

Before the  
Federal Communications Commission  
Washington, D.C. 20554

In the matter of	)	
	)	
MISSISSIPPI STATE UNIVERSITY	)	WT Docket No. 02-55
	)	
and	)	Mediation No. TAM-32234
	)	
NEXTEL COMMUNICATIONS, INC.	)	

MEMORANDUM OPINION AND ORDER

Adopted: August 2, 2013

Released: August 2, 2013

By the Deputy Chief, Policy and Licensing Division, Public Safety and Homeland Security Bureau:

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**I. INTRODUCTION**

1. This is a case referred for *de novo* review, after remand<sup>1</sup>, from Wave 3 Stage 2 mediation by the 800 MHz Transition Administrator, LLC (TA). This case involves a dispute between Mississippi State University (Licensee or MSU) and Nextel Communications, Inc. (Sprint)<sup>2</sup> (collectively the Parties) concerning the appropriate method of rebanding MSU’s system. For the reasons set out below, we approve the Radio Realignment rebanding solution advanced by Sprint and disapprove certain of MSU’s claimed costs as excessive.

**II. EXECUTIVE SUMMARY**

2. The *800 MHz Report and Order* and subsequent orders in this docket require Sprint to negotiate a contract (known as a Frequency Reconfiguration Agreement or FRA) with each 800 MHz licensee that is subject to rebanding.<sup>3</sup> The FRA must provide for retuning of the licensee’s system to its

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<sup>1</sup> Mississippi State Univ. and Nextel Communications, Inc., *Order Reopening the Record*, 27 FCC Rcd 8351 (PSHSB 2012)(*First Remand Order*); Mississippi State Univ. and Nextel Communications, Inc., *Second Order Reopening the Record*, 28 FCC Rcd 61 (PSHSB 2013)(*Second Remand Order*).

<sup>2</sup> For purposes of uniformity in 800 MHz rebanding orders, we refer herein to Nextel Communications, Inc. as its parent company, Sprint Nextel Corp. (Sprint).

<sup>3</sup> See *Improving Public Safety Communications in the 800 MHz Band, Report and Order, Fifth Report and Order, Fourth Memorandum Opinion and Order, and Order*, 19 FCC Rcd 14969, 15075-77 (2004)(*800 MHz Report and Order*); *Improving Public Safety Communications in the 800 MHz Band, Supplemental Order and Order on*

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replacement channel assignments at Sprint's expense, including the expense of retuning or replacing the licensee's radio units as required.<sup>4</sup> Sprint must provide the rebanding licensee with "comparable facilities"<sup>5</sup> on the new channel(s), and must provide for a seamless transition to enable licensee operations to continue without interruption during the retuning process.<sup>6</sup>

3. Although this case presents a complex fact pattern and procedural history, it ultimately turns on two basic tenets of rebanding: the Minimum Cost Standard and the abovementioned Comparable Facilities Standard. The Minimum Cost Standard assigns MSU the burden of proving that the rebanding solution it has proposed is reasonable, prudent, and the "minimum necessary to provide facilities comparable to those presently in use."<sup>7</sup> The Minimum Cost Standard takes into account not only cost, but all of the objectives of the proceeding, including completing the rebanding process in a timely and efficient manner and a seamless transition that preserves public safety licensees' ability to operate during the transition.<sup>8</sup> The Comparable Facilities Standard dictates that, after the licensee's system is rebanded, the licensee has facilities comparable – but not necessarily identical – to its pre-rebanding facilities.<sup>9</sup>

4. Here, the Parties dispute which of three methods<sup>10</sup> of rebanding MSU's system will best meet the Commission's Comparable Facilities Standard, *i.e.*, provide functionality equivalent to MSU's existing 3-Site Scan<sup>11</sup> system post-rebanding. Although Harris Corporation (Harris), the manufacturer of

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*Reconsideration*, 19 FCC Rcd 25120 (2004)(*800 MHz Supplemental Order*); *Improving Public Safety Communications in the 800 MHz Band, Memorandum Opinion and Order*, 20 FCC Rcd 16015 (2005).

<sup>4</sup> *800 MHz Report and Order*, 19 FCC Rcd at 14977.

<sup>5</sup> *Id.* at 15077. ("Comparable facilities are those that will provide the same level of service as the incumbent's existing facilities, with transition to the new facilities as transparent as possible to the end user. Specifically, (1) equivalent channel capacity; (2) equivalent signaling capability, baud rate and access time; (3) coextensive geographic coverage; and (4) operating costs." (Footnotes omitted)). The comparable facilities definition for the 800 MHz band was adopted in 1997 when the Commission provided for relocation of site-based licensees in the "Upper 200" channels by Economic Area (EA) licensees. Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, *Second Report and Order*, PR Docket 93-144, 12 FCC Rcd 19079, 19111-19115 (1997). See 47 CFR § 90.699(d). The Commission expressly adopted the same definition of comparable facilities for purposes of 800 MHz rebanding. *800 MHz Report and Order*, 19 FCC Rcd at 15077 n.526.

<sup>6</sup> *800 MHz Report and Order*, 19 FCC Rcd at 14986.

<sup>7</sup> *Id.* at 15074; *800 MHz Supplemental Order*, 19 FCC Rcd at 25152 (2004).

<sup>8</sup> *Improving Public Safety Communications in the 800 MHz Band, Memorandum Opinion and Order*, 22 FCC Rcd 9818, 9820 (2007)(*Rebanding Cost Clarification Order*). The Commission clarified that the term "minimum necessary cost" does not mean the absolute lowest cost under any circumstances, but the "minimum cost necessary to accomplish rebanding in a reasonable, prudent, and timely manner." *Id.*

<sup>9</sup> *Illinois Public Safety Agency Network and Nextel Communications, Inc., Memorandum Opinion and Order*, 26 FCC Rcd 4061, 4069 (PSHSB 2011)("[W]hen establishing a standard for licensees' entitlement to post-rebanding facilities the Commission advisedly used the term 'comparable,' not 'identical,' thus allowing for, *e.g.*, *de minimis* differences between pre- and post-rebanding facilities [ . . . ].")

<sup>10</sup> MSU had proposed a fourth method – replacement of its system with ANSI 102 "Project 25" technology – but withdrew the proposal, supposedly "in a show of good faith." Mississippi State University Proposed Resolution Memorandum (MSU PRM) at 17.

<sup>11</sup> Three-Site-Scan, "allows the user to create a subscriber based 'multisite roaming' system without transmitter sites [ . . . ] being networked together." *Id.* at 2. MSU estimates that fifty percent of its radio inventory is capable of

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MSU's radios, has long stopped manufacturing 3-Site Scan legacy radios,<sup>12</sup> MSU claims that it must retain 3-Site Scan functionality post-rebanding, or, at least, functionality that "closely mimic[s]" 3-Site Scan.

5. Evaluating the three rebanding methodologies proposed by the Parties under the Minimum Cost Standard, we first reject, as unreasonable and imprudent, Sprint's solution that would require MSU staff to carry two radios. To determine which of the remaining two proposed solutions provides MSU with comparable facilities at the minimum cost, we then compare MSU's proposal to deploy a custom switch to mimic a legacy functionality with Sprint's proposal to maintain that legacy functionality, post-rebanding, by using MSU's existing radios with reduced maximum frequency deviation.<sup>13</sup> Because reducing radio frequency deviation is less expensive than deploying a custom switch, we then determine whether Sprint's proposal provides MSU with comparable facilities within the meaning of that term in the Commission's lexicon. The Commission generally limits its examination of comparability to four factors (1) equivalent channel capacity; (2) equivalent signaling capability, baud rate and access time; (3) coextensive geographic coverage; and (4) operating costs.<sup>14</sup>

6. MSU raises several arguments in support of its claim that reducing the frequency deviation of its radios will render them non-comparable. However, as we explain in detail below, in examining these claims we find that the shortcomings MSU complains of do not invoke any of the four factors of comparability, *supra*. Moreover, the complained of shortcomings already exist in the radios and are not exacerbated when the frequency deviation is reduced and the operating frequency changed. Thus, we conclude that reducing frequency deviation will provide MSU with comparable facilities, making Sprint's "Radio Realignment" proposal the solution that best meets the Minimum Cost Standard.

7. We then address individual cost disputes between the parties in light of both the Minimum Cost Standard and the realities of what implementing the Sprint proposal will entail. Our analysis demonstrates that MSU has overstated its costs in several respects and we therefore disapprove several such overstated costs.

### III. BACKGROUND

8. The TA Mediator issued a Recommended Resolution<sup>15</sup> in this case on June 11, 2012 and the Parties submitted Statements of Position on June 25, 2012.<sup>16</sup> On July 26, 2012, the Public Safety and Homeland Security Bureau (Bureau), after *de novo* review of the mediation record, issued its *First Remand Order*, finding that the then-existing record was insufficient for the Bureau to decide the

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3-Site Scan and that roughly 200 radios are enabled to use 3-Site Scan functionality at any one time. These radios include four different models: MDX and MDR mobile radios and PCS and 300P portable radios. See MSU PRM at 5.

<sup>12</sup> See *id.* at Exhibit 3, Letter from Steve Smith, Project Manager, Harris Corp., to Ralph Nobles, P.E., MSU (dated May 10, 2012)(Harris Letter). ("Harris no longer manufactures or sells any of the EDACS 3-Site Scan legacy radios used by [MSU].")

<sup>13</sup> Frequency deviation is "the extent to which an FM carrier moves from its center frequency during modulation." Newton's Telecom Dictionary, p.351, 20<sup>th</sup> Ed. CMP Books, San Francisco, Calif.

<sup>14</sup> See *supra* n.5.

<sup>15</sup> TA Recommended Resolution, Mediation No. TAM-32234, filed June 11, 2012 (RR).

<sup>16</sup> Statement of Position of Nextel Communications, Inc., June 25, 2012 (Sprint SOP); Statement of Position of Mississippi State University, June 25, 2012 (MSU SOP).

feasibility of the Radio Realignment Solution advanced by Sprint.<sup>17</sup> More specifically, the record as it existed at the time did not contain information sufficient for the Bureau to determine whether Sprint's proposal to reduce the frequency deviation of the Licensee's 3-Site Scan radios from 5 kHz to 4 kHz would provide MSU with comparable facilities.<sup>18</sup> To effect that determination, the Bureau remanded this case to the TA Mediator with directions to have Sprint submit a representative sample of each MSU radio for testing by a Commission-certified laboratory.<sup>19</sup> The Bureau's review of the laboratory results and the pleadings of the parties<sup>20</sup> led the Bureau to conclude that the results were still insufficient to determine that reducing the maximum frequency deviation of MSU's radios would provide MSU with comparable facilities relative to the Commission's emission mask<sup>21</sup> and environmental rules.<sup>22</sup> Accordingly, in the *Second Remand Order*, the Bureau again remanded the case to the TA Mediator with instructions to have the laboratory test MSU's radios for compliance with emission masks G and H in both the old and new NPSPAC bands,<sup>23</sup> and to determine whether the radios met Commission standards<sup>24</sup> for face Specific Absorption Rate (SAR)<sup>25</sup> in both the old and new NPSPAC band.

#### IV. DISCUSSION

##### A. The Comparable Facilities Dispute

9. Below we discuss in greater detail the three rebanding solutions proffered by the Parties:

10. *Interleaved Solution.* Sprint proposes that the Licensee move to the Interleaved Band and retain its current system.<sup>26</sup> This proposal requires Sprint to replace MSU's existing radios capable of operating on the former NPSPAC channels (821-824 MHz and 866-869 MHz) with comparable models capable of operating on the new NPSPAC channels (806-809 MHz and 851-854 MHz). It also requires users of MSU's 3-Site Scan radios to keep those radios and carry an additional radio for communicating

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<sup>17</sup> See Sprint Proposed Resolution Memorandum (Sprint PRM) at 38-44. See also *First Remand Order*, 27 FCC Rcd at 8351.

<sup>18</sup> See *First Remand Order*, 27 FCC Rcd at 8355.

<sup>19</sup> PC TEST Engineering Laboratory, Inc., of Columbia, Maryland performed the testing.

<sup>20</sup> Comments of Mississippi State University, Nov. 21, 2012 (MSU Comments); Comments of Nextel Communications, Inc., Nov. 21, 2012 (Sprint Comments); Reply of Nextel Communications, Inc. to the Comments of Mississippi State University, Dec. 11, 2012 (Sprint Reply Comments); Motion for Leave to File of Mississippi State University, Dec. 13, 2012; Sur-reply of Mississippi State University, Dec. 24, 2012 (MSU Surreply).

<sup>21</sup> See 47 C.F.R. § 90.210. The emission mask is the technical specification that limits the distribution of power of a radio transmitter as a function of frequency. Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communication Requirements Through the Year 2010, *First Report and Order and Third Notice of Proposed Rulemaking*, 14 FCC Rcd 152, 213 n.337 (1998). The emission mask is an important technical parameter that affects the efficient use of a frequency band by limiting emissions from one channel into adjacent channels. See 1998 Biennial Regulatory Review - 47 C.F.R. Part 90 - Private Land Mobile Radio Services, *Report and Order and Further Notice of Proposed Rule Making*, 15 FCC Rcd 16673, 16689 (2000).

<sup>22</sup> 47 C.F.R. § 2.1091 *et seq.*

<sup>23</sup> *Second Remand Order*, 28 FCC Rcd at 61.

<sup>24</sup> 47 C.F.R. § 1.1310.

<sup>25</sup> The original laboratory results assumed that body SAR represented the worst case SAR and the laboratory therefore did not include face SAR. See *Second Remand Order*, 28 FCC Rcd at 61.

