90. IT IS FURTHER ORDERED that pursuant to sections 4(i), 303(f), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(f), and 303(r), and Section 553(d) of the Administrative Procedure Act, 5 U.S.C. § 553(d), the expiration date of the initial two-year mandatory BAS negotiation period for Phase I set forth in the *Second Report and Order* in ET Docket No. 95-18 IS HEREBY SUSPENDED until the effective date of the rules adopted herein, effective immediately upon release of this order, consistent with the terms discussed above.

91. IT IS FURTHER ORDERED that pursuant to sections 4(i), 302, 303(e) 303(f), 303(g), 303(r) and 405 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 302, 303(e), 303(f), 303(g) and 405, that the petitions for reconsideration in ET Docket No. 95-18 filed by Joint Petitioners (CICC, FWCC, *et al*), Broadcast Filers (Cosmos Broadcasting Corp., Cox Broadcasting, *et al*), Society of Broadcast Engineers, Inc., and National Association of Broadcasters and the Association for Maximum Service Television, Inc., ARE GRANTED to the extent discussed herein.

92. IT IS FURTHER ORDERED that the petitions for reconsideration in ET Docket No. 95-18 filed by Joint Petitioners (CICC, FWCC, *et al*) and Celsat America, Inc. ARE DISMISSED AS MOOT, to the extent discussed herein.

93. IT IS FURTHER ORDERED that the petitions for reconsideration in ET Docket No. 95-18 filed by Joint Petitioners (CICC, FWCC, *et al*), Enron North America Corp., SBC Communications, Inc., Broadcast Filers (Cosmos Broadcasting Corp., Cox Broadcasting, *et al*), Society of Broadcast Engineers, Inc., and National Association of Broadcasters and the Association for Maximum Service Television, Inc., ARE DENIED in all other respects.

94. IT IS FURTHER ORDERED that the Final Regulatory Flexibility Analysis, as required by Section 604 of the Regulatory Flexibility Act and as set forth in Appendix C, IS ADOPTED.

95. IT IS FURTHER ORDERED that the Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Third Report and Order and Third Memorandum Opinion and Order, including the Final Regulatory Flexibility Certification, to the Chief Counsel for Advocacy of the Small Business Administration.

96. IT IS FURTHER ORDERED that the proceeding in ET Docket No. 95-18 IS TERMINATED.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch

Marlene H. Dortch
Secretary

Joint Petitioners, MSS may not identify their selected 2 GHz frequencies until they have placed their first satellite in its intended orbit.[209]

85. We decline to extend cost-sharing eligibility to self-relocating FS incumbents. Under the plan adopted in the *MSS Second Report and Order*, relocation of incumbent FS microwave links need occur only if there is harmful interference.[210] We find that allowing self-relocating FS incumbents to share in relocation costs would circumvent our intention of limiting relocation to those FS incumbents receiving interference which cannot be resolved through the coordination process and a TSB-86 (or TSB 10-F for terrestrial ATC to FS) interference determination. Furthermore, we find that requiring relocation under those circumstances would inordinately increase the relocation cost burden on MSS licensees.

PROCEDURAL MATTERS

A. Final Regulatory Flexibility Analysis

86. The Final Regulatory Flexibility Analysis is attached in Appendix C. The action contained herein also has been analyzed with respect to the Paperwork Reduction Act of 1995 (PRA) and found to impose no new or modified reporting and/or recordkeeping requirements or burdens on the public.

87. The Commission will send a copy of the Third Report and Order and Third Memorandum Opinion and Order, including a copy of this Final Regulatory Flexibility Certification, in a report to Congress pursuant to the Congressional Review Act.[211] In addition, the Third Report and Order and Third Memorandum Opinion and Order and this final certification will be sent to the Chief Counsel for Advocacy of the SBA, and will be published in the *Federal Register*.[212].

B. Further Information

88. For further information regarding this Third Report and Order and Third Memorandum Opinion and Order, contact Jamison S. Prime, Office of Engineering and Technology, (202) 418-7474, or Gary R. Thayer, Office of Engineering and Technology, (202) 418-2290.

ORDERING CLAUSES

89. Accordingly, IT IS ORDERED that, pursuant to sections 4(i), 7, 302, 303(c), 303(e), 303(f), 303(g) and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. sections 154(i), 157, 302, 303(c), 303(e), 303(f), 303(g) and 303(r), this Third Report and Order and Third Memorandum Opinion and Order IS ADOPTED and that Parts 2, 74, 78, and 101 of the Commission's Rules ARE AMENDED as specified in Appendix B, effective 30 days after publication in the Federal Register.

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[209] Response of ICO to Petitions for Reconsideration and for Partial Reconsideration of the *MSS Second Report and Order* at 6.

[210] *MSS Second Report and Order*, 15 FCC Rcd at 12339, para. 75.

[211] *See* 5 U.S.C. § 801(a)(1)(A).

[212] *See* 5 U.S.C. § 605(b).

82. We decline to require MSS licensees to relocate FS incumbents from which they receive - but do not cause - interference prior to the end of the sunset period. As a practical matter, we believe that MSS licensees will act in their own best interests to maximize the marketability of their service when dealing with any interference that might be received from FS incumbents. In that regard, nothing in the *MSS Second Report and Order* or our finding herein prohibits an MSS licensee from making an individual business decision to resolve instances of interference received from an FS incumbent prior to the sunset date through a voluntary arrangement with the FS licensee. Such an arrangement could include terms for relocating the incumbent FS operation. Consequently, rather than making such relocation mandatory, we believe that it is better for each MSS licensee to make its own business case decision whether to relocate FS incumbents from which it may receive interference in light of the quality of service the MSS licensee seeks to provide.

