**Decision of Group:**

### Reason for Group's Decision/Resolution

### Group's Action Items

---

Requirements with regard to 802.1Q are detailed in the 802 P&P "5 criteria", the 802.20 "5 criteria", and the 802.20 PAR. If needed the relevant sections of those documents should simply be referenced, to avoid introduction of any ambiguity regarding the requirement.

### Suggested Remedy

**Option 1:** Preferred. The 802.1Q section should be dropped.

### Proposed Resolution

**Recommendation:** **Accepted**  
**Recommendation by:** Klerer
We support Option 1, removing this section. It does not seem relevant to the air interface requirements.

Suggested Remedy
Remove Section.

Proposed Resolution
Recommendation: Accepted
Recommendation by Klerer

Advocating a specific mechanism for separation of traffic does not allow 802.20 to maintain a network agnostic approach. This can be accomplished in many ways allowing use of 802.1q tagging, PPP or MPLS across the air interface without specifically mandating any particular technology at layer 2. Eg. 802.16 defines a convergence sublayer when VLAN frames are to be carried over the air interface without mandating 802.1q at layer 2

Suggested Remedy
Delete Section.

Proposed Resolution
Recommendation: Accepted-Modified
Recommendation by Klerer

This is a duplicate see initial reply comment

Resolution of Group Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items
Advocating a specific mechanism for separation of traffic does not allow 802.20 to maintain a network agnostic approach. This can be accomplished in many ways allowing use of 802.1q tagging, PPP or MPLS across the air interface without specifically mandating any particular technology at layer 2. Eg. 802.16 defines a convergence sublayer when VLAN frames are to be carried over the air interface without mandating 802.1q at layer 2.

Suggested Remedy
Remove Section

Proposed Resolution
Recommendation: Accepted
Recommendation by: Joanne Wilson

Reason for Recommendation
agree.

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

---

Advocating a specific mechanism for separation of traffic does not allow 802.20 to maintain a network agnostic approach. This can be accomplished in many ways allowing use of 802.1q tagging, PPP or MPLS across the air interface without specifically mandating any particular technology at layer 2. Eg. 802.16 defines a convergence sublayer when VLAN frames are to be carried over the air interface without mandating 802.1q at layer 2.

Suggested Remedy
Remove Section

Proposed Resolution
Recommendation: Accepted-Duplicate
Recommendation by: Joanne Wilson

Reason for Recommendation

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
Advocating a specific mechanism for separation of traffic does not allow 802.20 to maintain a network agnostic approach. This can be accomplished in many ways allowing use of 802.1q tagging, PPP or MPLS across the air interface without specifically mandating any particular technology at layer 2. Eg. 802.16 defines a convergence sublayer when VLAN frames are to be carried over the air interface without mandating 802.1 q at layer 2.

**Suggested Remedy**
Remove Section

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Advocating a specific mechanism for separation of traffic does not allow 802.20 to maintain a network agnostic approach. This can be accomplished in many ways allowing use of 802.1q tagging, PPP or MPLS across the air interface without specifically mandating any particular technology at layer 2. Eg. 802.16 defines a convergence sublayer when VLAN frames are to be carried over the air interface without mandating 802.1 q at layer 2.

**Suggested Remedy**
Remove Section

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Two options are specified. The objectives specified can be satisfied in a number of ways and no single mechanism should be mandatory. I, therefore, support either option 1 or option 2 modified as below.

**Suggested Remedy**

Delete or use the following text:

The system should support a mechanism that allows the management of backbone traffic and/or the distinguishing of traffic for wholesale partners in a wholesale environment. One that mechanism that is available at layer 2 is 802.1Q tagging.

**Proposed Resolution**

Recommendation: **Accepted**

**Recommendation by:** Joanne Wilson

**Reason for Recommendation**

prefer option 1, which is to delete the section. The proposed replacement text for option 2 is also acceptable.

**Resolution of Group**

Decision of Group:

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**
We support Option 1, removing this section. It does not seem relevant to the air interface requirements.

Proposed Resolution
Remove Section.

Suggested Remedy

Recommended by: **Accepted**

**Joanne Wilson**

Advocating a specific mechanism for separation of traffic does not allow 802.20 to maintain a network agnostic approach. This can be accomplished in many ways allowing use of 802.1q tagging, PPP or MPLS across the air interface without specifically mandating any particular technology at layer 2. Eg. 802.16 defines a convergence sublayer when VLAN frames are to be carried over the air interface without mandating 802.1q at layer 2.