<sup>26</sup> RR at 5.

with NPSPAC interoperability partners. MSU objects to this proposal, *inter alia*, because it believes it is unreasonable to expect officers to carry two radios, either on their equipment belts or in their vehicles.<sup>27</sup>

11. *Radio Realignment Solution.* In the alternative, Sprint proposes to reduce the maximum frequency deviation on MSU's 3-Site Scan enabled radios from 5 kHz to 4 kHz, thus allowing them to be retuned to the new NPSPAC band and also to operate on the interleaved channels.<sup>28</sup> MSU opposes the Sprint proposal, alleging that, in order to effectuate this solution, its radios would have to undergo a new equipment certification and a demonstration of compliance with the Commission's emission mask, frequency stability, and other technical rules.<sup>29</sup>

12. *Integrated Multisite Controller Solution.* MSU proposes an Integrated Multisite Controller (IMC) switch to mimic 3-Site Scan functionality.<sup>30</sup> Sprint claims this solution represents an impermissible upgrade to MSU's system because it would provide MSU with networking capability its system currently lacks.<sup>31</sup>

### 1. MSU Position

13. MSU claims that retuning its radios to operate in the new NPSPAC band and reducing the frequency deviation "are outside the bounds of the existing type acceptance/certification grants for these radios."<sup>32</sup> MSU's vendor, Harris, suggests that radio realignment represents a Class II permissive change,<sup>33</sup> requiring testing to "[demonstrate] compliance with the [Commission's] emission mask requirements (Section 90.210 of its rules) and with its frequency stability requirements (Section 90.213 of its rules) [. . .]."<sup>34</sup> Harris's outside counsel cautions that the Licensee's legacy radios might not conform to current Commission requirements regarding, *e.g.*, radio frequency (RF) exposure limits.<sup>35</sup> Moreover, without providing specific details, Harris estimates that either recertification or the testing required under the permissive change rules would require "multiple months and costs in the six-figure range."<sup>36</sup>

### 2. Sprint Position

14. Sprint disputes MSU's claim that the Radio Realignment Solution would require recertification of the Licensee's radios. It argues that reducing the maximum frequency deviation of MSU's radios would not alter "the design, circuitry or construction of the radios" and merely requires "a software adjustment [. . .] within the scope of [their] already existing certification."<sup>37</sup> In support of this

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<sup>27</sup> MSU PRM at 31-32.

<sup>28</sup> RR at 7.

<sup>29</sup> MSU PRM at 37; Harris Letter at 2.

<sup>30</sup> MSU claims that "the TA Mediator never permitted the parties to negotiate MSU's IMC proposal," and alleges that this supposed lack of permission "represents a serious flaw in the mediation process in this case." MSU PRM at 17.

<sup>31</sup> RR at 5-6. (Sprint claims that, with the IMC switch, MSU would gain certain network functions it currently lacks, thus representing an impermissible upgrade to the system.)

<sup>32</sup> MSU PRM at 37.

<sup>33</sup> *Id.* at 15 n.7.

<sup>34</sup> *Id.* at Exhibit 3.

<sup>35</sup> *See id.*; MSU SOP at 4.

<sup>36</sup> MSU SOP at 3.

<sup>37</sup> Sprint PRM at 6-7.

assertion, Sprint cites to a 1988 Commission *Memorandum Opinion and Order on Reconsideration* that “specifically authorized the grandfathering of existing end user radio equipment *if the deviation were reduced* to allow operation on the NPSAC band.”<sup>38</sup> Sprint also relies on a more recent statement by the Bureau approving a rebanding methodology that involved reducing the maximum frequency deviation on four analog FM voice channels. There, the Bureau noted that “[t]he Commission’s rules do not directly limit the deviation of 800 MHz land mobile transmitters, but do specify an ‘emission mask’ to which the transmitter output waveform must conform.”<sup>39</sup> At most, Sprint submits, adjusting the radio frequency deviation represents a permissive change under the Commission’s certification rules.<sup>40</sup>

### 3. TA Mediator Recommendation

15. The TA Mediator recommends, with a qualification, that the Bureau find that Sprint’s Radio Realignment Solution provides the Licensee with comparable facilities.<sup>41</sup> The TA Mediator deems reasonable Sprint’s assertion that recertification is unnecessary because the realignment “would not result in ‘a change in the design, circuitry or construction’ of the radios [ . . . ].”<sup>42</sup> However, the TA Mediator defers to the Bureau for a final determination of the recertification issue as follows:

If the Commission concludes that recertification is not required, the TA Mediator recommends that the Commission direct the Parties to implement the radio realignment solution. However, absent a Commission determination regarding the need for recertification, the TA Mediator recommends that [Sprint] be required to either (1) include in the FRA a warranty that implementation of the radio realignment solution would not require recertification; (2) fund the reasonable costs of recertification; or (3) fund the reasonable costs of implementing the IMC solution.<sup>43</sup>

16. The TA Mediator also states that the extant record is inadequate to make a concrete recommendation to the Commission, *i.e.*, that “neither Party has submitted adequate support – such as

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<sup>38</sup> Sprint SOP at 7, emphasis in original, *citing* Development and Implementation of a Public Safety National Plan and Amendment of Part 90 to Establish Service Rules and Technical Standards for Use of the 821–824/866–869 MHz Bands by the Public Safety Services, *Memorandum Opinion and Order on Reconsideration*, 3 FCC Rcd 5391, 5397 (1988). There, the Commission “grandfathered” existing radios, stating that a reduction in maximum frequency deviation “is a reasonable approach as it will allow the equipment to be used in the new band without significant effect on frequency use by others [ . . . ].” *Id.*

<sup>39</sup> See Genesee County, New York and Sprint Nextel Corp., *Memorandum Opinion and Order*, 26 FCC Rcd 12772, 12777 (PSHSB 2012). The Commission’s rules once contained a maximum deviation limit for FM systems, however the Commission’s adoption of emission masks rendered “the need for a frequency deviation limit superfluous for FM equipment and irrelevant for non-FM equipment.” Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignment Policies of the Private Land Mobile Radio Services, *Report and Order and Further Notice of Proposed Rule Making*, 10 FCC Rcd 10076, 10124 (1995).

<sup>40</sup> Sprint PRM at 45, n.49.

<sup>41</sup> See RR at 21.

<sup>42</sup> *Id.* at 22.

<sup>43</sup> *Id.*

technical specifications and citations to relevant Commission decisions – to enable the TA Mediator to reach a conclusion regarding this matter.”<sup>44</sup>

#### 4. Statements of Position

17. On June 25, 2012, Sprint filed a Statement of Position (SOP), addressing the TA Mediator’s qualified recommendation. Sprint reiterated that MSU can implement the Radio Realignment Solution without recertifying its radios. It notes that transmitter frequency deviation is not a parameter that the Commission specifically certifies and, as noted *supra*, cites the 1988 Commission order establishing the NPSPAC band in which the Commission grandfathered equipment if the frequency deviation were reduced.<sup>45</sup> Nonetheless, Sprint observes that the Commission is best suited to determine whether recertification is required or whether a limited grandfathering or waiver is preferable.<sup>46</sup>

18. In its SOP, MSU observes that Harris – the manufacturer of MSU’s radios – “believes that recertification is necessary.” MSU states that “it is unaware of any engineering record filed by [Sprint] which provides credible support for [the TA’s assumption that Sprint’s proposal appears reasonable].”<sup>47</sup> MSU asserts that “[i]n the absence of any evidence to contradict the information entered in the record by Harris, the Commission has no credible basis to authorize use of Class I permissive change procedures or to ‘waive’ its equipment modification and/or certification requirements or to permit the realignment to be accomplished without a determination of the NPSPAC interference consequences.”<sup>48</sup> MSU notes that “Harris previously explained in [a] May 9, 2012 letter that the Commission should not waive its equipment certification rules because of the significant adverse interference risks for future harmonized uses of NPSPAC frequencies.”<sup>49</sup> Should operation of the modified radios cause interference to NPSPAC frequencies, MSU argues, “there is the additional risk that the University’s radio operations would be disrupted or even shut down to discontinue causing such interference.”<sup>50</sup> MSU claims the vast majority of potential interference consequences “cannot be adequately addressed after the fact under the terms of a proposed Nextel ‘warranty’ in the FRA.”<sup>51</sup>

#### 5. First Remand

19. Following its consideration of the Parties’ SOPs and its analysis of the record transmitted by the TA Mediator, the Bureau found that “Sprint’s [Radio Realignment] proposal may be reasonable and that the radios may be rendered rule-compliant through software changes, which our Permissive

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<sup>44</sup> *Id.*

<sup>45</sup> Sprint SOP at 6-7. *See also supra* n.38.

<sup>46</sup> Sprint SOP at 7.

<sup>47</sup> MSU SOP at 4.

<sup>48</sup> *Id.*

<sup>49</sup> *Id.* at 5.

<sup>50</sup> *Id.*

<sup>51</sup> *Id.* MSU also argues that “proceeding without a Commission determination puts the University, as a licensee, at risk of being found to be operating in violation of the Commission’s Rules and the validity of its licenses for these radios would be jeopardized.” *Id.* Further, MSU claims that “this would create regulatory compliance risks for the entity performing the radio realignment, *i.e.* regulatory fines or other penalties for failure to comply with Section 2.1043(a) or (b) of the Commission’s Rules (in the case of the original grantee), or with Section 2.929(b) of the Commission’s Rules (in the case of any entity other than the original grantee).” *Id. citing* 47 C.F.R. §§ 2.1403(a-b) and 2.929(b).



Change Policies treat as Class II Permissive Changes.”<sup>52</sup> It concluded, however, that a final determination of the reasonableness of Sprint’s Radio Realignment Solution would have to await evidence that MSU could operate its existing 3-Site Scan radios in the new NPSPAC band with performance comparable to that in the old NPSPAC band, with respect to emission mask conformity, frequency stability, and non-ionizing radiation limits.

20. Accordingly, the Bureau reopened the record and remanded this case to the TA Mediator with instructions to have representative samples of the Licensee’s radios submitted for testing by a Commission-certified laboratory.<sup>53</sup> MSU furnished Sprint with sample radios and, after first aligning the radios to the manufacturer’s published performance specifications, Sprint submitted the radios to PC TEST Engineering Laboratory for testing of (a) frequency stability, (b) emission mask B conformity and (c) non-ionizing radiation.

21. The laboratory concluded that the sample radios met all three tests in both the old NPSPAC band and the new NPSPAC band. The TA Mediator then afforded the Parties the opportunity to comment on the laboratory’s results. In comments filed November 21, 2012, MSU characterized the laboratory’s results as “faulty and incomplete.”<sup>54</sup> MSU claimed that the measurement report for two of the radios contained the same value for conducted power, whereas the radios, because of differences in their output power, would be expected to have different values. MSU attributed the error to the results for one radio being inadvertently copied into the report for another radio.<sup>55</sup>

22. MSU further claimed that the emission mask testing for the radios was incomplete because the laboratory only tested for the radios’ compliance with emission mask B – the mask applicable to radios that employ an audio low pass filter. MSU pointed out that, when its radios operate on their control channel in the trunking mode, they transmit a high speed digital signal and that the circuitry used to generate the digital data does not include an audio low pass filter. Accordingly, MSU argues, the laboratory should have tested the radios for compliance with emission masks G and H, the emission masks applicable, respectively, to the interleaved band and the NPSPAC band, for radios transmitting without an audio low pass filter.<sup>56</sup>

23. MSU also claimed that the laboratory’s power density calculations for the Model MDX radios were incomplete because “the higher gain antenna was not considered in the Power Density calculations for the MDX radio.”<sup>57</sup> MSU claims this oversight affected the Maximum Permissible Exposure (MPE) limits for that radio.<sup>58</sup>

24. In conducting the exposure measurements, the laboratory conducted only “body testing” of Specific Absorption Rates (SAR) because it assumed, based on a report from another laboratory, that

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<sup>52</sup> *First Remand Order*, 27 FCC Rcd at 8355.

<sup>53</sup> *Id.* at 8357.

<sup>54</sup> Comments of Mississippi State University, Nov. 21, 2012 at 2. (MSU Comments).

<sup>55</sup> *Id.*

<sup>56</sup> *Id.* at 3, *citing* 47 C.F.R. § 90.210.

<sup>57</sup> MSU Comments at 5. (MSU had furnished two antennas with the radio, one with higher gain than the other. The initial laboratory calculations for the MDX radio assumed use of the antenna with the lower gain.)

<sup>58</sup> *Id.*

the SAR for the face would be significantly lower than the SAR for the body.<sup>59</sup> MSU submitted that the laboratory should have conducted face testing of SAR as well.<sup>60</sup>

25. Sprint also filed comments on November 21, 2012.<sup>61</sup> It claimed that the test results confirmed that MSU would receive comparable facilities if the maximum frequency deviation of its radios were reduced and the radios were retuned to operate in the new NPSPAC band.<sup>62</sup> It argued that the laboratory's statement of compliance<sup>63</sup> should be dispositive of whether MSU would receive comparable facilities.

26. In light of MSU's claims that the laboratory results were faulty and incomplete, the TA Mediator required Sprint to file a reply to MSU's comments.<sup>64</sup> In reply comments filed December 11, 2012,<sup>65</sup> Sprint conceded that the test results for one of the radios had inadvertently been copied into the test results form for another radio, and provided a corrected page. Sprint also argued that it was unreasonable to require MSU's radios to comply with emission mask G or H because the laboratory saw no such need for testing and because "only mask B testing was required for the original equipment authorization for the 300P model, and because all the units were intended for voice operation."<sup>66</sup> Sprint also argued that, because a radio's emission mask conformance is a function of the radio's frequency deviation, not its center frequency, there was no indication that additional testing would reveal any differences in emissions when the radios were retuned to the new NPSPAC band.<sup>67</sup>

27. In response to MSU's claim that the power density of one of the radios was understated because it was not calculated based on the gain of a higher gain antenna, Sprint provided results of calculations, using the higher gain antenna, showing that the radio did not exceed the MPE limit (for occupational/controlled exposure) at a distance of 25.4 cm (10 inches).<sup>68</sup> Sprint also questioned the need for MPE calculations in the first instance, arguing that power density calculations do not consider the frequency deviation of a radio, *i.e.*, that there is no frequency deviation term in the equation  $P_d = (P_{out} *$

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<sup>59</sup> *Id.* at 6.

<sup>60</sup> *Id.*

<sup>61</sup> Comments of Nextel Communications, Inc., Nov. 21, 2012 (Sprint Comments).

<sup>62</sup> *Id.* at 5.

<sup>63</sup> Sprint points out that the laboratory report for each radio states "[t]his equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in compliance with the measurement procedures specified in §2.1091 and § 90[sic]."

<sup>64</sup> Order to Submit Reply Comments, Nov. 27, 2012.