83. Furthermore, as the Commission stated in the *MSS Second Report and Order* with regard to balancing the relocation burdens on each service, MSS licensees in the 2 GHz band will face unusually high costs in gaining early access to spectrum because of the nationwide nature of their service.[206] Requiring MSS licensees to relocate only those FS incumbents to which interference is caused prior to the sunset period is but one step the Commission has taken to minimize the relocation expense for MSS licensees and, thereby, provide their early access to the 2 GHz band. Indeed, the Commission found in the *MSS Second Report and Order* that many of the adopted measures will work hardships upon the incumbents in order to minimize relocation costs to MSS licensees. At the same time, requiring MSS licensees to relocate FS incumbents who are *caused* interference by MSS operations prior to the sunset will ensure the integrity and continuity of the services provided to the public by incumbent FS licensees during the ten-year sunset period. Furthermore, the sunset date for FS relocation serves the public interest by providing certainty to the relocation process, prevents MSS licensees from being obliged to pay relocation expenses indefinitely, and provides incumbents with ample time to either negotiate relocation *or plan for relocation themselves.* Therefore, we affirm that MSS licensees are not required to relocate FS incumbents from which they receive, but do not cause, interference prior to the sunset date. After the sunset date, FS incumbents will be required to relocate at their own expense upon demand by a MSS licensee that determines it will receive harmful interference according to TIA TSB-86 (or TSB-10F in the case of ATC operations by MSS licensees), or that has received actual harmful interference from the FS licensee.[207] We do not find these provisions to be inconsistent as suggested by petitioners. Instead, we find that they are complementary toward achieving our underlying goal of crafting a relocation process that strikes a fair balance for all parties.

84. *Voluntary self-relocation.* Joint petitioners and SBC request that we clarify that incumbents in the 2110-2150 MHz or 2165-2200 MHz bands that voluntarily self-relocate may participate in 2 GHz band relocation cost sharing in similar fashion to the relocation plan we adopted for Personal Communications Services (PCS) in a separate proceeding.[208] ICO responds that such an approach is inappropriate in this proceeding because, unlike the situation in the PCS cost-sharing proceeding cited by

[206] *Id*, 15 FCC Rcd at 12352, para. 111.

[207] *MSS Second Report and Order*, 15 FCC Rcd at 12341, para. 80.

[208] Joint Petitioners Joint Petition for Clarification and Reconsideration of the *MSS Second Report and Order* at 9. SBC Petition Partial Reconsideration of the *MSS Second Report and Order* at 2.

existing fixed microwave systems after April 25, 1996, will be authorized on a secondary basis.[200] Furthermore, Section 1.929(a)(2) of the Rules (on wireless telecommunications system applications and proceedings) states that any substantial change in ownership or control is included among the actions that are classified as major.[201] Reading these two sections together, petitioners state that an assignment or transfer of control could be interpreted to preclude relocation eligibility of the incumbent. Petitioners also correctly point out that, while Section 1.929(a)(3) states that renewals are similarly considered a "major" change, we nevertheless specifically provided in the *MSS Second Report and Order* that an incumbent FS whose license is renewed would remain eligible for relocation. Finally, the Joint Petitioners cite the Commission's determination in the 18 GHz Relocation Proceeding that an incumbent's change of ownership or control (along with other specified minor technical modifications) would be permissible while retaining relocation eligibility so long as the modifications would not result in a facility that is more costly to relocate.[202]

80. We agree with the Joint Petitioners' analysis that our policy on assignment or transfer of control of incumbent FS licensees needs to be clarified. Therefore, consistent with our finding in the 18 GHz Relocation Proceeding, we clarify that an assignment or transfer of control will not disqualify an FS incumbent in the 2180-2200 MHz band from relocation eligibility so long as the facility is not rendered, as a result, more expensive to relocate. On the other hand, FS stations newly authorized after the date of publication of the *MSS Second Report and Order* (*i.e.*, September 6, 2000) will not be eligible for relocation. In addition, FS stations making changes that are otherwise classified as major modifications under § 1.929(a) will not be eligible for relocation.

81. *Interference to MSS operations.* Joint Petitioners and Enron urge that MSS licensees be obligated to relocate incumbents prior to the ten-year sunset whenever the MSS licensee would *receive* interference from incumbent FS operations in addition to whenever interference is caused to FS incumbents.[203] Enron further asserts that the current provisions ignore half of the interference picture prior to the sunset and would allow MSS licensees to engage in "cherry picking" where they commence operations in order to minimize initial relocation expenses during their start-up phase.[204] Petitioners correctly observe that, prior to the ten-year sunset for FS relocation in the 2 GHz band, we require MSS licensees to relocate FS incumbent licensees after coordination and a determination according to TIA TSB-86 that interference would be *caused* to an FS incumbent.[205] Subsequent to the sunset, FS microwave licensees will be required to relocate at their own expense within six months of presentation of a written demand by a MSS licensee that determines it "will receive harmful interference according to TIA TSB-86, or that has received actual harmful interference from the FS licensee."

[200] 47 C.F.R. § 101.81 ("Future licensing in the 1850-1990 MHz, 2110-2150 MHz, and 2160-2200 MHz bands.").

[201] 47 C.F.R. § 1.929(a)(2) ("Classification of filings as major or minor.").

[202] Joint Petitioners Joint Petition for Clarification and Reconsideration of the *MSS Second Report and Order* at 15, citing *Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use*, IB Docket No. 98-172, *Report and Order*, (*18 GHz Relocation Proceeding*), 15 FCC Rcd 13430 (2000) at 13466, para. 75.