Proposed Resolution
Delete Section.

Suggested Remedy

Recommended by: **Accepted-Duplicate**

**Joanne Wilson**
Advocating a specific mechanism for separation of traffic does not allow 802.20 to maintain a network agnostic approach. This can be accomplished in many ways allowing use of 802.1q tagging, PPP or MPLS across the air interface without specifically mandating any particular technology at layer 2. Eg. 802.16 defines a convergence sublayer when VLAN frames are to be carried over the air interface without mandating 802.1q at layer 2.

Suggested Remedy
Remove Section

Proposed Resolution
Recommendation: Accepted-Duplicate
Recommendation by: Joanne Wilson

Resolution of Group
Decision of Group:

Reason for Recommendation

Resolution of Group's Decision/Resolution

Group's Notes

Group's Action Items

Advocating a specific mechanism for separation of traffic does not allow 802.20 to maintain a network agnostic approach. This can be accomplished in many ways allowing use of 802.1q tagging, PPP or MPLS across the air interface without specifically mandating any particular technology at layer 2. Eg. 802.16 defines a convergence sublayer when VLAN frames are to be carried over the air interface without mandating 802.1q at layer 2.

Suggested Remedy
Remove Section

Proposed Resolution
Recommendation: Superceded
Recommendation by: Lalit Kotecha

Resolution of Group
Decision of Group:

Reason for Recommendation

Resolution of Group's Decision/Resolution

Group's Notes

Group's Action Items
Advocating a specific mechanism for separation of traffic does not allow 802.20 to maintain a network agnostic approach. This can be accomplished in many ways allowing use of 802.1q tagging, PPP or MPLS across the air interface without specifically mandating any particular technology at layer 2. Eg. 802.16 defines a convergence sublayer when VLAN frames are to be carried over the air interface without mandating 802.1q at layer 2.

Suggested Remedy
Remove Section

---

Comment # 83
Comment by: Marc Goldburg
Type: Technical, Binding
Page 19, Line 34, Section 4.5.2

Proposed Resolution
Suggested Remedy: **Superseded**

Recommendation by Lalit Kotecha

---

Comment # 8
Comment by: Marc Goldburg
Type: Technical, Binding
Page 20, Line 7, Section 4.5.3

Proposed Resolution
Suggested Remedy: **Rejected-Duplicate**

Recommendation by Naguib, Sutivong, Tomcik

Same as comment 155 - Reject Comment
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Same as comment 155 - Reject Comment

Reason for Recommendation

Resolution of Group

Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
Comment # 89

Resolution of Group Decision of Group:
Reason for Group's Decision/Resolution
Group's Action Items

Comment # 155

Resolution of Group Decision of Group:
Reason for Group's Decision/Resolution
Group's Action Items

Comment # 252

Resolution of Group Decision of Group:
Reason for Group's Decision/Resolution
Group's Action Items
Comment # 274

Comment by:

Type Technical, Binding
Page 20 Line 7 Fig/Table# Section 4.5.3

Suggested Remedy

Proposed Resolution Recommendation: Rejected-Duplicate

Reason for Recommendation

Resolution of Group Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

Comment # 283

Comment by:

Type Technical, Binding
Page 20 Line 7 Fig/Table# Section 4.5.3

Suggested Remedy

Proposed Resolution Recommendation: Rejected-Duplicate

Reason for Recommendation

Resolution of Group Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
This is a feature of the user terminal and backend infrastructure and is irrelevant at the MAC/PHY layer. In addition, the need for high priority should be captured within QOS framework.

Suggested Remedy
Remove section

Proposed Resolution

Reason for Recommendation

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

Comment # 8  Comment by: Todd Chauvin

Proposed Resolution
Recommendation: Accepted
Recommendation by: Klerer

Comment # 18  Comment by: John Chen

Proposed Resolution
Recommendation: Accepted-Duplicate
Recommendation by: Klerer
This is a feature of the user terminal and backend infrastructure and is irrelevant at the MAC/PHY layer. In addition, the need for high priority should be captured within QOS framework.

Suggested Remedy
Remove section

Proposed Resolution
Recommendation: **Accepted-Duplicate**
Recommendation by: Klerer

Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items

This is a feature of the user terminal and backend infrastructure and is irrelevant at the MAC/PHY layer. In addition, the need for high priority should be captured within QOS framework.

Suggested Remedy
Remove section

Proposed Resolution
Recommendation: **Accepted-Duplicate**
Recommendation by: Klerer

Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items
Not sure how this is a MAC/PHY requirements. Software upgrades should be an upper layer issue. Suggest simpler wording.