<sup>65</sup> Reply of Nextel Communications, Inc. to the Comments of Mississippi State University, Dec. 11, 2012. (Sprint Reply).

<sup>66</sup> *Id.* at 4-5. The other 3 radios in the samples provided by MSU were manufactured before the Emission Mask rules were adopted in 1995. *Id.* at 5, *citing* Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, *Report and Order and Further Notice of Proposed Rulemaking*, 10 FCC Rcd 10076 (1995).

<sup>67</sup> Sprint Reply at 5.

<sup>68</sup> *Id.* at 6.

$G)/(4\pi r^2)$ .<sup>69</sup> Therefore, Sprint argued, reduction of the frequency deviation of MSU's radios would have no effect on RF exposure.<sup>70</sup>

28. Addressing MSU's claim that the laboratory should have tested MSU's portable radios for face SAR in addition to body SAR, Sprint pointed out that one of MSU's radios, the model 300P, had previously undergone testing and "those results showed that body-SAR results were considerably higher than face-SAR."<sup>71</sup> Thus, Sprint reasoned, "the laboratory had no reason to test face-SAR as it was not the worst case exposure situation."<sup>72</sup> Sprint also argued that there was no need for face SAR testing of the other MSU radio – the model PCS – because the laboratory, in its engineering judgment, decided that the model 300P and model PCS radios were sufficiently similar that it could safely assume that the body SAR measurements would represent the worst case.<sup>73</sup> In response to MSU's question as to whether the lab performed the exposure testing with the speaker-microphones attached to the radios, Sprint provided an updated test report from the laboratory confirming that they were.

29. Following Sprint's submission of reply comments, MSU moved, on December 13, 2012, for permission to submit a surreply, arguing that Sprint's reply comments differed from information obtained from MSU's radios' manufacturer, Harris. The TA Mediator granted the motion, directing MSU to submit its surreply by December 24, 2012.<sup>74</sup>

30. In a timely-filed surreply, MSU restated its argument that the laboratory should have tested the radios for compliance with emission masks G and H.<sup>75</sup> It faulted the laboratory and Sprint for not reporting, for the model MDX mobile radio, "the Power Density at the standard 20 cm separation requirement prescribed by FCC Rule §2.1091" and claimed that such a calculation "would show that the MPE limit would be exceeded for the frequencies in use."<sup>76</sup> MSU submitted that "the Commission must review the lack of calculated power density at the 20 cm benchmark for compliance with the Commission's Order and the Commission's current rules."<sup>77</sup>

31. With respect to the laboratory's decision not to test the model PCS radio for face SAR because the model 300P showed that body SAR was the worst case, MSU deemed it "inappropriate for PCTEST [the laboratory] to conclude that any test documentation for the [model] 300P radio should also apply to [model] PCS." It claimed that the two radios are not built on the same "technical platform," and, therefore, that the model PCS radio should be "evaluated in its own right" for both face and body SAR.<sup>78</sup>

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<sup>69</sup> *Id.* at 7. In the Friis Calculation of power density, P is output power to the antenna (in milliwatts), G is antenna gain,  $\pi$  is a constant and r is the distance from the antenna's radiation center (in cm). See H.T.Friis, *Proc. IRE*, vol. 34, p.254. 1946.

<sup>70</sup> Sprint Reply at 7.

<sup>71</sup> *Id.* at 9.

<sup>72</sup> *Id.* at 10.

<sup>73</sup> *Id.*

<sup>74</sup> Email from Jonathan J. Nadler, Esq., TA Mediator, to Alan Tilles, Esq. and Lauren Janosko, Dec. 14, 2012.

<sup>75</sup> Sur-Reply of Mississippi State University at 3-4.

<sup>76</sup> *Id.* at 4.

<sup>77</sup> *Id.* at 5.

<sup>78</sup> *Id.* at 6.

## 6. Second Remand

32. On conclusion of the pleading cycle authorized by the TA Mediator, the Bureau directed the TA Mediator to forward the record without proposed resolution memoranda or a recommended resolution of the case. On inspection of the record, the Bureau determined that it did not address MSU's contentions that the laboratory failed to make a finding of comparability with reference to emission masks G and H, or test the model PCS radio for both face and body SAR. Accordingly, the Bureau issued a *Second Order Reopening the Record* on January 13, 2013, remanding the case "to the TA mediator for the limited purpose of adducing evidence on the radios' conformity to emission masks G and H, when operated in the digital mode without an audio low-pass filter; and the radios' conformity to the SAR limits in Sections 2.1091 and 2.1093 of the Commission's rules."<sup>79</sup> The Bureau's order provided that the Parties could submit supplementary statements of position once additional testing was completed and the TA Mediator transmitted the record to the Bureau.<sup>80</sup>

## 7. Supplemental Statements of Position

33. On March 7, 2013, the TA Mediator forwarded the record, consisting of the laboratory's supplementary findings, and notified the Parties that he had done so.<sup>81</sup> On March 12, 2013, MSU and Sprint timely filed their supplementary statements of position.

### a. Sprint Position

34. Sprint's position is essentially that MSU will receive comparable facilities if its radios exhibit the same performance characteristics in the new NPSPAC band as they did in the old NPSPAC band.<sup>82</sup> Sprint contends that, if the performance of MSU's radios is deficient in both the old and new NPSPAC bands, then MSU, not Sprint, is responsible for rendering the radios rule-compliant.<sup>83</sup> Sprint also cited two cases – one originating in the Bureau, the other in the Wireless Telecommunications Bureau – in which the bureaus waived compliance with emission mask H because the waiver proponent required high-speed data transfer with an emission waveform that exceeded the Mask H limits.<sup>84</sup>

### b. MSU Position

35. MSU claims the IMC Solution is the only solution that fully complies with the Commission's rules because, under the Radio Realignment Solution, two models of its radios do not meet

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<sup>79</sup> *Second Remand Order*, 28 FCC Rcd at 61.

<sup>80</sup> *Id.* at 63. The supplementary statements of position were due five days following transmittal of the record and were limited to 5 pages exclusive of appendices. *Id.*

<sup>81</sup> On review of the second supplemental report from the laboratory, Bureau staff noted that the emission mask exhibits for the Model 300P radio lacked a depiction of the unmodulated carrier and that the body SAR evaluations were referenced to the 8W/kg spatial peak SAR instead of the spatial average SAR standard of 0.4 W/kg. Staff directed the TA Mediator to have the laboratory supply a corrected emission mask exhibit and to explain why it referenced its measurements to the spatial peak SAR. The laboratory complied on Mar. 22, 2013. *See* Measurement Report OY1210181524-R2.OWD.

<sup>82</sup> Statement of Position of Nextel Communications, Inc., Mar. 12, 2013 (Sprint Supplemental SOP) at 1. ("The additional testing establishes that MSU's 3-Site Scan radios will be comparable pre- and post-realignment as to face SAR and G and H mask emissions.")

<sup>83</sup> *Id.* at 2-3, *citing* City of Parma, Ohio and Sprint Nextel Corp., *Memorandum Opinion and Order*, 25 FCC Rcd 13485, 13490-13491 (PSHSB 2010)(*Parma*).

<sup>84</sup> Sprint Supplemental SOP, *citing* City of Emeryville, California, *Order on Reconsideration*, 22 FCC Rcd 1778, 1780 (PSHSB 2007); County of York, South Carolina, *Order*, 21 FCC Rcd 9526, 9527 (WTB 2006).

the Commission's emission mask H requirements in the old NPSPAC band when modulated with a 9600 baud digital control channel signal and would continue not to meet those requirements when retuned to the new NPSPAC band.<sup>85</sup> MSU also faults the laboratory for evaluating spatial peak SAR (at 8 W/kg), instead of spatial average SAR (at 0.4 W/kg) because MSU believes that spatial average is the "measurement methodology implied by the ANSI/IEEE limits."<sup>86</sup> MSU also notes that the laboratory only subjected one of each model of radio to testing and that the Commission should be concerned about "samples of one."<sup>87</sup>

## 8. Findings

### a. The Radio Reconfiguration Solution

#### (i) Compliance With the Commission's Environmental Rules

36. As an initial matter, we address a matter not referred to the TA Mediator in the *Second Order Reopening the Record, i.e.*, MSU's faulting the laboratory for failure to calculate "Power Density at the standard 20 cm separation requirement prescribed by FCC Rule §2.1091"<sup>88</sup> for MSU's model MDX mobile radios operating with high gain antennas. We conclude that the laboratory was not required to provide the power density at 20 cm but agree that, had it done so, the value so obtained would exceed Commission standards for operation of radios unless the licensee provided warning labels and information to users "concerning minimum separation distances [. . .]."<sup>89</sup>

37. Instead of calculating the power density at 20 cm, the laboratory calculated a more meaningful figure – the distance that a person would have to maintain from the antenna to restrict exposure to at or below the regulatory limit. The resultant value was 25.4 cm (10 inches).<sup>90</sup> MSU, however, claims that the laboratory's calculation "deprived [the Commission] of the actual value of MPE at its 20 cm (8 inches) benchmark which, if calculated, would show that the MPE limit would be exceeded for the frequencies in use."<sup>91</sup> MSU's claim is disingenuous. Calculating the power density at 20 cm does not require laboratory testing. Rather, simply inputting the operating parameters of the MDX radio into the Friis equation described *supra*, returns a power density value of 4.38 mW/cm<sup>2</sup> at a distance

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<sup>85</sup> Supplemental Statement of Position of Mississippi State University (MSU Supplemental Statement) at 2. MSU notes that the Models 300P and MDR radios do not meet the emission mask H requirements in the new NPSPAC band and that the Model MDX radio does not meet the emission mask H requirements in the old NPSPAC band, but, when retuned to the new NPSPAC band, does meet emission mask H requirements. *Id.* MSU also claims that the model 300P radio's emissions, as shown in the laboratory results, are "overstated," but even if properly depicted would still show non-compliance with Emission Mask H. *Id.* at 3. MSU also claims that Emission Mask H was improperly depicted for the model MDX radio, and, if properly depicted, would "likely" show that the radio's emissions fall outside the H Mask. *Id.* Given our decision, *infra*, MSU's criticism of the laboratory results is not material.

<sup>86</sup> MSU Supplemental Statement at 4.

<sup>87</sup> *Id.*

<sup>88</sup> MSU Surreply at 5.

<sup>89</sup> 47 C.F.R. § 2.1091(d)(3). "If appropriate, compliance with exposure guidelines for devices in this section can be accomplished by the use of warning labels and by providing users with information concerning minimum separation distances from transmitting structures and proper installation of antennas."

<sup>90</sup> Sprint Reply Comments, Appendix A at 47.

<sup>91</sup> *Id.*

of 20 cm (8 inches).<sup>92</sup> The fact that the power density at 20 cm exceeds the value in Section 1.1310 of the Commission's rules does not mean that a retuned MDX radio with a high gain antenna would not provide MSU with comparable facilities, because – as MSU concedes – “any continued use of the MDX radio and higher gain antenna can be characterized to its users pursuant to FCC Rule §2.1091(d)(3), where compliance with exposure guidelines can be accomplished by use of warning labels and providing users with information concerning minimum separation distances and proper installation of the mobile antennas as appropriate.”<sup>93</sup>

38. In fact, all that MSU has proven is that use of the model MDX radio with a high gain antenna requires a warning label and informing its users not to get closer than 10 inches to the antenna. MSU has been subject to this restriction ever since it began using high gain antennas with its model MDX mobile radios. Therefore, the laboratory made no mistake when it reported the minimum separation distance required for compliance with the Commission's exposure rules. Moreover, we agree with Sprint that the power density of MSU's radios is irrelevant to a determination of whether the radios comply with the Commission's environmental rules inasmuch as Maximum Permitted Exposure (MPE) is a function of the power of the radio and its frequency of operation – not its frequency deviation.<sup>94</sup> Therefore, retuning MSU's radios to the NPSPAC band and reducing their maximum frequency deviation has no effect on the power density of the radio at any given distance. Finally, we note Sprint's observation that MSU proposed to employ replacement radios with higher power (35 watts) than its existing radios and these radios would have a higher power density at 20 cm than MSU's existing radios.<sup>95</sup>

39. In sum, MSU knew, or should have known, that the modifications to be made to the MDX radios – retuning them to the NPSPAC band and reducing their frequency deviation – would have no effect on the radios' compliance with the Commission's rules governing MPE. Its implication to the contrary, in an attempt to undercut the Radio Realignment Solution, is unavailing.<sup>96</sup>

#### (ii) Comparable Emission Mask Performance

40. The laboratory results following the second remand, transmitted March 7, 2013 by the TA Chief Mediator, show that two models of MSU's radios do not comply with emission mask H in either the old or new NPSPAC bands.<sup>97</sup> We note that the laboratory tested the Model 300P radio, with a

<sup>92</sup> The maximum power density prescribed by 47 C.F.R. § 1.1310 is equal to  $F/300$  where  $F$  is the frequency in megahertz. For the approximate middle of the NPSPAC band, 808.75 MHz, the maximum power density at 20 cm is  $808.75/300=2.7$  mW/cm. The power output of the model MDX radio is 21993 mW. The Source Based Time Average (SBTA) for 50% duty cycle is -3 dB (factor of 1/2). The gain of the antenna is 3 dB (factor of 2), hence the SBTA and antenna gain cancel. Therefore, the maximum power density,  $P_d$ , at 20 cm is given by  $P_d=21993/(4\pi*20^2) = 4.38$  mW/cm<sup>2</sup>.

<sup>93</sup> MSU Surreply at 5 (emphasis supplied).

<sup>94</sup> See *supra* n.107. See also Sprint Reply Comments at 6-7 (“Not one of these Friss [sic] formula variables is affected by or related to the deviation of the radio. Therefore, the adjustment of the radio deviation for reconfiguration purposes has no effect on RF exposure and thus cannot be relevant in the context of the discussion.”)

<sup>95</sup> Sprint Reply Comments at 8.

<sup>96</sup> *800 MHz Report and Order*, 19 FCC Rcd at 15076-15077. (Parties are obligated to demonstrate utmost good faith in dealing with each other and the Commission.)