[203] Joint Petitioners Joint Petition for Clarification and Reconsideration of the *MSS Second Report and Order* at 3; Petition of Enron North America Corp. (Enron) for Partial Reconsideration or Clarification of the *MSS Second Report and Order* at 4.

[204] Enron Petition for Partial Reconsideration or Clarification of the *MSS Second Report and Order* at 5, *et seq.*

[205] *MSS Second Report and Order*, 15 FCC Rcd at 12340, para. 78.

77. We agree with petitioners that the potential for confusion could be reduced if all parties know with certainty when the mandatory negotiation period begins. However, rather than issuing a public notice as suggested by petitioners, we conclude that a simpler approach would be to adopt a date certain in the rules for commencement of the mandatory negotiation period. This approach removes the potential for uncertainty in determining precisely which initial contact between an MSS licensee and FS incumbent qualifies as the trigger for mandatory negotiations. Furthermore, this approach obviates placing any new reporting burdens on MSS or FS licensees for notifying the Commission of the start of negotiations. Finally, this approach conforms more closely with the BAS relocation plan that also specifies the starting dates for the mandatory negotiations, involuntary relocation, and sunset of all relocation obligations. We also note that a substantial amount of time has already lapsed since adoption of the FS relocation plan. During this time, all parties have been aware that mandatory negotiations were in the offing and have had ample opportunity to make plans for this eventuality. Furthermore, MSS proponents have argued that the ATC component recently authorized for MSS licensees would be instrumental in accelerating their ability to move forward with the relocation process. Therefore, we believe it would not be in the public interest to delay further the start of the mandatory negotiation period for a further uncertain period of time (i.e., until whenever the first MSS licensee seeks to negotiate relocation of an FS incumbent). Therefore, we are specifying that the date of publication of this Report and Order and Memorandum Opinion and Order in the *Federal Register* will be the starting date of the mandatory negotiation period between MSS licensees and FS incumbents, as well as the starting date of the related ten-year sunset period for relocation of FS licensees by MSS licensees in the 2180-2200 MHz band.[198] Similarly, we believe that the duration of the mandatory negotiation period should be modified - from two years for non-public safety and three years for public safety - to one year and two years, respectively. Given the amount of time that has already passed since adoption of the *MSS Second Report and Order* and the upcoming MSS milestone requirements, we believe that this modification is appropriate to maintain the balance of equities between MSS licensees and FS incumbents.

78. We decline to adopt the Joint Petitioner's request that MSS licensees be required to notify FS incumbents of their intention to relocate incumbents within 90 days of the start of the mandatory negotiation period. Under the relocation plan adopted in *MSS Second Report and Order*, we have placed substantial relocation burdens on MSS licensees with respect to FS – in addition to BAS – incumbents in the 2 GHz band. In order to help balance these substantial burdens, we believe that MSS licensees should be afforded maximum flexibility in choosing the timing of negotiations during the mandatory negotiation period. At the same time, we find that the negotiation starting date that we have adopted herein will provide sufficient notice for all FS incumbents to factor such relocation into their business plans. Therefore, we affirm that MSS licensees may elect to notify FS incumbents of their desire to enter into relocation negotiations at any time during the mandatory negotiation period and will not be required to provide anticipatory notice prior to doing so. Taken together, we believe that these actions balance the public interests in providing the opportunity for early entry of new MSS operations while maintaining the integrity of incumbent FS services in the 2 GHz band.

79. *Assignment or transfer of control.* The Joint Petitioners urge that we clarify that an assignment or transfer of control of an incumbent FS license does not result in a loss of primary status and, hence, relocation eligibility.[199] In support of this request, Joint Petitioners point to Section 101.81 of the rules (on future licensing in the 2160-2200 MHz band) which states all major modifications to

[198] As noted in note 83, *supra*, we will calculate future dates by counting from the date that this Report and Order is published in the *Federal Register*. However, the rules we adopt will take effect 30 days after publication of the Report and Order in the *Federal Register*. *See* 47 C.F.R. § 1.427 ("Effective date of rules").

[199] Joint Petitioners Joint Petition for Clarification and Reconsideration of the *MSS Second Report and Order* at 11.

negotiation periods during which each FS incumbent would be allowed a full two or three year mandatory negotiation period that would be triggered when notified by an MSS licensee of its desire to negotiate. Such a scheme would result in a large number of unrelated mandatory negotiation periods that would tend to further delay the overall relocation process in the band. We believe that such discontinuity would be likely to create considerable confusion and lack of finality as compared with a single uniform negotiation period for all FS incumbents.

3. Memorandum Opinion and Order

75. *Ten-year sunset period.* In response to the *MSS Second Report and Order*, Critical Infrastructure Communications Coalition (CICC), Fixed Wireless Communications Coalition (FWCC), *et al*, (collectively, "*Joint Petitioners*") seek clarification that the mandatory FS negotiation period commences with the initiation of relocation negotiations between MSS licensees and FS incumbents.[192] They argue that the existing rules do not specify which "emerging technology" services are considered the first licensee for triggering the start of the negotiation period that, in turn, establishes the benchmark for determining the ten-year sunset date.[193] Joint Petitioners assert that, as a result, MSS licensees could interpret the sunset period to commence with negotiations by, for example, PCS licensees (*i.e.*, the first "emerging technology" service to be licensed by the Commission).[194] They also note this confusion in the rules is compounded by fact that a pertinent rule section refer to a "voluntary" negotiation period when there is none for MSS and FS licensees in the 2165-2200 MHz band.[195]