**Suggested Remedy**

CPE software upgrade “push” - an operator should have the ability to “push” a software upgrade to CPE that are currently connected to the network. The packets that make up the software image should be given a very high priority and should be coded heavily such that they have a very high chance of arriving error free at the CPE. The CPE should be capable of holding 2 software loads (the existing one and a new one) such that an operator can ensure that the “new” software load has arrived safely at the CPE before deciding to switch from the “old” software load to the “new” software load. The 802.20 AI shall not preclude over-the-air download of firmware and software updates for the mobile terminal. The 802.20 AI shall support network-based bootstrap procedures, e.g., bootp.

**Proposed Resolution**

Recommendation: **Rejected**
Recommendation by: Klerer

**Reason for Recommendation**
Agree that this is not a MAC/PHY issue and should, therefore, not be included.

**Resolution of Group**
Decision of Group:

**Group’s Notes**

---

This section seems to be a discussion Over the Air Service Provisioning (OTASP). This function, while important to equipment design and implementaiton is not a part of the air interface itself. Hence there should be no requirements on the AI.

**Suggested Remedy**

Make the section "informative" to show intent or remove it.

**Proposed Resolution**

Recommendation: **Accepted**
Recommendation by: Klerer

**Reason for Recommendation**

**Resolution of Group**
Decision of Group:

**Group’s Notes**

---
This is a feature of the user terminal and backend infrastructure and is irrelevant at the MAC/PHY layer. In addition, the need for high priority should be captured within QOS framework.

Suggested Remedy
Delete section.

Proposed Resolution
Recommendation: **Accepted-Duplicate**
Recommendation by: Klerer

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
This is a feature of the user terminal and backend infrastructure and is irrelevant at the MAC/PHY layer. In addition, the need for high priority should be captured within QOS framework.

Suggested Remedy
Remove section

Proposed Resolution
Recommendation: Accepted
Reason for Recommendation
agree.

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

Comment # 8 Comment by: Todd Chauvin

Comment Type Technical, Binding Page 20 Line 7 Fig/Table# Section 4.5.3

Comment # 18 Comment by: John Chen

This is a feature of the user terminal and backend infrastructure and is irrelevant at the MAC/PHY layer. In addition, the need for high priority should be captured within QOS framework.

Suggested Remedy
Remove section

Proposed Resolution
Recommendation: Accepted-Duplicate
Reason for Recommendation

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

Proposed Resolution
Recommendation by Joanne Wilson

Reason for Recommendation
agree.

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items

Proposed Resolution
Recommendation by Joanne Wilson

Reason for Recommendation
agree.

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
This is a feature of the user terminal and backend infrastructure and is irrelevant at the MAC/PHY layer. In addition, the need for high priority should be captured within QOS framework.

Suggested Remedy
Remove section

Proposed Resolution
Recommendation: Accepted-Duplicate
Recommendation by: Joanne Wilson

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution
Group’s Notes
Group’s Action Items
Suggested Remedy

A CPE software upgrade "push" - an operator should have the ability to "push" a software upgrade to CPE that are currently connected to the network. The packets that make up the software image should be given a very high priority and should be coded heavily such that they have a very high chance of arriving error free at the CPE. The CPE should be capable of holding 2 software loads (the existing one and a new one) such that an operator can ensure that the "new" software load has arrived safely at the CPE before deciding to switch from the "old" software load to the "new" software load. The 802.20 AI shall not preclude over-the-air download of firmware and software updates for the mobile terminal. The 802.20 AI shall support network-based bootstrap procedures, e.g., bootp.

Proposed Resolution

Accepted-Modified

Recommendation by Joanne Wilson, Mike Youssefmir

Delete the section entirely, or only maintain the sentence, "The 802.20 AI shall not preclude over-the-air download of firmware and software updates for the mobile terminal."

Reason for Recommendation

This is a good alternative, though my preference is to delete the section.

Resolution of Group

Decision of Group:
This section seems to be a discussion Over the Air Service Provisioning (OTASP). This function, while important to equipment design and implementation is not a part of the air interface itself. Hence there should be no requirements on the AI.

**Suggested Remedy**

Make the section "informative" to show intent or remove it.

**Proposed Resolution**

**Recommendation:** Accepted-Duplicate

**Recommendation by:** Joanne Wilson

**Reason for Recommendation**

Preference is to delete the section.