<sup>97</sup> See Measurement Report, Test Report Serial No. 0Y1210181522-R1.AXA, at 23-25; Measurement Report, Test Report Serial No. 0Y1210181524-R2.OWD, at 23, 25. Each model radio was tested using 9600 baud data modulation on three frequencies: 808.7500 MHz in the “new” NPSPAC Band (806-809 MHz), 815.9625 MHz in the Expansion Band (815-816 MHz), and 822.2250 MHz in the “old” NPSPAC Band (821-824 MHz). The 807.7500 MHz frequency corresponds to a rebanded channel at the Sessums site; the 822.2250 MHz frequency corresponds to

(continued...)

different procedure than it used with MSU's other radios.<sup>98</sup> In all four models of MSU's radios, the emission mask performance in the old and new NPSPAC bands showed no significant difference, although two of the radios (Models 300P and MDR) exceeded the emission mask in both band segments and one radio (Model MDX) exceeded the emission mask in the old NPSPAC band but fell within the emission mask in the new NPSPAC band.

41. MSU argues that it cannot retune its Models 300P and MDR radios to the new NPSPAC band because if it did so "MSU would be operating in non-compliance with the Commission's Rules."<sup>99</sup> It adds that "post realignment, MSU's radios will not be in compliance with the Commission's Rules, rules designed to prevent licensees from interfering with each other . . . the Commission clearly cannot compel MSU to violate the Commission's Rules and perhaps put personnel at risk."<sup>100</sup> In the alternative, MSU claims that, if its radios are rebanded, that Sprint is obligated to pay for "preparation and realignment" of each radio, in the same manner as the sample radios were prepared and realigned for laboratory testing.<sup>101</sup>

42. MSU's statement that "post realignment, MSU's radios will not be in compliance with the Commission's Rules . . ."<sup>102</sup> is misleading. "Realignment" does not render MSU's radios non-compliant with the Commission's rules. The laboratory measurements show that, from a rule compliance standpoint, there is no significant difference in MSU's radios pre- and post-rebanding. The radios' interference potential will be no greater in the new NPSPAC band than in the old. Personnel will be at no greater or lesser risk when the radios are retuned to the new NPSPAC band. In short, the retuned radios will be "comparable" within the meaning of that term in the Commission's definition of comparable facilities.<sup>103</sup> In finding that MSU's radios are comparable, we are not "compel[ing] MSU to violate the Commission's Rules,"<sup>104</sup> we are merely holding that Sprint is not responsible for paying the cost of

(...continued from previous page)

an original channel at the Sessums site; the 815.9625 MHz frequency corresponds to a "[m]id sub-band" channel. See, MSU Radio Data Testing Procedure, Feb. 5, 2013 at 1. (The radios were also tested with 2500 Hz sine wave modulation and conformed to the applicable emission mask.)

<sup>98</sup> The Model 300P, unlike the other radios, cannot generate an internal pseudo random data signal. Accordingly, the radio was tested with a base station simulator. The control channel signal was captured using a real-time spectrum analyzer. Measurement Report, Test Report Serial No. 0Y1210181524-R1.OWD at 22.

<sup>99</sup> MSU Supplemental SOP at 2.

<sup>100</sup> *Id.* at 5.

<sup>101</sup> *Id.* at 4.

<sup>102</sup> *Id.* at 5.

<sup>103</sup> *800 MHz Report and Order*, 19 FCC Rcd at 15077. ("Comparable facilities are those that will provide the same level of service as the incumbent's existing facilities, with transition to the new facilities as transparent as possible to the end user. Specifically, (1) equivalent channel capacity; (2) equivalent signaling capability, baud rate and access time; (3) coextensive geographic coverage; and (4) operating costs." (Footnotes omitted.)) The comparable facilities definition for the 800 MHz band was adopted in 1997 when the Commission provided for relocation of site-based licensees in the "Upper 200" channels by Economic Area (EA) licensees. Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, *Second Report and Order*, 12 FCC Rcd 19079, 19111-19115 (1997). See 47 CFR § 90.699(d). The Commission expressly adopted the same definition of comparable facilities for purposes of 800 MHz rebanding. *800 MHz Report and Order*, 19 FCC Rcd at 15077 n.526.

<sup>104</sup> MSU Supplemental SOP at 5.

rendering MSU's radios rule-compliant when there is no evidence that it is the retuning of the radios that renders them out of compliance with the Commission's rules.

43. We also reject MSU's claim that, if its radios are retuned, Sprint must pay for "preparation and realignment" of each radio.<sup>105</sup> When Sprint discovered that the radios selected for testing were not in alignment it corrected the misalignment to ensure a valid test against the manufacturer's published specifications. If the remainder of MSU's radios are similarly misaligned, the responsibility for realignment of the radios lies, as a maintenance matter, with MSU, not Sprint whose only obligation is to pay for retuning the radios to the NPSPAC band and reducing their maximum frequency deviation to 4 kHz. Sprint is not responsible for correcting pre-existing deficiencies in rebanding licensees' equipment.

44. Finally, we note Sprint's observation that while MSU's radios do not conform to emission mask H on the control channel, the radios only use the control channel for "sporadic transmissions of approximately 30 milliseconds."<sup>106</sup> Accordingly, we cannot foresee an instance in which interference – if it were to occur – would affect the intelligibility of the communications of another party. Our opinion in that regard is bolstered by the fact that MSU has operated these radios for decades in the old NPSPAC band apparently without causing interference to other users of the band. Therefore, we would regard any such "interference" as *de minimis*. For that reason, and on our own motion, we waive Section 90.210(h) of the Commission's rules and will not require MSU to comply with emission mask H when models 300P and MDR operate on the control channel.

### (iii) The Need to Measure Face SAR

45. MSU faulted the original laboratory report for assuming that body Specific Absorption Rate (SAR) would be greater than face SAR, and, therefore, reporting only body SAR.<sup>107</sup> MSU also claimed that the laboratory unreasonably extrapolated the SAR levels of the Model 300P radio to the model PCS radio.<sup>108</sup> The supplementary laboratory reports contain SAR measurements of both the head and face for both models of radio. The supplementary laboratory reports confirm the laboratory's original conclusion that, while the body SAR levels are dominant, both the face and body SAR levels fall well below the human exposure limits for a controlled environment.<sup>109</sup> Accordingly we reject MSU's claim that the laboratory erred in its initial findings concerning SAR.

### (iv) Expression of SAR Values - Peak vs. Average.

46. MSU also faulted the laboratory for reporting the body peak SAR whereas the ANSI/IEEE standard implies – in MSU's view – that the SAR limit should be expressed in terms of "Spatial Average SAR (Whole Body)."<sup>110</sup> It states that "MSU desires an explanation" of why the

<sup>105</sup> *Id.* at 4.

<sup>106</sup> Sprint [Supplementary] Statement of Position at 5.

<sup>107</sup> MSU Surreply at 6.

<sup>108</sup> *Id.*

<sup>109</sup> The face human exposure limit for a controlled occupational environment is 8 Watts per kilogram; the whole body limit is 0.4 Watts per kilogram. The highest measured face value for the Model PCS radio is 1.93 W/kg; the highest measured face value for the Model 300P radio is 3.38 W/kg. The highest measured whole body value for the Model PCS radio is 3.56 W/kg; the highest measured whole body value for the Model 300P radio is 2.52 W/kg. Both radios are, therefore, well within the SAR human exposure limits for both the face and body. See SAR Engineering Evaluation Report, Document Serial Nos. 0Y1210181523-R3.AXA and 0Y1210181525-R3.OWD.

<sup>110</sup> MSU Supplemental SOP at 4, citing ANSI/IEEE C95.1-1992 and Canadian Health Code 6.



laboratory used the peak instead of average values in its report.<sup>111</sup> The laboratory provided the following explanation:

The highest (peak) spatial average SAR was measured for the device and not the Whole Body Average SAR. According to 47 C.F.R. § 2.1093(d)(1), the limits to be used for the RF exposure evaluation of portable devices (used within 20 cm of the body of the user for occupational/controlled exposure) is 0.4 W/kg “as averaged over the whole body not exceeding 8 W/kg as average over 1 gram of tissue.” This is because the RF exposure due to the near-field effect from devices used near the user’s body may cause high localized SAR peaks and therefore must be evaluated. SAR limits are based on peak spatial-average limits based on dosimetry considerations as described in IEEE C95.1:1992. SAR was measured for the subject device comparisons over the highest 1 gram of tissue, as recommended by the FCC.<sup>112</sup>

Most significant here is that the laboratory found no meaningful difference in body SAR values as between the old and new NPSPAC bands. For example, the measurement data for the Harris EDACS-300P show that the SAR was very slightly – but insignificantly – higher when the radio transmitted in the old NPSPAC band than in the new NPSPAC band.<sup>113</sup> Consequently, we find no merit in MSU’s implication that retuning its radios to the new NPSPAC band will pose a non-ionizing radiation hazard to the radios’ users.

#### (v) Radio Certification

47. MSU asserts that reducing the maximum frequency deviation of its 3-site scan radios would void their certification and require a new equipment certification.<sup>114</sup> It cites Section 2.932(a) of the Commission’s rules<sup>115</sup> for the proposition that a new equipment authorization is required “whenever there is a change in the design, circuitry or construction of an equipment or device for which an equipment authorization has been issued.”<sup>116</sup> MSU also includes an opinion letter from Harris’ counsel citing unnamed Commission staff and unidentified “FCC policy documents” for the proposition that adjusting a radio’s frequency deviation “may be reasonably considered by the FCC staff to be changes to ‘basic modulator circuit’ requiring an application for new grant of certification [...]”<sup>117</sup>

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<sup>111</sup> MSU Supplemental SOP at 4.

<sup>112</sup> Email from Gregory Snyder, PCTEST laboratory to Jonathan J. Nadler, Esq., TA Mediator, Mar. 22, 2013.

<sup>113</sup> The body SAR measurements for the model 300P radio show that the SAR(1g) (W/kg) in the old NPSPAC band is 1.809 (mobile transmit at 822.2250 MHz), whereas the comparable value in the new NPSPAC band is 1.739 (mobile transmit at 808.7500 MHz), *i.e.* the measured value in the old NPSPAC band is 0.07 W/kg higher than the measured value in the new NPSPAC band. The difference is negligible but shows that there is no material increase in SAR when the radio is retuned to the new NPSPAC band. *See* SAR Engineering Evaluation Report, S/N 0Y1210181525-R3.OWD, at 7, Table 6-2.

<sup>114</sup> MSU PRM at 39.

<sup>115</sup> 47 C.F.R. § 2.932(a).

<sup>116</sup> *Id.*

<sup>117</sup> Letter from George Wheeler, Esq. to Steve Smith, Project Manager, Harris Corp., May 9, 2012, Exhibit 3 to the MSU PRM. *See also*, MSU SOP at 2.

48. Sprint, however, points out that adjusting the frequency deviation of a radio does not change its design, circuitry or construction, and, therefore does not require a new authorization.<sup>118</sup> The TA Mediator concurs with Sprint, observing that deviation “is not a parameter that the Commission specially certifies as to each radio”.<sup>119</sup> The TA mediator is correct. We discount the equivocal opinion letter from Harris’ counsel, *inter alia*, because it relies on unattributed hearsay.<sup>120</sup> We also note that in 1988, at the inception of the NPSPAC band, the Commission authorized licensees to reduce the frequency deviation of their existing radios without requiring the licensees to obtain a new equipment authorization for the re-adjusted radios.<sup>121</sup> Moreover, Sprint correctly notes,<sup>122</sup> we recently approved a reduction of radio deviation in the *Genesee County* case<sup>123</sup> without requiring the radios to have a new equipment certification. While MSU attempts to distinguish the *Genesee County* case by noting that it involved “different manufacturer radios and different type certifications,”<sup>124</sup> that is a distinction without a decisional difference. The fact is that the Bureau approved reduction of the frequency deviation of the Genesee radios without requiring that they be re-certified. Adjusting the frequency deviation of MSU’s radios is a routine maintenance procedure that does not change “the design, circuitry or construction” of the radio and, therefore, does not require re-certification of the radio. Therefore, we find no merit to MSU’s claim that it cannot operate its 3-site scan radios in the NPSPAC band with maximum 4 kHz frequency deviation without a new equipment authorization.

**(vi) Conclusion: The Radio Realignment Solution Provides MSU With Comparable Facilities.**

49. Based on the laboratory results<sup>125</sup> responsive to the *Order Reopening the Record* and the *Second Order Reopening the Record* and the Parties’ Statements of Position,<sup>126</sup> we conclude that MSU will receive comparable facilities if its radios are retuned to the new NPSPAC band with their maximum frequency deviation reduced. The laboratory results show that there is no significant change in the radios’ operating parameters as between the old and new NPSPAC bands. Frequency stability is within limits in both the old and new NPSPAC bands for all MSU radios tested. Although two models of MSU’s radios<sup>127</sup> do not conform to emission mask H in either the old or new NPSPAC band, the radios’ non-

<sup>118</sup> Sprint Reply PRM at 29. *See also* Sprint SOP at 6-7.

<sup>119</sup> RR at 20 *quoting* Sprint PRM at 45.

<sup>120</sup> MSU argues, however, that we should give “compelling weight” to Harris’ arguments that reducing the maximum frequency deviation on its radios necessitates a new equipment authorization. MSU SOP at 4.

<sup>121</sup> Development and Implementation of a Public Safety National Plan and Amendment of Part 90 to Establish Service Rules and Technical Standards for Use of the 821-824/866-869 MHz Bands by the Public Safety Services, *Memorandum Opinion and Order on Reconsideration*, 3 FCC Rcd 5391 (1988).

<sup>122</sup> Sprint PRM at 19.

<sup>123</sup> County of Genesee, New York and Sprint Nextel Corp., *Memorandum Opinion and Order*, 26 FCC Rcd 12772 (PSHSB 2012).

<sup>124</sup> MSU PRM at 42 n.41.

<sup>125</sup> The laboratory submitted its initial results on Nov. 9, 2012. The laboratory report contained errors in the production of certain material. The laboratory submitted a corrected report on Dec. 11, 2012. *See* Sprint Reply Comments, Appendix A.

<sup>126</sup> Herein, we consider both the Parties’ Statements of Position filed June 25, 2012 and the Parties’ post-remand Statements of Position filed Mar. 12, 2013.