76. Joint Petitioners also request that the Commission issue a public notice indicating the date when the first MSS licensee informs the first FS licensee of its desire to negotiate.[196] They argue that such a public notice would better clarify for all interested parties the time of commencement of the relocation negotiation and sunset periods. In support of this request, Joint Petitioners point out that the *MSS Second Report and Order* makes no provision – other than for the first FS licensee approached by MSS to negotiate – for other FS licensees to be made aware of when the mandatory negotiation period commences. Joint Petitioners urge that a public notice that indicates the date when the first MSS licensee informs the first FS licensee of its desire to negotiate would eliminate any confusion. In addition, Joint Petitioners argue that the similar to the provisions for 800 MHz SMR licensee relocation in Section 90.699 of the Rules, MSS licensees should be required to notify FS incumbents of their intention to relocate such incumbents within 90 days of the release of the public notice that commences the mandatory negotiation period.[197]

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[192] Critical Infrastructure Communications Coalition (CICC), Fixed Wireless Communications Coalition (FWCC), *et al*, (collectively, "Joint Petitioners") Joint Petition for Clarification and Reconsideration of the *MSS Second Report and Order* at 6.

[193] *Id.* at 7, citing 47 C.F.R. § 101.79 (a). In this regard, we note that Section 101.79 (a) discusses the general sunset provisions that also apply to the 1850 – 1990 MHz band and the 2110 – 2150 MHz band. Under the current rules, voluntary negotiation periods do apply in certain bands. For the 2165 – 2200 MHz band, however, Section 101.79 (a) must be read in conjunction with Section 101.69 (d) which further specifies that relocation in this particular band is subject to mandatory negotiations only.

[194] Joint Petitioners Joint Petition for Clarification and Reconsideration of the *MSS Second Report and Order* at 7.

[195] *Id.*

[196] *Id.*

[197] *See* 47 C.F.R. § 90.699.

numbered herein as Section 101.82, *infra*. Appendix B.) We decline, however, to adopt API's suggestion that we *require* the initial MSS licensee of ATC to relocate both paired FS links and, instead, leave that decision to be resolved in the first instance through the relocation negotiation process. As a practical matter, we again note that when one path of a paired FS link is relocated, it is often necessary due to technical considerations to relocate both path links. Consequently, even without a mandatory requirement, we believe that both links will, in practice, be relocated in most instances. In particular, since the FS transmit/receive electronics, antenna and tower are often highly integrated, it would likely be more expensive and complex to relocate just one link due to the additional retuning and retrofitting – above and beyond that normally involved with paired links – that would be required to ensure seamless operation with the legacy link under the comparable facility requirement. The general result is that there should be a clear financial and technical incentive for MSS/ATC licensees to relocate both paired links as at the same time.

72. On the other hand, there can be individual situations where it is both economically and technically feasible within reason to relocate just one of the paired links. To the extent such a situation occurs, we do not believe that MSS/ATC licensees should be *per se* deprived of this option by regulation. In any event, FS licensees are ensured of comparable facilities under the relocation rules and they have a year under these rules to determine if a satisfactory result has been achieved.[188] Therefore, we continue to believe that leaving the decision of whether to relocate both paired links to the negotiation process is the better and more flexible approach.

73. *Self-relocation to leased facilities or alternative media.* In response to our request for comments in the *AWS Further Notice*, Blooston asks that we clarify that FS incumbents who voluntarily self-relocate to leased facilities or alternative media are eligible for reimbursement.[189] As an initial matter, we affirm that FS incumbents that are relocated through the negotiation process are eligible for reimbursement for relocation to leased facilities or alternative media. This is consistent with the approach we have previously taken in the *Emerging Technologies* and *Microwave Cost-Sharing* proceedings.[190] We decline, however, to extend reimbursement eligibility or automatic reimbursement credits as requested by Blooston to FS incumbents that voluntarily self-relocate to leased facilities or alternative media. In addition to the reasons discussed below in the MO&O section with regard to Joint Petitioners' and SBC's related requests, we find that a reimbursement scheme for voluntary self-relocation was not envisioned by the MSS/FS relocation plan and would likely require a clearinghouse to administer reimbursement claims. We believe that initiating a plan for reimbursing those who voluntarily relocate is not warranted and that a further rulemaking at this stage to consider such a plan would only serve to delay MSS entry in the 2 GHz band.

74. *Negotiation periods.* In response to the *AWS Further Notice*, API and the Association of Public-Safety Communications Officials-International (APCO) urge that we clarify that each FS incumbent approached by an MSS licensee for relocation negotiations would receive the benefit of a full two year (or three year for Public Safety) negotiation period.[191] We decline to establish such "rolling"

[188] 47 C.F.R. §101.75 (d)

[189] Initial Comments of Blooston Law Firm (Blooston) to the *AWS Further Notice*.

[190] *See MSS Second Report and Order*, 15 FCC Rcd at 12351, para. 108 regarding alternative media (citing *Emerging Technologies Report and Order and Third Notice*, 7 FCC Rcd 6886, para. 24). *See also*, 47 C.F.R. § 24.243 (b) that specifies leased facilities as an example of relocation costs that may be included in the cost-sharing formula in PCS relocation proceeding.