**Resolution of Group**

**Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**

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This is a feature of the user terminal and backend infrastructure and is irrelevant at the MAC/PHY layer. In addition, the need for high priority should be captured within QOS framework.

**Suggested Remedy**

Delete section.

**Proposed Resolution**

**Recommendation:** Accepted-Duplicate

**Recommendation by:** Joanne Wilson

**Reason for Recommendation**

**Resolution of Group**

**Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

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This is a feature of the user terminal and backend infrastructure and is irrelevant at the MAC/PHY layer. In addition, the need for high priority should be captured within QOS framework

**Suggested Remedy**
Remove section

**Proposed Resolution**

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**Reason for Recommendation**

**Resolution of Group**

**Decision of Group:**

**Reason for Group's Decision/Resolution**

**Group's Notes**

**Group's Action Items**

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This is a feature of the user terminal and backend infrastructure and is irrelevant at the MAC/PHY layer. In addition, the need for high priority should be captured within QOS framework

**Suggested Remedy**
Remove section

**Proposed Resolution**

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**Reason for Recommendation**

**Resolution of Group**

**Decision of Group:**

**Reason for Group's Decision/Resolution**

**Group's Notes**

**Group's Action Items**
This is a feature of the user terminal and backend infrastructure and is irrelevant at the MAC/PHY layer. In addition, the need for high priority should be captured within QOS framework

Suggested Remedy
Remove section

Proposed Resolution
Recommendation: Superceded
Recommendation by Lalit Kotecha

Comment #8

Reason for Recommendation
Resolution of Group: Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items

Comment # 283
Comment by: Michael Youssefmir

This is a feature of the user terminal and backend infrastructure and is irrelevant at the MAC/PHY layer. In addition, the need for high priority should be captured within QOS framework

Suggested Remedy
Remove section

Proposed Resolution
Recommendation: Accepted
Recommendation by Lalit Kotecha

Reason for Recommendation
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Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items
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Comment  Type Technical, Binding
Page 20 Line 15 Fig/Table# Section 4.5.4
Suggested Remedy
Proposed Resolution Recommendation: Rejected-Duplicate Recommendation by Naguib, Sutivong, Tomcik
Same as comment 97- Reject Comment
Reason for Recommendation
Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Action Items

Comment # 90 Comment by: 
Comment  Type Technical, Binding
Page 21 Line 25 Fig/Table# Section 4.5.4
Suggested Remedy
Proposed Resolution Recommendation: Rejected-Duplicate Recommendation by Naguib, Sutivong, Tomcik
dup of 157
Reason for Recommendation
Resolution of Group Decision of Group:
Reason for Group’s Decision/Resolution
Group’s Action Items
Comment # 157  Comment by: 
Comment Type Technical, Binding  Page 20  Line  Fig/Table#  Section 4.5.4
Suggested Remedy
Proposed Resolution Recommendation: Accepted-Modified
Reason for Recommendation
Resolution of Group Decision of Group: Naguib, Sutivong, Tomcik
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items

Comment # 275  Comment by: 
Comment Type Technical, Binding  Page 20  Line 15  Fig/Table#  Section 4.5.4
Suggested Remedy
Proposed Resolution Recommendation: Rejected-Duplicate
Reason for Recommendation
Resolution of Group Decision of Group: Naguib, Sutivong, Tomcik
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items
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Comment # 10 | Comment by: | Todd Chauvin |
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Suggested Remedy
Replace requirement with "The air interface shall support the collection of metrics so that a network operator can effectively monitor the performance of the 802.20 air interfaces through various MIBs."

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All options are overly detailed with respect to specific statistics that need to be accumulated.

Suggested Remedy
Replace requirement with "The air interface shall support the collection of metrics so that a network operator can effectively monitor the performance of the 802.20 air interfaces through various MIBs."

Proposed Resolution

Recommended: Accepted-Duplicate
Recommendation by: Klerer

Resolution of Group
Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items

See reply to initial comment

Reason for Recommendation

Resolution of Group
Decision of Group:
Reason for Group's Decision/Resolution
Group's Notes
Group's Action Items
All options are overly detailed with respect to specific statistics that need to be accumulated.

**Suggested Remedy**

Replace requirement with "The air interface shall support the collection of metrics so that a network operator can effectively monitor the performance of the 802.20 air interfaces through various MIBs.

**Proposed Resolution**

Recommended by: **Accepted-Duplicate**  
Recommended by: **Klerer**

See reply to initial comment

---

The parameters and metrics cannot be properly defined before the air interface is finalized.

