Response to Comments from 802.20 Working Group regarding modified 802.16e PAR

1. The basis on which 802.20 and 802.16e PARs were authorized was that the projects were unique due to the following differences:

Issues regarding distinct identity between the 802.16e and 802.20 PARs are not incorporated in any formal documents. However, some discussion items were represented in the presentation "MBWA and 802.16e: Two Markets – Two Projects" (802.16sgm-02/16 or 802m_ecsg-02/15). This document provides a two-page table of distinct elements. This list is far broader than the brief one below. Therefore, even if the PAR change could be construed as blurring the lines on all three points below, this would not necessarily blur the overall distinct identity. Furthermore, we disagree that the proposed changes in these areas compromise the distinct identity, as explained below:

a) .16e required backwards compatibility with Fixed Access (16a). 802.20 was to be a clean sheet design with no constraints

The approved 802.16e PAR does not in fact refer to "backwards compatibility." Interoperability, but not "backwards compatibility," is addressed in the "Additional Notes" clause.

The proposed PAR modification addresses backward compatibility with the fixed access standards. We appreciate that you have called to our attention the lack of clear expression of this fact in the PAR. As a result of your comment, we have strengthened the text on this topic, adding to the Additional Notes the statement that solutions will be "continuing to provide a backward-compatible mobile upgrade path to all systems conforming to IEEE Standard 802.16-2004."

To the extent that one takes the "clean sheet design" of 802.20 as a critical distinguishing factor between the projects, the proposed alterations to the language of backward compatibility in no way affect that distinction.

b) .16e was to address the frequency bands between 2-6 GHz. 802.20 the frequency bands below 3.5 Ghz

The proposed modification does indeed drop the low-frequency limit. This change was made to accommodate the corresponding the low-frequency

limit in the revised base standard (IEEE Standard 802.16-2004). This will enable low-frequency fixed systems to have a backward-compatible upgrade to fixed/mobile support.

With either the existing 802.16e PAR or the proposed modification, spectrum overlap with the 802.20 PAR exists. Therefore, it is clear that band overlap is not the critical factor in determining distinct identity.

Your comment has stimulated us to reconsider the frequency range. As a result, we have revised the draft PAR to reinstate the 6 GHz upper limit.

c) .16e was only interested in channels wider than 5 MHz. 802.20 was addressing channels as narrow as 1.25 MHz

We can find no proposed modification related to channel bandwidth. Furthermore, we do not find any reference in the 802.16e PAR or Five Criteria to the fact that 802.16e was restricted to, or "interested in," only channels wider than 5 MHz. We note that the document "MBWA and 802.16e" Two Markets – Two Projects" states that 802.16e has "Typical Channel BW >5 MHz" and 802.20 has "Typical Channel BW <5 MHz." However, we do not consider this a specific limitation. In fact, even the obsolete IEEE Standard 802.16a for fixed systems called out channel bandwidth as low as 1.75 MHz.

*2. The current PAR as indicated in item 19 allows Non-Backward Compatible Modes. Such a project **is** already being done by 802.20. Furthermore, the rationale for when backward compatible is required and when it is not clearly has no technical sound justification; viz. FFT sizes 1024, 512 and 128 are not required to remain compatible, whereas the 256 and 2048 FFT sizes are. Backward compatibility should be required in all modes.*

See response above to Item 1a.

3. With no stated rationale or justification the amended PAR (see Item 13) has removed the lower limit of the 2 GHz (specified in item 12 of the original PAR) and replaced the upper limit with 11GHz. Again this blurs the distinction between 802.20 and 802.16. The lower limit should be maintained.

See response above to Item 1b.

4. The reasons for the scalable PHY were based on support of 1.25 MHz channels. As described above these are already covered by 802.20.

See response above to Item 1c.

The proposed PAR modification does not refer to 1.25 MHz channels or to their relationship to a scalable PHY.

Furthermore, we don't see any reason to restrict the 802.16e channel widths. In the event that the 802.20 Working Group eventually produces a standard supporting 1.25 MHz, we do not see why this should prohibit an established 802 air interface from using the same channel width. Doing so would be analagous to requiring that 802.11g use a different channel bandwidth from 802.11b.

5. Even the sub-criterion (Distinct Identity) of "Easy for the document reader to select the relevant specification" would be violated by this amendment as no reader expects to find a collection of disparate specifications with multiple permutations on PHY/MAC/Mobile/Fixed in a single document and have to sort out what would be applicable.

The document reader will select the relevant specification based primarily on the title. The proposed modification does not alter the title. The publisher will normally provide an abstract for additional guidance.

The original PAR that provides for mobility support via FULLY backward compatible systems was unique – the revised PAR is redundant and not needed as such a project can and is already authorized in the 802.20 PAR.

See response above to Item 1a. The proposed modified PAR does indeed specify backward compatibility requirements. Moreover, we believe that backward compatibility is not the key issue, or even one of the leading issues, in establishing distinct identity.