[191] Comments of APCO to the *AWS Further Notice* 3-4; API comments to the *AWS Further Notice* at 9.

interference between satellite and fixed services.[180] In the *ATC Notice,* the Commission observed that the interference criteria and mechanisms would be different between incumbent FS and the terrestrial (ATC) facilities of MSS than they are for interference between FS and MSS.[181] The Commission further observed that it had adopted TIA Bulletin TSB 10-F previously as the criteria for determining PCS to FS interference.[182] Bulletin TSB 10-F describes interference criteria for microwave systems in public fixed radio services and private operational fixed microwave service bands. Noting that MSS terrestrial operations would appear to be technically similar to PCS which operates in nearby bands, the Commission proposed to adopt the same criteria to determine where sharing would be possible between FS and MSS terrestrial operations.[183]

69. In response to the *ATC Notice*, the American Petroleum Institute (API) comments that it agrees with our proposal that TIA Bulletin TSB 10-F should be adopted for purposes of triggering relocation obligations by new terrestrial MSS operations in the 2 GHz band.[184] API also agrees that it is not appropriate to use TIA TSB-86 for this purpose because the criteria in that bulletin are designed for determining interference from satellite operations.[185] No commenting parties opposed use of TSB-10F.

70. We affirm that TIA TSB 10-F, or its successor standard, is an appropriate standard for purposes of triggering relocation obligations by new terrestrial (ATC or AWS) entrants in the 2 GHz band.[186] Due to the technical similarity of MSS terrestrial operations to PCS which operates in nearby bands and for which TSB 10-F is well-suited, we conclude that the criteria specified in TSB 10-F should be equally suitable to determine where sharing would be possible between FS and MSS terrestrial operations in the 2180 – 2200 MHz band. Our conclusion is consistent with the *MSS Second Report and Order* wherein the Commission determined that, in the case of terrestrial new service/FS interference, TIA Bulletin 10-F would be the relevant standard.[187] We also affirm that, similar to our application of the TSB-86 standard for MSS interference, the MSS licensee of any new terrestrial ATC operation must relocate incumbent FS licensees upon determination, based upon TSB 10-F, that interference would be caused to the incumbent operations. Of course, TIA Bulletin TSB-86 remains the applicable standard to be used with regard to the satellite component operations by MSS licensees.

71. Furthermore, consistent with the approach we adopted for MSS satellite operations in the *MSS Second Report and Order*, where an initial MSS licensee of terrestrial ATC operations relocates both links of a paired FS microwave link, any subsequent licensee(s) that benefit from the relocation will be required to participate in the reimbursement of the initial licensee. (See former Section 101.99 re-

[180] TSB86 was developed by a Joint Working Group comprised of the Telecommunications Industry Association (TIA) Engineering Subcommittees on Spectrum and Orbit Utilization, the TIA Engineering Subcommittee on Interference Criteria for Microwave Systems, and the National Spectrum Managers Association. *MSS Second Report and Order*, 15 FCC Rcd at 12340, para. 78, n. 131.

[181] *ATC Notice*, 16 FCC Rcd at 15562, para. 76.

[182] *Id. See* 47 C.F.R. § 24.237. *See also* Amendment of the Commission's Rules to Establish New Personal Communications Services, *Second Report and Order*, 8 FCC Rcd 7700, 7762, para. 150 (1993); *Memorandum Opinion and Order*, 9 FCC Rcd 4957, 5029, para. 186 (1994).

[183] *ATC Notice*, 16 FCC Rcd at 15562, para. 76.

[184] Comments of the American Petroleum Institute (API) to the *AWS Further Notice* at 6-7.

[185] *Id.*

[186] Consistent with 47 C.F.R. §101.105 (c), procedures other than TSB-10F that follow generally acceptable good engineering practices are also acceptable.

[187] *MSS Second Report and Order*, 15 FCC Rcd at 12346, para. 97, n.160. See also, 47 C.F.R. §101.79 (a).

Order, the Commission adopted a plan for the relocation of FS incumbents by new MSS licensees in the 2165-2200 MHz band. The relocation plan provides for a single mandatory negotiation period that commences when the first MSS licensee informs the first FS licensee in writing of its desire to negotiate.[173] The mandatory negotiation period lasts for two years for non-public safety FS incumbents, and three years for public safety FS.[174] The Commission decided that new MSS licensees would not be required to relocate incumbent FS microwave licensees until after both an interference analysis and coordination process are completed.[175] Consistent with the policies adopted in our *Microwave Cost-Sharing Proceeding*,[176] the Commission established a sunset date – ten years after the mandatory negotiations begin – for the MSS obligation to pay relocation costs for FS incumbents.[177]

67. *Subsequent Developments.* We have already discussed above, in connection with the BAS/MSS relocation, the two major rulemaking proceedings in ET Docket No. 00-258 and IB Docket No. 01-185 in which the Commission proposed and sought comment on alternative uses for portions of the 2 GHz band. Among other matters, those rulemakings addressed alternative uses of the 2165-2200 MHz band that had been allocated to MSS in the *MSS Second Report and Order*. In the *AWS Third Report and Order*, the Commission ultimately decided to reallocate the 2165-2180 MHz portion of the 2165-2200 MHz band to AWS. In the *ATC Report and Order*, the Commission permitted authorized 2 GHz MSS systems to integrate ATCs into their MSS networks. Furthermore, in both the *AWS Further Notice* and the *ATC Notice*, the Commission asked for comment on the effect that any spectrum reallocation would have on the relocation of FS incumbents by MSS in the band.[178] As with the BAS relocation issues raised in those rule makings, the Commission deferred consideration of the FS relocation issues raised therein to future proceedings such as this. We limit our discussion in this section to the petitions for reconsideration of the *MSS Second Report and Order* and the comments filed in response to the *AWS Further Notice* and the *ATC Notice* that address MSS/FS relocation issues – now construed as being limited to the 2180-2200 MHz band. As indicated above, the FS links in the 2180-2200 MHz band are paired with links in the 2130-2150 MHz band. We intend to address the relocation of FS operations in the 2165-2200 MHz band in the context of other proceedings, including ET Docket No. 00-258.