**Suggested Remedy**

The AI shall provide all the hooks to enable the provisioning and collection of metrics, so that the network operator can effectively control, monitor, and tune the performance of the 802.20 air interface. Provisionable parameters, performance metrics, and other OA&M values shall be made available through a standards compliant MIB.

**Proposed Resolution**

Recommended by: **Accepted**  
Recommended by: **Klerer**
### Comment # 253
**Comment by:** Ayman, Arak, Jim Naguib, Sutivong, Tomcik

**Type:** Technical, Non-binding  **Page:** 20  **Line:** 15  **Fig/Table:**  **Section:** 4.5.4

OA&M requirements are equipment requirements, not Air Interface Requirements. This section should be informative to show the intent of the service providers attending 802.20. If there are requirements on the AI or on the MIBs these could be stated.

**Suggested Remedy**
Remove "must" or "will" - to make this an informative section.

**Proposed Resolution**
**Recommended:** Accepted  **Recommended by:** Klerer

**Reason for Recommendation**

**Resolution of Group**
**Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**

---

### Comment # 275
**Comment by:** Joanne Wilson

**Type:** Technical, Binding  **Page:** 20  **Line:** 15  **Fig/Table:**  **Section:** 4.5.4

All options are overly detailed with respect to specific statistics that need to be accumulated.

**Suggested Remedy**
Replace requirement with "The air interface shall support the collection of metrics so that a network operator can effectively monitor the performance of the 802.20 air interfaces through various MIBs."

**Proposed Resolution**
**Recommended:** Superceded  **Recommended by:** Klerer

**Reason for Recommendation**

**Resolution of Group**
**Decision of Group:**

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**
All options are overly detailed with respect to specific statistics that need to be accumulated.

Suggested Remedy

Replace requirement with "The air interface shall support the collection of metrics so that a network operator can effectively monitor the performance of the 802.20 air interfaces through various MIBs."

Proposed Resolution

Recommendation: **Superceded**

Recommendation by: Klerer

Resolution of Group Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

---

Proposed Resolution

Recommendation: **Accepted**

Recommendation by: Joanne Wilson

Resolution of Group Decision of Group:

Reason for Recommendation

agree. The current text is more detailed than necessary.

Resolution of Group Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
All options are overly detailed with respect to specific statistics that need to be accumulated.

Suggested Remedy
Replace requirement with "The air interface shall support the collection of metrics so that a network operator can effectively monitor the performance of the 802.20 air interfaces through various MIBs."

Proposed Resolution
Recommendation: Accepted-Duplicate
Recommendation by: Joanne Wilson

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
All options are overly detailed with respect to specific statistics that need to be accumulated.

**Suggested Remedy**

Replace requirement with "The air interface shall support the collection of metrics so that a network operator can effectively monitor the performance of the 802.20 air interfaces through various MIBs.

**Proposed Resolution**

Recommendation: **Accepted-Duplicate**

Recommendation by: Joanne Wilson

**Resolution of Group**

Decision of Group:

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**

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This section seems to have 3 options. However Option 3 does not seem to be a standalone section.

I prefer Option 2 as a starting point. But extensive discussion is necessary to decide on the exact set of parameters and on data aggregation and reporting intervals and techniques.

**Suggested Remedy**

Discuss the section with a technical perspective and develop consensus on the necessary and sufficient data, its collection frequency, data aggregation and reporting frequency.

**Proposed Resolution**

Recommendation: **Accepted**

Recommendation by: Joanne Wilson

**Resolution of Group**

Decision of Group:

**Reason for Group’s Decision/Resolution**

**Group’s Notes**

**Group’s Action Items**
The parameters and metrics cannot be properly defined before the air interface is finalized.

**Suggested Remedy**

The AI shall provide all the hooks to enable the provisioning and collection of metrics, so that the network operator can effectively control, monitor, and tune the performance of the 802.20 air interface. Provisionable parameters, performance metrics, and other OA&M values shall be made available through a standards compliant MIB.

**Proposed Resolution**

Recommendation: **Accepted**

Recommendation by: Joanne Wilson

---

OA&M requirements are equipment requirements, not Air Interface Requirements. This section should be informative to show the intent of the service providers attending 802.20. If there are requirements on the AI or on the MIBs these could be stated.

**Suggested Remedy**

Remove "must" or "will" - to make this an informative section.