<sup>127</sup> Models 300 P and MDR. The non-conformity occurs on the radios’ control channel when modulated with a 9600 baud signal.

conformity is inherent in the radios, not a result of retuning the radios to the new NPSPAC band and reducing their frequency deviation. Under the Commission's rules and precedent, Sprint is only responsible for providing rebanding licensees with comparable facilities. To the extent that a licensee's facilities are deficient, *ab initio*, Sprint is not obliged to correct those deficiencies.

**b. The Interleaved Solution**

50. We agree with MSU that Sprint's Interleaved Solution would not provide MSU with comparable facilities. Requiring users to carry two radios on their person or installing two radios in their vehicles is impractical, unreasonable and would not result in MSU receiving comparable facilities. In particular, encumbering an officer with an additional radio would limit his or her mobility and create confusion over which radio to use in an emergency. Moreover, implementing the Interleaved Solution would double the licensee's maintenance and repair costs for the duplicate radios.<sup>128</sup>

**c. The IMC Switch Solution**

51. We reject MSU's IMC Switch solution because it does not meet the minimum necessary cost standard,<sup>129</sup> *i.e.*, it is substantially more expensive than the Radio Realignment Solution which, we have determined, will provide MSU with comparable facilities.

**B. Minimum Necessary Costs**

52. The Parties disputed the costs associated with all of the options under consideration here – the IMC Switch Solution, the Interleaved Solution, and the Radio Realignment Solution. We now address the disputes over the costs of the Radio Realignment Solution which, we have determined, will provide MSU with comparable facilities.

53. Specifically we will resolve the disagreements between the Parties about the costs of equipment and services reasonably necessary to effect the Radio Realignment Solution so that MSU receives facilities comparable to its existing system. In resolving these disagreements we reiterate that under the Minimum Cost Standard, MSU has the burden of proving that the costs it seeks are reasonable, prudent, and the “minimum necessary to provide facilities comparable to those presently in use.”<sup>130</sup>

54. We also note that the TA Metrics are instructive to our analysis. The TA Metrics are data derived from the rebanding costs documented in approved FRAs and amendments between NPSPAC licensees and Sprint.<sup>131</sup> The Bureau has stated that, although the cost ranges presented in the TA Metrics give rise to a presumption of reasonableness, they are not binding or dispositive of individual cases. In particular, any party to negotiation or mediation may demonstrate that there are aspects of a reconfiguration that differentiate it from the reconfigurations on which the TA Metrics are based, therefore justifying higher or lower rebanding costs. Because rebanding licensees bear the burden of

<sup>128</sup> We note that comparable operating cost is a factor in determining whether a licensee receives comparable facilities. *800 MHz Report and Order*, 19 FCC Rcd at 15077.

<sup>129</sup> Improving Public Safety Communications in the 800 MHz Band, *Memorandum Opinion and Order*, 22 FCC Rcd 9818, 9821 (2007) (“Sprint should not propose to pay and the TA should not approve payment of higher costs when a lower-cost alternative is clearly available that would provide the licensee with comparable facilities as defined by the Commission's orders in this proceeding and would effectuate a smooth and timely transition.”) *See also*, Illinois Public Safety Agency Network and Nextel Communications, Inc., *Memorandum Opinion and Order*, 26 FCC Rcd 10668, 10675 n.63 (PSHSB 2011); State of Indiana and Sprint Nextel Corp., *Memorandum Opinion and Order*, 26 FCC Rcd 5067, 5071 (PSHSB 2011).

<sup>130</sup> *800 MHz Report and Order*, 19 FCC Rcd at 15074; *800 MHz Supplemental Order*, 19 FCC Rcd at 25152 (2004).

<sup>131</sup> *See* Public Safety and Homeland Security Bureau Announces Enhancements To The Metric Data Used In 800 MHz Rebanding Negotiations And Mediations, *Public Notice*, 25 FCC Rcd 8151 (PSHSB 2010).

demonstrating that their proposed costs meet the Minimum Cost Standard, a licensee whose costs are significantly higher than the costs incurred by licensees with similarly sized reconfigurations must conclusively demonstrate by record evidence that its reconfiguration is, in fact, materially different from the reconfigurations on which the TA Metrics are based. Costs that deviate greatly from the TA Metrics will be given close scrutiny by the TA Mediators and by the Bureau in cases that are submitted for *de novo* review.<sup>132</sup>

55. MSU argues that the TA Metrics ought not to be applied to its system which it characterizes as an “outlier.”<sup>133</sup> For the reasons set out *infra* we disagree: the majority of the contested tasks have parallels in other rebandings and the only things distinguishing MSU’s proposals are the excessive hours devoted to those tasks and the associated high cost. The fact that MSU’s requests exceed the median cost for rebanding systems of comparable size, in some instances by over 100 percent, heightens MSU’s burden of proof<sup>134</sup> and mandates careful scrutiny of MSU’s claimed costs.<sup>135</sup> We therefore discuss, below, those costs which are disputed by the parties, organized in the order in which the TA Mediator addresses them in the RR.

### 1. Radio Realignment Incremental Costs.

#### a. Mitigation of Reduced Signal to Noise Ratio at Fill-In Sites.

56. MSU’s claimed costs for compensating for degradation in performance, if any, at 2 of its sites – the Sturgis and Maben sites – are significantly high. The associated engineering cost falls in the 85<sup>th</sup> percentile and is 190 percent greater than the median; the infrastructure reconfiguration cost falls in the 93<sup>rd</sup> percentile and is 221 percent greater than the median.<sup>136</sup> Sprint contends that “no mitigation measures or costs are necessary” because any performance degradation occasioned by reducing the deviation of MSU’s system from 5 kHz to 4 kHz is *de minimis*. Sprint also intimates that the Sturgis and Maben sites may not be licensed or, if properly licensed, do not provide a meaningful amount of service.<sup>137</sup>

57. As MSU points out, and, as confirmed by the Commission’s Universal Licensing System records, the Sturgis and Maben sites are licensed under call sign WNPH677,<sup>138</sup> under the licensee name Mississippi State University Physical Plant. Sprint concedes that it does not know the location of these two “fill-in” sites, but then goes on to speculate that their coverage may not be within the 22 dBu contour

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<sup>132</sup> *Id.*

<sup>133</sup> MSU PRM at 18-19. MSU contends that, because Sprint furnished New York Communications Co. “the only other 3-Site Scan system in the country that needed to be rebanded . . .” with an IMC switch, Sprint is obliged to do the same for MSU. *Id.* at 28-29. As we have noted before, “[w]hile resolution of similar issues reached in other mediations may be instructive, we note that none of these cases were referred to the Bureau, and we ultimately are not bound by them because the facts and circumstances of other mediations vary and are not part of the record in this case.” City of High Point, North Carolina and Sprint Nextel Corp., *Memorandum Opinion and Order*, 24 FCC Rcd 3918, 3924 (PSHSB 2009).

<sup>134</sup> County of Charles, Maryland and Sprint Nextel Corp., *Memorandum Opinion and Order*, 27 FCC Rcd 11476 (2012)(*Charles County*).

<sup>135</sup> City of Manassas, Virginia and Sprint Nextel Corp., *Memorandum Opinion and Order*, 22 FCC Rcd 8526, 8527 (PSHSB 2007).

<sup>136</sup> Sprint PRM at 56.

<sup>137</sup> Sprint SOP at 13.

<sup>138</sup> MSU PRM at 1 and n.2.

of MSU's Sessums site, or that the facilities may be operating at less than maximum power.<sup>139</sup> Sprint also alleges that the sites were not properly registered pursuant to Section 90.693(c) of the Commission's rules,<sup>140</sup> and, therefore, may require "follow up licensing and cost recovery waivers."<sup>141</sup>

58. There is no question that the Sturgis and Maben sites are operational. Indeed, they are the subject of most of Sprint's arguments herein. If they were not timely registered with the Commission, MSU may correct that oversight.<sup>142</sup> We will not, as does Sprint, speculate about the coverage of these sites, either absolutely or relative to the Sessums site's 22 dBu contour. Thus we find Sprint's licensing arguments do not excuse it from providing comparable facilities at the Sturgis and Maben sites.

**(i) Maben Site**

**(a) Antenna and TTA Installation**

59. At the Maben site, MSU requests \$25,560 for Harris' participation in installation of a receiving antenna, the fabrication of an antenna mount and installation of a Tower Top Amplifier (TTA) to offset the claimed degradation of signal to noise ratio in the signal presented to the base station receivers by the mobile/portable transmitters.<sup>143</sup> Sprint – although claiming that the degradation is *de minimis* – offers \$8000 for adjustment of the existing TTA, an amount which it contends is adequate for the services of a 3-person crew for 3-days.<sup>144</sup> MSU claims that \$25,560 is "reasonable" based on similar work performed by Harris, but does not describe where Harris performed that work or what the work entailed.<sup>145</sup> The TA Mediator, however, notes that the cost claimed for the Maben site is six times that claimed for the Sturgis site and that MSU has not shown that the effort at the Maben site relative to the Sturgis site is unduly complex. Therefore, the TA Mediator recommends that the amount offered by Sprint be accepted.<sup>146</sup> We agree, but for different reasons. Although MSU has claimed that rebanding the Maben site is fraught with "complexities"<sup>147</sup> it does not explain what those complexities might be. Additionally, MSU does not break out the discrete elements of the project, such that one can determine, for example, which element is reasonable and which excessive. In short, MSU has not met its evidentiary burden of showing that \$25,560 is the minimum necessary cost for Harris' participation in fabricating an antenna mounting bracket, re-adjusting or replacing a TTA and installing an antenna. We therefore approve the \$8,000 offered by Sprint for Harris' participation in this aspect of the Maben reconfiguration.

**(b) Structural Analysis**

60. MSU also requests \$17,040 for structural analysis of the Maben site tower to determine whether it will safely support a new antenna and TTA. MSU claims that the requested cost also includes

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<sup>139</sup> Sprint SOP at 4-5.

<sup>140</sup> 47 C.F.R. § 90.693(c).

<sup>141</sup> Sprint SOP at 5.

<sup>142</sup> MSU, however, may be subject to enforcement action if it failed to timely register the sites.

<sup>143</sup> RR at 23.

<sup>144</sup> *Id.*

<sup>145</sup> MSU PRM at 60.

<sup>146</sup> *Id.* at 24.

<sup>147</sup> *Id.* at 60.

“structural design” of a new antenna mount.<sup>148</sup> Sprint offers \$2,500 for the structural design effort, asserting that tower analysis for installation of a new receive antenna typically costs less than the \$2,500 it has offered.<sup>149</sup> MSU’s asserted justification for the \$17,040 amount is that it comports with “similar” but unspecified other projects.<sup>150</sup> Sprint’s only justification for its figure is that it is “very common” for tower analysis to cost less than \$2,500.<sup>151</sup> The TA Mediator notes that MSU “has not provided a detailed breakdown of the tasks and requested hours or any support for its assertion that the amount requested is consistent with other agreements.”<sup>152</sup> Nonetheless, The TA Mediator submits that the ratio of installation services at the Maben and Sturgis sites should be applied here, *i.e.*, that because the installation services at the Maben site are twice those at Sturgis, that the structural design cost at Maben should also be approximately twice that at Sturgis. The TA Mediator thus recommends that MSU receive \$17,040 for tower structural analysis at Maben. We disagree with the TA Mediator’s reasoning. MSU has the burden of proof here, and, as the TA Mediator has noted, has failed to break out the tasks and the requested hours or substantiate its claim that “similar” other projects have cost an equivalent amount.<sup>153</sup> Accordingly, for MSU’s failure to meet its burden of proof, we approve MSU receiving \$2,500 – the amount offered by Sprint – for tower structural analysis at the Maben site.

**(c) System Engineering**

61. MSU requests an additional \$7,000 for 40 hours of Harris’ system engineering services for the Maben site to prepare a statement of work for analysis of the tower, evaluate responses, retain a structural engineer, evaluate the engineer’s work, prepare a statement of work for the tower contractor, retain a tower contractor, and select equipment.<sup>154</sup> It neither documents its requested costs, nor breaks out the hours associated with each task. Sprint, however, breaks the tasks down by the number of hours it estimates would be required for each, and concludes that each task, other than equipment selection, should take three hours and that equipment selection should require no more than six hours. Sprint offers no basis for its breakdown of costs other than that the tasks “should easily be able to be completed in two to four hours each.”<sup>155</sup> The TA Mediator credits Sprint’s estimates, but notes that Sprint omitted two tasks in arriving at its estimates, and recommends that the “Commission award 28 hours . . . at a cost of \$4,900.”<sup>156</sup> We disagree with the TA mediator on this point. MSU’s and Sprint’s claims are equally unconvincing, but MSU, as the TA Mediator concedes, “has not met its burden of proof.”<sup>157</sup> Accordingly,

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<sup>148</sup> *Id.* at 57.

<sup>149</sup> Sprint PRM at 55.

<sup>150</sup> MSU PRM at 60.

<sup>151</sup> Sprint alleges that the TA Mediator “elevates an exercise in splitting the difference to a pseudo-science” in comparing the costs associated with the Maben and Sturgis sites. Sprint SOP at 10.

<sup>152</sup> RR at 24. *See* Sprint SOP at 11.

<sup>153</sup> MSU could have presented an estimate from a structural engineer for the work, or obtained documentation from Harris of charges for structural engineering that it has encountered in other rebanding cases.

<sup>154</sup> MSU PRM at 57-58.

<sup>155</sup> Sprint PRM at 39.

<sup>156</sup> RR at 25.

<sup>157</sup> *Id.*

we approve MSU receiving \$3,850<sup>158</sup> – the amount offered by Sprint –for Harris’ system engineering services at the Maben site.

**(d) Infrastructure Retuning**

62. MSU seeks \$3,621 for Harris to retune the Maben base station; Sprint offers \$2,414. The record is insufficient to distinguish between the two amounts which, as noted by the TA Mediator, result in a *de minimis* \$1,207 difference.<sup>159</sup> Accordingly, as recommended by the TA Mediator, we approve MSU receiving its requested amount – \$3,621 – for Harris’ retuning services.