2. Report and Order

68. *ATC Interference to FS.* Under the relocation plan adopted in the *MSS Second Report and Order*, MSS licensees are required to relocate those FS licensees that would receive harmful interference from MSS, but are not required to relocate any FS licensees with which MSS could successfully share the spectrum.[179] To determine when interference between the two services would occur, the Commission decided to rely upon TIA Bulletin TSB-86, which specifies a methodology and criteria for computing

[173] *MSS Second Report and Order*, 15 FCC Rcd at 12343, paras. 86-87; 47 C.F.R. §101.73(d).

[174] *MSS Second Report and Order*, 15 FCC Rcd at 12343, paras. 86-87; 47 C.F.R. §101.69(d)(1) and (d)(2).

[175] *Id.*, 15 FCC Rcd at 12340, para. 78.

[176] *Amendment to the Commission's Rules Regarding a Plan for Sharing the Costs of Microwave Relocation (Microwave Cost Sharing)*, WT Docket No. 95-17, *First Repot and Order and Further Notice of Proposed Rulemaking*, 11 FCC Rcd 8825 (1996); *Second Report and Order*, 12 FCC Rcd 2705 (1997).

[177] *MSS Second Report and Order* 15 FCC Rcd at 12341, para. 80; 47 C.F.R. §101.79(a).

[178] *AWS Further Notice*, 16 FCC Rcd at 16058, para. 34; *ATC Notice*, 16 FCC Rcd at 15561-62, paras. 75-76.

[179] *MSS Second Report and Order*, 15 FCC Rcd at 12340-41, paras. 76-78.

63. MSS licensees and BAS incumbents in markets 1-30 and all BAS fixed stations, regardless of market size, will begin a mandatory negotiation period that lasts for one year from the date of publication of this Report and Order in the *Federal Register*. After that period, MSS licensees may begin the involuntary relocation of these BAS incumbents. Once these BAS licensees have been relocated, MSS licensees that cannot share spectrum with BAS incumbents may begin operations in the 2000-2020 MHz band. Once this first MSS licensee begins operations, all BAS licensees in markets 31-210 must immediately cease operations on channels 1 and 2 (1990-2025 MHz). As of that date, BAS operations will no longer be permitted in the 1990-2025 MHz band. Also on that date, a one-year mandatory negotiation period will begin between MSS licensees and BAS incumbents in markets 31-210. Although MSS licensees may involuntarily relocate BAS incumbents at any time after the expiration of the one-year mandatory negotiation period, BAS incumbents in markets 31-100 must be relocated within three years of the date the first MSS licensee begins operations, and BAS incumbents in markets 101-210 must be relocated within five years of this date.

64. We also revise the sunset date. Ten years after publication of this Report and Order in the *Federal Register*, a new licensee's obligation to relocate an incumbent BAS operator in the 1990-2025 MHz band will end. At that time, BAS operations in the band (if any remain) will operate on a secondary basis. In all other regards, we retain the existing relocation procedures first established in the *MSS Second Report and Order*. For example, we decline to require the reimbursement of relocation expenses for BAS facilities for which initial applications were filed after adoption of the *MSS Second Report and Order*.

B. FS issues

1. Background

65. *FS use and channel pairing.* Prior to its recent allocations to MSS and AWS, the 2165-2200 MHz band was allocated to the Fixed and Mobile Services. Under that prior allocation, the 2165-2200 MHz band is currently used by commercial and private FS microwave licensees. These licensees provide telephone communications, communications for industry, and public safety communications.[168] Compared with BAS, FS microwave is far less integrated with respect to cooperation among licensees, consisting essentially of a large number of individual links with coordination required only upon first activation of any link to ensure that the new link is sufficiently removed from existing links in frequency, geography, and orientation to avoid harmful interference.[169] The FS operations in this band are typically configured to provide two-way microwave communications between paired links. In this case, the FS microwave links in the 2165-2200 MHz band are paired with links in the 2115-2150 MHz band. Consequently, if one link is relocated to another frequency band, it is usually necessary due to technical re-tuning considerations to relocate both links of the two-way FS microwave system.[170] We note that the paired 2115 – 2150 MHz band is part of the larger 2110 – 2150 MHz band that we recently reallocated for AWS.[171]

66. *Relocation Plan.* MSS operations in the 2165-2200 MHz band were to be used for satellite service downlinks. There is the potential for interference to occur from MSS satellite downlinks into FS receivers and from FS transmitters into MSS handsets.[172] Consequently, in the *MSS Second Report and*

[168] *MSS Second Report and Order*, 15 FCC Rcd at 12345, para. 143.

[169] *Id.*, 15 FCC Rcd at 12329, para. 42.

[170] *Id.*, 15 FCC Rcd at 12345, para. 95.

[171] *AWS Second Report and Order*, 17 FCC Rcd 23193.

[172] *ATC Notice*, 16 FCC Rcd at 15561, para. 75, n. 95.

that causes interference, we would make the relocation process further complex and disrupt the careful balance we have established between allowing incumbent users to continue to operate within the BAS channel block and providing new entrants a realistic opportunity to enter the band. Thus, we decline to adopt additional reimbursement procedures to account for potential BAS-to-BAS interference during the transition.

60. *Additional Issues Raised by Petitioners*. In the discussion on FS relocation issues, *infra*, we discuss the issue of relocation rights for microwave stations that have been transferred or assigned. NAB/MSTV raises similar concerns with respect to BAS transfers and assignments, but without the extensive analysis provided by those petitioners that asked for reconsideration in the FS context. Although we discuss this issue in depth in that section of the Memorandum Opinion and Order, we note for instant purposes that our conclusion there is applicable to all services that are subject to relocation in the 1990-2025 MHz and 2165-2200 MHz bands. Thus, we clarify that an assignment or transfer of control will not disqualify an incumbent in the 2 GHz BAS band from relocation eligibility so long as the facility is not rendered more expensive to relocate as a result.