**Proposed Resolution**

Recommendation: **Accepted-Duplicate**

Recommendation by: Joanne Wilson

see reply in record #278 to comment #97

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**Comment # 157**

**Comment by:** Vincent Park

Type: Technical, Binding

Page: 20

Line: 45

Section: 4.5.4

---

**Comment # 253**

**Comment by:** Ayman, Arak, Jim Naguib, Sutivong, Tomcik

Type: Technical, Non-binding

Page: 20

Line: 15

Section: 4.5.4
All options are overly detailed with respect to specific statistics that need to be accumulated.

Suggested Remedy
Replace requirement with "The air interface shall support the collection of metrics so that a network operator can effectively monitor the performance of the 802.20 air interfaces through various MIBs."

Proposed Resolution
Accept-Duplicate

See reply in record #279 to comment #157
All options are overly detailed with respect to specific statistics that need to be accumulated.

Suggested Remedy
Replace requirement with "The air interface shall support the collection of metrics so that a network operator can effectively monitor the performance of the 802.20 air interfaces through various MIBs."

Proposed Resolution
Recommendation: **Superceded**
Recommendation by Lalit Kotecha

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

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Comment # 84 Comment by: Marc Goldburg

Comment Type: Technical, Binding
Page 20 Line 15 Fig/Table# Section 4.5.4

All options are overly detailed with respect to specific statistics that need to be accumulated.

Suggested Remedy
Replace requirement with "The air interface shall support the collection of metrics so that a network operator can effectively monitor the performance of the 802.20 air interfaces through various MIBs."

Proposed Resolution
Recommendation: **Superceded**
Recommendation by Lalit Kotecha

Comment #10

Reason for Recommendation

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items
Clarify this requirement or make the sentence an informative lead-in to the paragraph. It could be done as follows: "The AI is intended to support multiple protocol states with dynamic transitions between states."

Is the intent of the sentence to promote power management "hooks" in the air interface? The requirement should not mandate any particular technique to achieve this.

Change to read: ...shall provide power conservation features to improve battery life in idle terminals.
How is the requirement for "fast and dynamic" transitions between states measured? This sentence should be clarified, since it is confusing to the reader.

Suggested Remedy

Clarify this requirement or make the sentence an informative lead-in to the paragraph. It could be done as follows: "The AI is intended to support multiple protocol states with dynamic transitions between states."

Proposed Resolution

The AI shall support multiple protocol states with fast and dynamic transitions among them. It will provide efficient signaling schemes for allocating and de-allocating resources, which may include logical in-band and/or out-of-band signaling, with respect to resources allocated for end-user data. The AI shall support paging polling schemes for idle terminals to promote power conservation for MTs.

Proposed Resolution with Recommendation by

Accepted-Modified

Joanne Wilson

Is the intent of the sentence to promote power management "hooks" in the air interface? The requirement should not mandate any particular technique to achieve this.

Suggested Remedy

Change to read: ...shall provide power conservation features to improve battery life in idle terminals.

Proposed Resolution with Recommendation by

Accepted

Joanne Wilson

this is a good change from a design requirement to the more appropriate functional requirement.
The requirements are vague and unmeasurable. We recommend deletion. There is also a fragment that should be removed, starting on line 9.

Suggested Remedy
Delete the requirement or make it more quantitative than it is.

Proposed Resolution: Accepted
Recommendation by Joanne Wilson

Resolution of Group
Decision of Group:

Reason for Group's Decision/Resolution

Group’s Notes

Group’s Action Items

Proposed Resolution: Accepted
Recommendation by Lalit Kotecha

Resolution of Group
Decision of Group:

Reason for Group’s Decision/Resolution

Group’s Notes

Group’s Action Items
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Suggested Remedy
Delete this reference.

Proposed Resolution
Recommendation: Accepted
Recommendation by: Lalit Kotecha

Resolution of Group
Decision of Group:

Reason for Recommendation

Group’s Notes

Comment # 257
Comment by: Ayman, Arak, Jim Naguib, Sutivong, Tomcik
Page 23 Line 5 Fig/Table# 5

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Suggested Remedy
Delete this reference.

Proposed Resolution
Recommendation: Accepted
Recommendation by: Lalit Kotecha

Resolution of Group
Decision of Group:

Reason for Recommendation

Group’s Notes

Group’s Action Items

Comment # 258
Comment by: Ayman, Arak, Jim Naguib, Sutivong, Tomcik
Page 23 Line 9 Fig/Table# 5

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Suggested Remedy
Delete this reference.

Proposed Resolution
Recommendation: Accepted
Recommendation by: Lalit Kotecha

Resolution of Group
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Reason for Recommendation

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