**(ii) Sturgis Site.**

**(a) TTA Adjustment/Replacement**

63. At the Sturgis site, MSU requests \$4,260 for Harris to participate in the installation of a new TTA; whereas Sprint offers \$1,200 for adjustment of the existing TTA.<sup>160</sup> MSU argues that it requires a new TTA because there are no set procedures for adjusting the gain of the TTA, removing attenuators, or replacing jumper cables. Accordingly, MSU submits, it must replace the existing TTA with one having a lower noise figure.<sup>161</sup> Sprint contends, however, that MSU can adjust the existing TTA for \$1,200 because that amount is consistent with the amount charged by Harris to participate in the adjustment of a TTA in Lake County, Illinois.<sup>162</sup>

64. We are not persuaded by MSU’s argument that lack of “procedures” for adjusting the gain of the TTA, removing attenuators, or replacing jumper cables, justifies furnishing and installing a new TTA. Those tasks are well within the competence of an installation technician relying on the manufacturer’s installation/maintenance manual. However, we are even less persuaded by Sprint’s argument that adjustment of the existing TTA, the removal of attenuators, etc. would be sufficient to make up for the loss of inbound signal- to-noise ratio occasioned by reducing the deviation of mobile and portable units from 5 kHz to 4 kHz.<sup>163</sup> Sprint’s argument is speculative because it assumes, *e.g.*, that it is

<sup>158</sup> Calculated on the basis of 5 tasks at 3 hours per task, plus one task (equipment selection) at 6 hours, for a total of 21 hours at \$175/hour.

<sup>159</sup> RR at 26.

<sup>160</sup> *Id.*

<sup>161</sup> MSU PRM at 58-59.

<sup>162</sup> Sprint PRM at 57.

<sup>163</sup> The claimed reduction of signal-to-noise ratio rests on a report from engineer Jay Jacobsmeyer, P.E., a principal of Pericle Communications Co. Mr. Jacobsmeyer opines that a reduction of deviation in MSU’s radios “might degrade coverage” based on a study of MSU’s radios in which he measured signal-to-noise ratio as a function of reduced deviation. His measurements showed a reduction in signal-to-noise ratio of from -0.8 dB to -1.6 dB using 20 dB SINAD (Signal to Interference Noise and Distortion) as a benchmark and a change in signal-to-noise ratio ranging from + 0.6 dB to -1.4 dB using 12 dB SINAD as a benchmark, depending on the radio being tested. Mr. Jacobsmeyer then translated his findings to estimates of the coverage deficits that would be encountered with reduced deviation, concluding that coverage could be reduced from 6.8% to 17.1% depending, *inter alia*, on the location and type of the radio (mobile or portable). Conspicuously absent from Mr. Jacobsmeyer’s study, however, is documentation of where these coverage deficits might occur, *i.e.* whether the reduced coverage falls inside or outside MSU’s jurisdictional area – the area in which MSU’s radio users operate. Sprint conducted similar measurements, finding that the change in signal-to-noise ratio ranged from -0.1 dB to +1.1 dB, using 12 dB SINAD as a benchmark. Sprint did not express its measurements in terms of coverage change. Jacobsmeyer’s and Sprint’s measurements thus are generally consistent. Notable in both measurements is the fact that signal-to-noise ratio improved in some radios when the deviation was reduced. This is contrary to theory and strongly suggests that the differences in signal-to-noise ratio are so small as to be influenced by measurement and observational error and,

(continued...)

possible to increase the gain of the existing TTA,<sup>164</sup> that there are attenuators in the path between the TTA and the base station receiver and that existing jumper cables have excessive loss. Moreover, we do not credit Sprint's argument that its \$1,200 offer is valid because Harris adjusted a TTA in Lake County, Illinois for that amount. Sprint has not provided the particulars of that adjustment and has not demonstrated that MSU can adjust its current TTA to overcome the signal-to-noise ratio shortfall. Accordingly, because it is far from certain that MSU can accommodate the signal-to-noise ratio shortfall merely by adjustment of the existing TTA, replacement of jumper cables and removal of attenuators, and because a new TTA may, in fact, be necessary to compensate for the shortfall in signal-to-noise ratio we approve the \$4,260 requested by MSU for Harris' participation in the installation of a new TTA.

**(b) Structural Analysis**

65. MSU states, with respect to the Sturgis site, that its "only choice to make up the deficiency in performance from Radio Realignment is to replace the existing TTA with one of more modern design offering improved noise figure."<sup>165</sup> It then goes on to say that "Harris intends to engineer and modify the Sturgis site in a manner similar to Maben, requiring tower structural analysis and potential modification and installation services."<sup>166</sup> The "manner similar to Maben" analogy fails because, at Maben, MSU contemplates installation of an additional antenna and mounting bracket – which would increase tower loading – whereas at Sturgis, the only modification – if the existing TTA cannot be adequately adjusted – is the substitution of one TTA for another. MSU requests \$8,520 for a structural study to demonstrate that the replacement of one TTA with another will not overload the tower. While we are skeptical that such replacement requires a structural study, we are aware that certain leases<sup>167</sup> for space on existing towers can be interpreted to require such a study when equipment is replaced. Accordingly, we approve MSU's requested structural study, conditioned, however, on MSU providing the TA Mediator with a copy of its lease for the Sturgis site, which lease contains provisions requiring that the lessee conduct a structural study when equipment on the tower is replaced. If the lease so provides, we approve the \$8,520 requested by MSU. If not, we disapprove the requested \$8,520.

**(c) System Engineering**

66. We question why the requirement to "engineer and replace the existing TTA at Sturgis" justifies the "Harris System Engineer cost estimate of 24 hours."<sup>168</sup> The System Engineer's only task is to select a "TTA . . . of more modern design offering improved noise figure."<sup>169</sup> Once that is done, all that remains is for a technician to install the TTA according to the instructions provided by the device's manufacturer. Therefore, we conclude that the 4 hours of System Engineering time at \$700, offered by

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thus, are *de minimis*. In any event, the Parties agree that the signal-to-noise ratio at the Maben and Sturgis sites can be improved by such measures as replacement of the TTAs with TTAs that have a lower noise figure, replacement of jumper cables with lower loss cables and the use of a higher gain antenna.

<sup>164</sup> MSU claims that the TTA currently is operating at its maximum gain. MSU PRM at 58.

<sup>165</sup> *Id.* at 59.

<sup>166</sup> *Id.*

<sup>167</sup> Our use of the term "lease" is not intended to exclude any other relevant document showing such a requirement.

<sup>168</sup> *Id.* at 59.

<sup>169</sup> *Id.*



Sprint, is adequate for the System Engineer to choose a suitable TTA and address any questions that might arise during the TTA's installation.

**(d) Infrastructure Retuning**

67. MSU requests \$2,414 for two days of technician time to retune the Sturgis infrastructure. Sprint offers one-half day at a cost of \$603.50. MSU's request includes one day of travel time for the technician; Sprint's offer does not. The difference between the MSU request and the Sprint offer is \$1,810.50, a *de minimis* amount considering the overall cost of this project. Accordingly, and because Sprint's offer does not include travel time, we approve \$2,414 for the retuning of the Sturgis infrastructure.

**(iii) Services and Equipment Common to Maben and Sturgis**

**(a) Systems Engineering – Installation Support**

68. In addition to the \$7,000 in system engineering services MSU requested for the Maben site and the \$4,200 in system engineering services MSU requested for the Sturgis site, MSU seeks an additional \$4,200 in system engineering services associated with equipment installation support at both sites.<sup>170</sup> MSU submits the additional \$4,200 in system engineering is warranted because of "complexities" at the Maben site and the need to replace the TTA at Sturgis.<sup>171</sup> Sprint offers \$1,400 for this work. MSU has neither established that equipment installation at the Maben site is unduly complex nor that the installation of the TTA at the Sturgis site—work conducted by a tower rigger—requires extensive systems engineering. Accordingly we approve the \$1,400 offered by Sprint.<sup>172</sup>

**(b) Replacement TTAs**

69. MSU seeks two new TTAs, one each for the Maben and Sturgis sites. Sprint has agreed that MSU may need a new TTA at the Maben site, but contends that MSU can adjust the existing TTA at the Sturgis site and therefore does not need a new TTA at that site.<sup>173</sup> MSU, however, contends that it needs new TTAs at both sites because that is what Harris recommends.<sup>174</sup> The TA Mediator recommends that Sprint be responsible for providing TTAs at both sites, but notes that in light of Sprint's claim that it can provide the TTAs for less than MSU's claimed \$10,000 each, it be allowed to do so in lieu of paying MSU \$20,000 for the two TTAs. We agree with the TA Mediator's recommendation. Sprint has conceded the need for a TTA at the Maben site and its claim that a TTA is not needed at the Sturgis site is, as noted above, speculative. Accordingly, if Sprint can furnish suitable TTAs it may do so as part of the "Schedule D" equipment in the FRA, and need not pay the \$20,000 requested by MSU.

**2. Mobile and Portable Radios**

**a. 3-Site Scan Radios**

70. MSU requests \$28,000 for Harris system engineering services in connection with the retuning of MSU's mobile and portable radios. It contends that this amount for Harris' services is required because certain "testing" is necessary to make the 3-site scan radios ready for laboratory

<sup>170</sup> See RR at 29.

<sup>171</sup> MSU PRM at 59-60.

<sup>172</sup> Sprint shall supply the replacement TTAs to MSU no later than 30 days after execution of an FRA by the parties.

<sup>173</sup> See Sprint PRM at 57.

<sup>174</sup> MSU PRM at 62-63.

recertification and to derive a procedure for adjusting the modulation tracking of the radios.<sup>175</sup> Sprint offers \$2,800 for Harris' services in connection with the 3-site scan radios. It points out that the procedure for adjusting modulation tracking is already contained in the radios' maintenance manuals, and asserts that recertification of the radios is unnecessary.<sup>176</sup> The TA Mediator agrees with Sprint and concludes that either the Commission will determine that recertification is unnecessary or that Sprint will warrant that recertification is unnecessary. Therefore, the TA Mediator recommends that MSU receive \$2,800 – the amount offered by Sprint.<sup>177</sup>

71. As discussed *supra*, the Bureau has found that MSU need not recertify its radios. Given that finding, there is no need for Harris to prepare the radios for recertification. Moreover, we agree with Sprint that Harris does not need to develop new procedures for adjustment of modulation tracking because the radio manufacturer's maintenance manual already contains those procedures.<sup>178</sup> Although Harris participated in the alignment and retuning of the sample radios to prepare them for evaluation by the laboratory, *supra*, and Harris participated in the development of the laboratory's testing procedures, MSU represents that "the cost for FCC laboratory certification testing is outside the scope of this System Engineering task and will be borne in full by [Sprint]."<sup>179</sup> We infer, without corroboration from Sprint, that the "cost for FCC laboratory certification testing" includes Harris' participation in preparing the radios for testing and devising a test procedure, and that such tasks were part of a "side arrangement" between MSU and Sprint. If that is the case, we disallow both the \$28,000 claimed by MSU and the \$2,800 offered by Sprint. If that is not the case, however, *i.e.* if there is not an agreement between MSU and Sprint whereby Sprint is covering the costs associated with testing of the radios, then we approve \$2,800, the amount offered by Sprint, for Harris' participation in that task.

**b. Replacement Radios Associated With the Interleaved Solution**

72. Sprint represents that, had MSU elected the Interleaved Solution (which involves 3-site scan users carrying two radios), Sprint would pay for retuning 200 radios<sup>180</sup> at a labor cost of \$79,865.29 for first touch, second touch, personality development and travel costs.<sup>181</sup> The parties included this \$79,865.29 in the "common costs" category and Sprint urges that it be deleted from that category if the Bureau approves the Radio Realignment Solution – which does not involve radio replacement. MSU, however, claims it is entitled to 200 replacement radios so that it can maintain "wideband," *i.e.* no reduced frequency deviation, operation for communication with its interoperable partners.<sup>182</sup> It claims that reducing the deviation of a radio makes it suitable for local operation but not for operations outside MSU's service area. Sprint disputes the claim and contends that radios remain "comparable" even with

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<sup>175</sup> *Id.* at 63-64.

<sup>176</sup> Sprint PRM at 59.

<sup>177</sup> RR at 31.

<sup>178</sup> Sprint PRM at 59.

<sup>179</sup> MSU PRM at 64.

<sup>180</sup> The TA Mediator correctly notes that "[t]he 200 radio figure represents an estimate of the number of radios that have activated 3-Site Scan capability. During rebanding, the Licensee will need to demonstrate the exact number of radios that have the 3-Site Scan capability activated. As a consequence, these costs . . . may increase or decrease." RR at 32 n.170.

<sup>181</sup> RR at 31.

<sup>182</sup> MSU PRM at 64-65.

their frequency deviation reduced.<sup>183</sup> The TA Mediator, having found that Sprint’s Radio Realignment Solution (which involves reduced frequency deviation) provides MSU with comparable facilities, rejects MSU’s claim for Harris’ labor costs associated with replacement radios and recommends that the Commission find that the \$79,865.29 should be deleted from the common costs.<sup>184</sup> We find that MSU has merely asserted, without supporting analysis, that its radios would not be “comparable” when used on other licensees’ systems. Although reduced deviation may result in a theoretical reduction in signal-to-noise ratio,<sup>185</sup> MSU has failed to show that the reduction is other than *de minimis*. Accordingly, we agree with Sprint that \$79,865.29 should be deducted from the common costs.

### 3. Coverage Testing

#### a. Drive Testing – Harris Oversight

73. There is a \$700 difference between the amount requested by MSU for Harris’ oversight of coverage testing and the amount offered by Sprint. We agree with the TA Mediator that the difference is *de minimis* and approve the \$2800 requested by MSU.<sup>186</sup>

#### b. Drive Testing

74. MSU requests \$7,242 for 6 days of drive testing;<sup>187</sup> Sprint offers \$4,828 for 4 days of testing, asserting that travel costs, included in MSU’s requests, have already been accounted for in the equipment reconfiguration category and, therefore, have been “double counted” here.<sup>188</sup> Sprint also claims that the Maben and Sturgis sites are “rural sites without much around them in terms of population or a network of roads” and, therefore, that extensive drive testing is neither necessary nor possible.<sup>189</sup> The TA mediator recommends the Commission approve 5 days of testing at a cost of \$6,305,<sup>190</sup> noting that Sprint has not accounted for MSU’s additional one person-day for test equipment calibration and a “dry run” to verify test equipment performance. We agree that the additional person-day is reasonable and approve 5 days of testing at \$6,305.