61. Our decision to immediately initiate Phase II of the relocation process renders moot the request by NAB/MSTV to modify our Phase I relocation procedures to require the relocation of all BAS spectrum to the Phase I channel plan within five years of the first MSS licensee beginning service.[165] Because we are initiating the Phase II relocation procedures by way of this Report and Order, it is also not necessary to provide the public notice announcing the beginning of each negotiation period, as NAB suggests.[166] The initiation of service by the first new licensee in the 1990-2025 MHz band – the trigger for the one-year mandatory negotiation period for all other markets – will be sufficiently well known so as to not require a special public notice by the Commission. Moreover, because such new MSS licensees ultimately are required to relocate BAS stations in all markets, subject to equitable reimbursement when new licensees enter the 1990-2000 MHz and 2020-2025 MHz bands, it will be incumbent on new licensees to contact and begin negotiations with the BAS licensees. We also dispose of the petition filed by Celsat, which asked us specify that only those MSS licensees that cannot share operations with BAS incumbents are prohibited from using the 2023-2025 MHz band during the transition.[167] Because the provisions relating to use of this 2 megahertz segment were intended to provide for robust use of BAS channel 2 during the Phase I channelization, and because our decision will not invoke the Phase I channel plan, this restriction is no longer necessary. Accordingly, we remove the restriction in its entirety.

4. Summary of BAS Relocation

62. Under the modified BAS relocation plan, we retain the distinction of BAS licensees by market size and require the relocation of these licensees within the time period specified for each market. However, we are immediately beginning Phase II of the relocation plan, which will result in the relocation of BAS licensees to the "final" 2025-2110 MHz band plan in a single step. Our relocation procedures require that the first MSS entrant that cannot share spectrum with BAS incumbents will be required to retune, refilter, or replace BAS equipment so that it operates on the revised BAS band plan (consisting of seven 12 MHz-wide channels and two 500-kHz DRL channels) pursuant to the schedule described below.

[165] NAB/MSTV Petition for Reconsideration of the *MSS Second Report and Order* at 5. *See also* ICO Reply to Petitions for Reconsideration and Partial Reconsideration of the *MSS Second Report and Order* at 2 (opposing the NAB/MSTV petition).

[166] NAB/MSTV Petition for Reconsideration of the *MSS Second Report and Order* at 11. As discussed above, we are starting the mandatory negotiation period by action of this decision.

[167] Celsat Petition for Reconsideration of the *MSS Second Report and Order* at 3.

important than the positive factors – including continued analog operation on channels 3-7 likely being sufficient to meet some markets' needs and the ability to keep existing equipment as backup.[161]

58. We will continue to permit split channel operation by BAS licensees operating on the Phase II channel plan. Although we did not prohibit such operation, and did not intend to suggest such a prohibition, we find it beneficial to clarify this issue. We also believe that BAS licensees should have the ability to continue to operate on channels 3-7 under the "old" channel plan, if they so elect. As SBE notes, there are many reasons why licensees would choose to adopt the new channel plan. However, we will not prohibit BAS licensees from continuing to use the existing channel plan, so long as they restrict their use to the 2025-2110 MHz band when they are no longer permitted to use the 1990-2025 MHz band segment. Because the continued use of the existing channel plan could disrupt BAS licensees that have relocated to the Phase II channel plan and lead to the difficulties in coordination that SBE describes, we will permit continued use of the "old" channel plan only if all BAS licensees in a market will agree to such operation.[162] Moreover, BAS licensees in such markets must operate on a secondary basis to other BAS licensees using the Phase II channel plan and must be prepared for the potential disruption associated with secondary operation, such as the interference likely to be caused by a BAS licensee operating on the Phase II channels that enters the market to cover a sporting event or breaking news story.

59. *Interference Issues*. Because the BAS relocation is segmented by market, BAS licensees in one market could be operating on a different channel plan than BAS licensees in adjacent markets for part of the relocation period. Several parties have asked for clarification of the procedures by which BAS operations will be protected from harmful interference during and after the transition. SBE describes situations in which large market BAS facilities cause interference in adjacent smaller markets even while operating within the bounds of the larger market, and predicts that BAS licensees operating in the smaller market may need to reconfigure their systems in order to eliminate or avoid interference.[163] To the extent that such interference is similar to interference that small market stations have previously received from their large market neighbors, we expect the parties to use the same coordination procedures that they have previously employed to resolve these issues. Moreover, the Commission previously considered comments by SBE and NAB/MSTV regarding the complexities associated with the operation of BAS equipment on different channels in different markets, and found a simultaneous cut-over to be impractical.[164] Some of the procedures described in the *MSS Second Report and Order* for the accommodation of secondary out-of-market licensees operating on a different channel plan – such as the use of BAS channels 8 and 9, as well as the use of satellite newsgathering equipment – may be an effective means to eliminate interference between adjacent-market BAS facilities. While these mitigation options may not be available in all cases, we find the cooperative procedures of BAS entities will minimize any negative effects. Were we to require reimbursement for the secondary effects of the relocation of larger market BAS stations, either by the new licensee or by the large market BAS station

[161] SBE *ex parte* filing in ET Docket No. 95-18 (filed April 3, 2003) at 3-4.