### 4. Travel and Per Diem Costs – Harris

75. The RR states that “[t]he Licensee requests 18 days and one system engineer trip at a cost of \$5,248.80.”<sup>191</sup> Inconsistently, however, in the following paragraph, the RR states that MSU seeks “six person-days for the installation technicians and six person-days for the testing technicians at a cost of \$262.70 per day; six vehicle-days at a cost of \$99.40 per day; and \$1,500 for the system engineer trip,” for a total of \$5,248.80<sup>192</sup> We conclude, therefore, that the TA Mediator intended to state that MSU requests 12 – not 18 – person-days for the technicians, plus the vehicle cost and the cost of the system

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<sup>183</sup> Sprint PRM at 59-60.

<sup>184</sup> RR at 31.

<sup>185</sup> See *supra* n.163.

<sup>186</sup> RR at 32.

<sup>187</sup> MSU PRM at 66.

<sup>188</sup> Sprint Reply at 43.

<sup>189</sup> Sprint PRM at 60.

<sup>190</sup> RR at 32.

<sup>191</sup> *Id.* at 33.

<sup>192</sup> *Id.*

engineer's trip. The TA Mediator also reports that Sprint allots two person-days for the installation technicians, four person-days for the drive test technicians, and \$1,500 for the system engineer and states that "[i]n addition, Sprint Nextel offers two days of drive testing for two testers per day, resulting in four person-days of travel and two vehicle days" and that "Sprint Nextel offers ten days and one system engineer trip at a total cost of \$3,473.80."<sup>193</sup> Again, there appears to be an inconsistency in the TA Mediator's report inasmuch as the TA Mediator has recited two person-days for "drive test technicians" and two-person days for two "testers" whom we believe to be the same individuals. This is borne out by the fact that \$3473.80, less the \$1,500 system engineer cost, less the vehicle cost ( $\$99.40 * 4 = \$397.60$ ) is equal to \$1,846.20 which, when divided by the technician travel cost of \$262.70 per technician, yields a total of 6 – not 10 – person-days. The 6 day figure is also consistent with the TA Mediator's final recommendation: "the TA Mediator recommends that the Commission award six person-days of travel, as well as three vehicle days, in connection with this task."<sup>194</sup>

76. Sprint's reasoning for allotting fewer person-days for the Harris technicians is that most of the site work – e.g., tower analysis, antenna and line installation – would be performed by outside contractors.<sup>195</sup> Sprint's reasoning may be correct with respect to the tower analysis, but the site work is likely to require the participation of the Harris technicians, e.g., in verifying the return loss of the antenna once installed, adjusting the gain of the TTA, etc. Accordingly, we approve the same amounts as in the TA Mediator's final recommendation: six person-days, four vehicle days and \$1,500 in system engineer travel, for a total of \$3,473.80.

## 5. Harris System Engineering and Tusa Consulting Costs

### a. Harris System Engineering

77. MSU requests \$31,500 in Harris system engineering costs associated with infrastructure rebanding;<sup>196</sup> Sprint offers \$15,400. MSU claims that its infrastructure rebanding costs are higher than normal because they involve (a) modification of RIC/LIX equipment<sup>197</sup> and (b) removal of "G-MARC" equipment.<sup>198</sup> As Sprint points out, however, a technician will modify the RIC/LIX equipment according to a manufacturer-provided procedure.<sup>199</sup> Similarly, a technician will remove the G-MARC equipment. We therefore conclude that the system engineer's involvement in these two processes, if any, will be minimal. Accordingly, we find that MSU's claim that its infrastructure rebanding systems engineering costs would be higher than normal lacks foundation. The TA Mediator, however, concludes that MSU has met its burden of proof because it "provided comparisons to other rebanding projects."<sup>200</sup> We disagree because MSU has not referenced any specific rebanding projects as the basis for its claims and,

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<sup>193</sup> *Id.*

<sup>194</sup> *Id.* at 34.

<sup>195</sup> Sprint PRM at 56.

<sup>196</sup> MSU PRM at 23.

<sup>197</sup> RIC/LIX equipment is used to connect MSU's system to the Public Switched Telephone Network.

<sup>198</sup> RR at 34. The role of the G-MARC equipment is unclear from the Parties' filings, however the Parties apparently agree that the G-MARC equipment will not be used in MSU's system post-rebanding, and, therefore, must be removed.

<sup>199</sup> Sprint SOP at 15. We have previously approved modification of a RIC/LIX unit for use with a MASTR III repeater – the model of repeater that will be used by MSU. City of Parma, Ohio and Sprint Nextel Corp., *Memorandum Opinion and Order*, 25 FCC Rcd 13485, 13489-13490 (PSHSB 2010).

<sup>200</sup> RR at 35.

instead, has stated, for example, only that a given task “historically varies between 8 and 40 hours depending on quantity and complexity of required equipment.”<sup>201</sup> Sprint’s argument that \$15,400 is sufficient because “other projects of various sizes . . . had a Harris System Engineer compensated at 88 hours”<sup>202</sup> at \$175 per hour is supported by reference to three rebanding projects – and the basic details thereof – which Sprint contends were more complex than MSU’s project.<sup>203</sup> As between MSU’s claimed amount and Sprint’s offered amount – and bearing in mind that MSU has the burden of proof here – we find that Sprint’s offer more accurately reflects the cost of system engineering for rebanding MSU’s relatively small system<sup>204</sup> and therefore approve \$15,400, the amount offered by Sprint, for infrastructure system engineering.

**b. Tusa Consulting Services**

**(i) On-site Tusa Project Manager**

78. MSU requests \$93,000 for 744 hours of services by a Tusa on-site project manager; Sprint offers \$45,000 for 360 hours.<sup>205</sup> MSU requests \$10,044 for 74.4 hours of Tusa’s “principal oversight;” Sprint offers 8 hours at a cost of \$1,080.<sup>206</sup> MSU seeks \$65,138 for 492.6 hours of Tusa’s “other project management” services.<sup>207</sup> Sprint offers 308 hours at \$40,280.

79. MSU justifies the “on-site project manager” time by claiming that the Tusa project manager would not duplicate the services of the Harris project manager because the Harris on-site project manager’s duties would be confined to supplying equipment and providing “stewardship” of Harris resources, whereas the Tusa on-site project manager would limit schedule changes, validate radio programming and resolve “unexpected obstacles.”<sup>208</sup>

80. Sprint claims that having “a full time on site project manager for all active project days . . . is neither necessary nor standard for rebanding,”<sup>209</sup> and submits that the services of the Tusa on-site project manager would duplicate those of Harris’ full-time “Quality Assurance Manager.” The TA Mediator agrees with Sprint that MSU has failed to meet its burden of showing the necessity for a full-time project manager from Tusa for all active project days.<sup>210</sup> He points out that MSU has a relatively small system and that Sprint has already allocated significant sums for management of the project. Accordingly, the TA Mediator recommends that the Bureau approve 360 hours of on-site management services by Tusa for \$45,000 – the amount offered by Sprint.<sup>211</sup> Given the relatively few tasks assigned to

<sup>201</sup> MSU PRM at 20.

<sup>202</sup> Sprint PRM at 26.

<sup>203</sup> *Id.* at 26-27. (Sprint cites rebanding projects for the State of Alabama, the City of Jackson, Mississippi and the City of Hartselle, Alabama.)

<sup>204</sup> As Sprint points out, rebanding of MSU’s facilities involves only “a five channel site, a 10 channel site with a collocated mutual aid channel and an off-the-air 5 channel backup system.” Sprint PRM at 26. The MSU sites are not interconnected, and simulcast operation is not employed. *Id.* at 27.

<sup>205</sup> Sprint Reply PRM at 12.

<sup>206</sup> *Id.*

<sup>207</sup> RR at 35; Sprint Reply PRM at 13.

<sup>208</sup> MSU PRM at 23-24.

<sup>209</sup> Sprint PRM at 28.

<sup>210</sup> RR at 38.

<sup>211</sup> *Id.*

the Tusa on-site manger – scheduling, programming validation and the resolution of unforeseen obstacles – we find that the amount recommended by the TA Mediator is ample, and approve \$45,000 for on-site manager services.

**(ii) Principal Oversight Engineer**

81. MSU envisions “principal oversight” as the services of a degreed engineer who will support the on-site project manager to resolve such issues as frequency management, antenna propagation and licensing. It claims that Sprint typically has agreed to “principal oversight” calculated on the basis of 20% of on-site managers’ time but that, here, MSU is requesting “principal oversight” at a rate of only 10% of the on-site manager’s time.<sup>212</sup> Sprint does not address MSU’s claim for “principal oversight,” indicating that it will accept the amount claimed for this service so long as, in combination with other services, it does not exceed the total amount offered by Sprint.<sup>213</sup> The TA Mediator, noting that MSU requests “principal oversight” at 10% of on-site manager’s time, and that he has recommended \$45,000 for on-site manager services, recommends that the Commission find that 36 hours of “principal oversight” at a rate of \$135 per hour, for a total of \$4,860 is reasonable.<sup>214</sup> We disagree. MSU is proposing that a principal overseer oversee the work of an on-site manager, who, in turn, oversees a Harris “Quality Assurance Manager” who, one presumes, oversees the work of Harris technicians performing the actual rebanding tasks. We have before disapproved this kind of “layering” of project management services.<sup>215</sup> We do so again here and totally disallow MSU’s claim for “principal oversight.”

**(iii) Other Project Management Services**

82. MSU asserts that its requested “other project management services” include those “in addition to . . . and unrelated to the tasks associated with either the on-site PM [Project Manager] or the Principal Advisor” and that are to be performed by other Tusa employees.<sup>216</sup> It claims that it developed the estimated number of hours for each such task based on FRAs concluded with several other licensees, but “adjusted” by MSU because of the asserted relatively higher complexity of its rebanding project. It also submits that the amount claimed is justified because MSU lacks staff to perform the services proposed for the Tusa employees.<sup>217</sup>

83. Sprint characterizes Tusa’s costs as “exceptionally high,” *i.e.*, that Tusa is charging 0.82 hours of project management time for each subscriber unit whereas, in other rebanding projects, Tusa has accepted approximately 0.42 hours per subscriber unit.<sup>218</sup> Sprint also contends that Tusa’s proposed project management costs here are greater than 40% of the overall project costs whereas Sprint’s offer “comes in at about 20% which is far more consistent with the TA guidelines.”<sup>219</sup> Additionally, Sprint counters MSU’s contention that the claimed amount is reasonable because of MSU’s limited resources, by pointing out that the projects Sprint used to compare with MSU’s “contain very little if any internal

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<sup>212</sup> MSU PRM at 24.

<sup>213</sup> Sprint PRM at 29.

<sup>214</sup> RR at 38.

<sup>215</sup> *Charles County*, 27 FCC Rcd at 11481 (2012)(Commission affirmation of a Bureau Memorandum Opinion and Order, 26 FCC Rcd 12749 (PSHSB 2009), denying licensee’s claim for duplicative services).

<sup>216</sup> MSU PRM at 25.

<sup>217</sup> *Id.* at 24-25.

<sup>218</sup> Sprint PRM at 30.

<sup>219</sup> *Id.*

project management time.”<sup>220</sup> Finally, Sprint argues that MSU’s system is significantly less complex than the systems which MSU used as a basis for comparison.

84. The TA Mediator concurs with Sprint that MSU has not demonstrated that its project management costs are greater than suggested by the TA Metrics or shown why Tusa’s costs here are higher than the company has charged in other rebanding projects. The TA Mediator thus recommends that the Bureau approve only the amount offered by Sprint for other project management services - \$40,280.<sup>221</sup>

85. We agree with the TA Mediator that MSU has failed to meet its burden of proof to show that its requested project management services are the minimum necessary to successfully reband its system. Although MSU claims to have based its cost on those from other FRAs “adjusted” to reflect the alleged complexity of MSU’s system relative to others, MSU has neither identified the other FRAs nor stated the amount of its “adjustment.” Moreover, we note that MSU has not contested Sprint’s observation that the cost per subscriber unit requested by MSU is nearly twice that charged by Tusa in other rebanding projects. As the Commission affirmed in its *Charles County Order*, a licensee’s burden of proof increases as a function of the degree to which its costs deviate from the norm.<sup>222</sup> Costs nearly double that of the norm deserve especially close scrutiny. Applying that scrutiny here, we find the need for “other” project management services is poorly documented and otherwise unsupported. Accordingly, we limit MSU’s compensation for other project management services provided by Tusa to \$40,280.

**c. Negotiation Costs Incurred Between October 18, 2011 and March 9, 2012**

86. MSU seeks \$2,800 for its internal costs in participating in negotiation during the period October 18, 2011 to March 9, 2012. It also seeks \$51,187.50 for Harris’ services in participating in negotiation; \$12,306 for Tusa’s participation, and \$25,534.50 for participation of its outside counsel, Schulman Rogers.<sup>223</sup> Sprint contends that MSU is entitled to no payment for negotiation costs incurred during the October 18, 2011 and March 9, 2012 period. Sprint’s theory is that MSU is not entitled to payment because it breached its obligation of good faith by (a) intentionally delaying submission of a cost estimate; (b) failing to provide information requested by Sprint during mediation; and (c) exhibiting unreasonable conduct during mediation.<sup>224</sup>

87. MSU denies Sprint’s accusation that it breached the good faith obligation. It contends that it did not withhold information from Sprint because such information existed only in draft form for internal discussions, and, therefore, was not a final document to which Sprint was entitled.<sup>225</sup> It also asserts that it encountered delay because, during the planning for the IMC Solution, *supra*, it discovered that the IMC switch would not be available from the vendor and that a telephone interconnect product was not available for MASTR III base stations.<sup>226</sup> This information, MSU contends, caused it to look into alternative options including a new Project 25 system. MSU claims its failure to provide certain other

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<sup>220</sup> *Id.* at 29-30.

<sup>221</sup> RR at 38.

<sup>222</sup> *Supra* n.134.

<sup>223</sup> RR at 38.

<sup>224</sup> Sprint PRM at 32.

<sup>225</sup> MSU PRM at 26.

<sup>226</sup> *Id.*

information requested by Sprint during mediation was due to the fact that its system is operated on a decentralized basis and, therefore, that the information was not readily available from a central source.<sup>227</sup>

88. The TA Mediator concludes that Sprint has alleged the equivalent of a conspiracy among MSU, its vendors and consultant to delay rebanding negotiations until the IMC Solution was no longer viable and MSU could then claim entitlement to a new Project 25 system.<sup>228</sup> The TA Mediator faults Sprint for its failure to provide “direct evidence” of its claim, and finds that MSU has provided a “plausible explanation” for the delayed negotiations.<sup>229</sup> He also concludes, however, that MSU could have advanced its IMC proposal in 2009 and, instead, devoted almost three years to developing a Project 25 proposal. This, the TA Mediator suggests, represents a “serious lack of diligence” on MSU’s part.<sup>230</sup> We agree with the TA Mediator that Sprint’s quasi-conspiracy theory as to MSU’s motives is entirely speculative. We disagree, however, that the record supports a “serious lack of diligence” by MSU. Its explanation of why it did not present the “draft” IMC solution in 2009 is at least plausible. Thus, lack of diligence in this case does not support denying MSU its negotiation and mediation expenses incurred from October 18, 2011 to March 9, 2012. We therefore approve \$91,828 in negotiation and mediation costs.

**d. Negotiation Costs Charged by Harris After March 9, 2012**

89. MSU requests \$28,612.50 for 163.5 hours of additional negotiation support provided by Harris after March 9, 2012 and claims that it is entitled to that amount because that was the “actual cost” incurred and that the cost is “reasonable.”<sup>231</sup> Sprint offers \$14,000 for 80 hours of Harris negotiation support, alleging that it has been “standard practice” to pay Harris for 80 hours of negotiation support regardless of the complexity of the rebanding project or the number of Harris employees involved.<sup>232</sup>

90. The TA Mediator concludes that MSU has satisfied its burden of proof on the negotiation support issue and recommends that the Bureau approve the \$28,612.50 requested by MSU because of the TA Mediator’s personal knowledge of the extent to which Harris participated in negotiations.<sup>233</sup> We concur in the TA Mediator’s recommendation. Sprint has failed to support its “standard practice” argument with citation to any particular rebanding or rebandings to which Harris was a party or otherwise shown that MSU’s expenses for Harris negotiation support are unreasonable. We therefore approve MSU’s requested \$28,612.50 for negotiation costs incurred after March 9, 2012.

**C. Sprint’s Allegations of Bad Faith**

91. Sprint claims that:

MSU has breached the duty imposed by the Federal Communications Commission to negotiate in good faith with Nextel because it has failed to timely provide accurate information, has failed to be prepared for most

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<sup>227</sup> *Id.*

<sup>228</sup> RR at 42.

<sup>229</sup> *Id.*

<sup>230</sup> *Id.*

<sup>231</sup> MSU PRM at 28.

<sup>232</sup> Sprint PRM at 33.

<sup>233</sup> RR at 44.



exchanges of information in the negotiation and mediation process and has lacked candor in its dealings with the Commission, the TA and Nextel.<sup>234</sup>

Sprint accuses MSU of “withholding . . . an IMC switch configuration plan for years” and advancing “a P25 network replacement cost estimate in bad faith, as it plainly had the ability to have rebanded its system in 2008 or 2009, and instead, withheld that plan until it could attempt to justify a P25 system replacement.”<sup>235</sup> Sprint claims that MSU misled the Commission concerning the status of its rebanding project, missed scheduling deadlines imposed by the TA Mediator, failed to respond to information requests and withheld information on how its network could be optimized.<sup>236</sup> As recompense for MSU’s alleged lack of good faith, Sprint argues that MSU should be disallowed costs associated with its attempt to advance a Project 25 network proposal.<sup>237</sup> In the alternative, Sprint argues, some of MSU’s negotiation and mediation costs should be disallowed because they were not the minimum necessary and prudent costs to effect reconfiguration of MSU’s system.<sup>238</sup>

92. For its part, MSU contends that its efforts to obtain a Project 25 system rested on a “good faith belief by MSU . . . that such a system would be comparable and was necessary given the unavailability of critical IMC components.”<sup>239</sup> MSU also denies “withholding rebanding plans” because such plans as existed were only “drafts for discussion and comments.”<sup>240</sup>

93. The TA Mediator recommends that the Bureau find that MSU did not breach its good faith obligation. Although the TA Mediator finds that MSU was not diligent in certain instances in providing necessary information, he finds that MSU did not engage in a “scheme to impermissibly obtain a P25 system,” that MSU had presented a plausible reason for its delay in going forward with rebanding, and that there was no record evidence of intentional delay on MSU’s part.<sup>241</sup>

94. We agree with the TA Mediator, who had first-hand knowledge of events during mediation. A finding of lack of good faith requires more than Sprint’s conjectural accusations.

#### **D. MSU’s Allegations of Bad Faith**

95. MSU contends that Sprint has acted in bad faith by first proposing replacement radios for MSU’s system and then withdrawing the offer; by refusing to negotiate MSU’s IMC Switch solution; and refusing to replace MSU’s obsolete 3-site scan radios when, in other rebanding negotiations, it has agreed to replace such radios.<sup>242</sup> MSU also claims that “it is arguable that Nextel acted in bad faith here” and that Sprint “sucked MSU and its vendors into incurring costs which Nextel did not intend to pay.”<sup>243</sup> As a remedy for Sprint’s alleged bad faith, MSU submits that Sprint should pay all costs necessary to implement the IMC Switch solution. We disagree and find that Sprint’s actions represent no more than

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<sup>234</sup> Sprint PRM at 61.

<sup>235</sup> *Id.*

<sup>236</sup> *Id.* at 62-63.

<sup>237</sup> *Id.* at 65, Sprint SOP at 16-19.

<sup>238</sup> Sprint SOP at 16-17.

<sup>239</sup> MSU PRM at 26.

<sup>240</sup> *Id.* at 69.

<sup>241</sup> RR at 42.

<sup>242</sup> MSU PRM at 74-75.

<sup>243</sup> *Id.*

the usual give-and-take of the negotiation process. We also remind both Parties that, as provided in the *800 MHz Report and Order*, the Commission disapproves of instances “in which a party frivolously or without substantiation, charges another party with failure to negotiate in good faith.”<sup>244</sup>

## V. SUMMARY

96. The Bureau has gone to extraordinary lengths to ensure that the record accurately reflected whether rebanding of MSU’s radios would result in MSU’s receiving comparable facilities when returned to the new NPSPEC band. The record shows that it is an inherent performance deficiency in the radios –not their being returned to the new NPSPEC band – that is the cause of two radio models exceeding the emission mask H limits when operated in the new NPSPEC band.

97. This is not the first instance in which the Bureau has held that Sprint is not liable for correcting pre-existing deficiencies in a licensee’s radios. In the *City of Parma, Ohio* case<sup>245</sup> the licensee claimed that it was entitled to replacement radios because its existing radios did not meet the Commission’s frequency stability rules in either the old or new NPSPEC band. The Bureau held that the Comparable Facilities Standard did not mandate that Sprint correct the deficiencies or provide the licensee with replacement radios.<sup>246</sup>

98. In evaluating the validity of MSU’s claimed expenses we have been guided by two bedrock principles of 800 MHz rebanding: (1) Sprint bears the evidentiary burden of showing that licensees will have comparable facilities, post-rebanding, and (2) licensees bear the evidentiary burden of showing that their claimed costs are the minimum necessary to provide comparable facilities.<sup>247</sup> The following chart summarizes the categories of expenses that the parties have contested, the TA Mediator’s recommendations and our disposition of the contested items.

Task	MSU Request	Sprint Offer	TA Mediator Recommendation	FCC Approval
Maben – TTA engr.	\$25,560	\$8,000	\$8,000	\$8,000
Maben – Structural Analysis	\$17,040	\$2,500	\$17,040	\$2,500
Maben – System engineering in support of tower analysis	\$7,000	\$3,850	\$4,900	\$3,850

<sup>244</sup> *800 MHz Report and Order*, 19 FCC Rcd at 15077.

<sup>245</sup> *City of Parma, Ohio and Sprint Nextel Corp.*, *Memorandum Opinion and Order*, 25 FCC Rcd 13485 (PSHSB 2010)(*Parma*).

<sup>246</sup> The Bureau also held that, absent a waiver, the City of Parma could not operate its radios in the new NPSPEC band.

<sup>247</sup> *See, e.g., Charles County*, 27 FCC Rcd at 11479; *Illinois Public Safety Agency Network and Nextel Communications, Inc.*, *Memorandum Opinion and Order*, 27 FCC Rcd 11459, 11465- 11466 (PSHSB 2012); *State of Indiana and Nextel Communications, Inc.*, *Memorandum Opinion and Order*, 27 FCC Rcd 11469, 11470 n.11 (PSHSB 2012), *citing 800 MHz Report and Order*, 19 FCC Rcd at 15074 and *Improving Public Safety Communications in the 800 MHz Band*, *Memorandum Opinion and Order*, 20 FCC Rcd 16015 (2005); *Commonwealth of Massachusetts and Sprint Nextel Corp.*, *Memorandum Opinion and Order*, 27 FCC Rcd 11493, 11494 n.12 (PSHSB 2012); *Port Authority of New York and New Jersey and Sprint Nextel Corp.*, *Memorandum Opinion and Order*, 27 FCC Rcd 1888, 1889 (PSHSB 2012); *County of Genesee, New York and Sprint Nextel Corp.*, *Memorandum Opinion and Order*, 26 FCC Rcd 12772, 12774 (PSHSB 2011).

Task	MSU Request	Sprint Offer	TA Mediator Recommendation	FCC Approval
Maben Retune	\$3,621	\$2,414	\$3,621	\$3,621
Sturgis – TTA engr.	\$4,260	\$1,200	\$4,260	\$4,260
Sturgis Structural Engineering	\$8,520	\$0	\$8,520	\$8,520 <sup>248</sup>
Sturgis – System Engineering in support of TTA replacement	\$4,200	\$700	\$2,975	\$700
Sturgis – Retune	\$2,414	\$603.50	\$2,414	\$2,414
System Engineering in support of equipment installation	\$4,200	\$1,400	\$1,400	\$1,400
TTA Equipment	\$20,000	<i>See n.249 infra.</i>	<i>See n.250 infra.</i>	<i>See n.251 infra.</i>
Retuning 200 Radios	\$79,865.29	\$0	\$0	\$0
Harris Oversight – Method 1 Testing	\$2,800	\$2,100	\$2,800	\$2,800
Drive testing travel and per diem	\$7,242	\$4,828	\$6,305	\$6,305
Harris technicians and engineer travel and per diem	\$5,248	\$3,473.80	\$3,473.80	\$3,473.80
Harris System Engineering	\$31,500	\$15,400	\$31,500	\$15,400
Tusa on-site manager.	\$93,000	\$45,000	\$45,000	\$45,000
Tusa “principal oversight”	\$10,044	\$1,080	\$4,860	\$0
Tusa other management services	\$65,138	\$40,280	\$40,280	\$40,280
Negotiation costs – 10/18/11-3/9/12 –	\$91,828	\$0	\$91,828	\$91,828

<sup>248</sup> Approval is conditioned on MSU providing the TA Mediator with a copy of the Sturgis lease showing that a structural study is required when equipment on the tower is replaced. *See* ¶ 65 *supra*.

<sup>249</sup> Sprint proposes to supply two TTAs for less than \$20,000 as part of “Schedule D” equipment.

<sup>250</sup> The TA Mediator concurs that Sprint may supply the TTAs.

<sup>251</sup> The Bureau supports the Sprint proposal to provide the TTAs for less than \$20,000 as part of the Schedule D equipment.

Task	MSU Request	Sprint Offer	TA Mediator Recommendation	FCC Approval
Harris negotiation cost post 3/9/12	\$28,612.50	\$14,000	\$28,612.50	\$28,612.50

99. In sum, applying our case precedent and the *800 MHz Report and Order* and subsequent orders, we find that MSU will receive comparable facilities if its existing 3-site scan radios are retuned to the new NPSPEC band. To the extent that the retuned radios do not meet emission mask H requirements in the new NPSPEC band when operated on the control channel, their failure to meet those requirements is not a consequence of retuning the radios. The radios' performance before and after retuning is comparable, albeit deficient, with respect to emission mask conformity. Therefore, the responsibility for remedying such deficient performance rests with MSU, not Sprint. We have, however, relieved MSU of that responsibility by waiving conformity with emission mask H for the non-compliant radios when they are operated on the control channel because the non-compliance is so transient as not to pose an actual interference hazard. Finally, we have reviewed each component of MSU's claimed costs and, where appropriate, have disapproved some of those costs as excessive.

## VI. ORDERING CLAUSES

100. Accordingly, pursuant to the authority of Sections 0.131 and 0.331 of the Commission's rules, 47 C.F.R. §§ 0.131, 0.331; Section 4(i) of the Communications Act of 1934, as amended, 47 U.S.C. § 154(i), and Section 90.677, of the Commission's Rules, 47 C.F.R. § 90.677, IT IS ORDERED that the issues submitted by the Transition Administrator are resolved as discussed above.

101. IT IS FURTHER ORDERED, that Section 90.210 of the Commission's rules, 47 C.F.R. § 90.210, IS WAIVED to the extent indicated herein.

102. IT IS FURTHER ORDERED, that representatives of Sprint Nextel Corporation and the Mississippi State University, each with the authority to bind its principal, SHALL MEET under the auspices of the Transition Administrator Mediator, within ten business days of the release date of this *Memorandum Opinion and Order* to conclude a Frequency Reconfiguration Agreement consistent herewith and that such meeting shall continue from business day to business day until the parties reach agreement in principle.

103. This action is taken under delegated authority pursuant to Sections 0.191(f) and 0.392 of the Commission's rules, 47 C.F.R. §§ 0.191(f) and 0.392.

FEDERAL COMMUNICATIONS COMMISSION

Michael J. Wilhelm  
Deputy Chief  
Policy and Licensing Division  
Public Safety and Homeland Security Bureau