[162] In the *MSS Second Report and Order*, we permitted BAS licensees the choice of surrendering BAS channel 1 during Phase I or relocating to the 14.5 MHz- and 15 MHz-wide Phase I channels. To facilitate an orderly coordination process and to prevent interference, we required all BAS licensees within the same Nielsen DMA to coordinate and chose one of these channel plans. *MSS Second Report and Order*, 15 FCC Rcd at 12330, para. 45. *See also* Appendix B (modifying 47 C.F.R. § 74.690(e)(2) and 47 C.F.R. § 78.40 (f)(2)).

[163] SBE Petition for Partial Reconsideration of the *MSS Second Report and Order* at 1-5 and 8; SBE Comments to the *AWS Further Notice* at 3-4.

[164] *See MSS Second Report and Order*, 15 FCC Rcd at 12324 & 12327, paras. 23 (discussing these comments) and 34 (rejecting a simultaneous cut-over).

intervals.[155] ICO opposes modifications to the band plan we adopted in the *MSS Second Report and Order* on the basis that any change would cause confusion and delay by requiring manufacturers to retrofit existing equipment.[156]

56. We find merit in the SBE proposal, as modified. As SBE notes, a prime benefit of this plan is that manufacturers will be able to design for uniform bandwidth ratios. Moreover, by providing for two 500 kilohertz-wide DRL bands, we can promote efficient use of the band by BAS licensees. Although ICO has expressed concerns about the potential difficulties related to the retrofit of existing equipment to meet the revised band plan, we note that because any existing equipment has already been designed to operate on the narrow bandwidths required in Phase II, it should be relatively easy to program this equipment to use the modified channels.[157] Moreover, replacement of the current Phase II channel plan with the revised band plan could reduce MSS and other licensees' overall costs to relocate BAS. One BAS equipment manufacturer has stated that retrofitting certain existing equipment to operate in the current Phase II channel plan would require the replacement of synthesizers, which would "represent a major cost factor."[158] By contrast, the SBE plan's uniform channel sizes would permit the continued use of existing synthesizers.[159] Because we are now initiating Phase II relocation and because equipment has been developed that is capable of operating in the narrow channel widths associated with Phase II, we do not believe that adoption of the modified channel plan will cause hardship for BAS licensees and instead conclude that it offers numerous benefits. Accordingly, we are revising our Phase II channel plan to specify seven 12 megahertz-wide channels and two 500 kilohertz-wide DRL bands. This channel plan is illustrated in Table 1, above.

57. SBE also requests that split channel operation be explicitly permitted during Phase II of the relocation, and that broadcasters in individual markets have the option to elect to retain five 17 MHz-wide BAS channels indefinitely under Phase II of the relocation, as opposed to the seven narrowband channels they are slated to use under the Phase II channel plan.[160] In more recent filings, SBE has backed away from the second of these proposals. In a recent *ex parte* filing, it concluded that the negative factors – including difficulties in frequency coordination, likelihood that wideband equipment would no longer be supported by manufacturers, and possible diminution in BAS relocation bargaining power – were more

[155] SBE states that, for compatibility purposes, a DRL channel could also be used to provide ATPC for TVPU transmitters. This would be accomplished though the addition of a separate modularized receiver attached to the RS-232 data input port that most modern-day 2-GHz coded orthogonal frequency division modulation ("COFDM") radios have. Since under this proposal there would be 40 DRL channels – even in a top BAS market with channel splits – providing fourteen ENG channels instead of just seven, SBE avers that there would be a sufficient number of DRL channels to accommodate an enhanced, ATPC mode of operation for all TVPU stations wishing to do so. SBE believes that a "polite protocol," where a DRL transmitter steps through each of the 20 possible DRL channels in the pertinent lower or upper DRL band (as appropriate for the TVPU channel to which it is to be associated), and starts transmitting on the first available channel, may be practical. SBE *ex parte* filing in ET Docket No. 95-18 and comments in WT Docket No. 00-258 (filed April 14, 2003) at 6.

[156] Response of ICO to Petitions for Reconsideration and for Partial Reconsideration to the *MSS Second Report and Order* at 5.

[157] For example, Nucomm has designed its newest digital/analog equipment to be field re-programmable to new channel plans. Nucomm *ex parte* filing in ET Docket No. 00-258 (filed April 3, 2003) at 10.

[158] *Id.* at 6.

[159] *Id.*

[160] SBE Petition for Partial Reconsideration of the *MSS Second Report and Order* at 5-6.

licenses, the requirement to cease use of channels 1 and 2 was not in effect because the modified BAS channel plan had not been adopted.

55. *Phase II BAS Channel Plan.* SBE asks us to modify the channel plan that was adopted in the *MSS Second Report and Order* in order to provide consistent channel spacing. Specifically, SBE first asked, as part of its petition for partial reconsideration, that we adopt a uniform 12.1 megahertz channel width in the final channelization plan.[150] Subsequently, SBE refined its proposal to propose the use of seven 12 megahertz channels.[151] The revised channel plan will provide for channel center frequencies (and split-channel center frequencies) that fall on integer multiples of 250 kHz.[152] SBE states that this spacing is critical because this is the current step increment for oscillators used in the frequency synthesizers in modern-day 2 GHz TV BAS radios. The use of seven 12 megahertz-wide channels will also allow for two 500 kilohertz-wide data return link ("DRL") bands – one at each end of the re-farmed 2025–2110 MHz BAS band. SBE explains that these DRL bands would be available for narrowband downstream control channels to TVPU transmitters (such as an ENG truck) for applications such as transmitter power control.[153] SBE states that the DRL channels could additionally let both ENG crews and news directors know when an ENG path was getting near the "cliff" threshold that applies to digitally modulated signals.[154] SBE envisions twenty 25 kilohertz wide DRL channels at each end of the re-farmed 2 GHz TV BAS band, with reverse band protocols. That is, a TVPU station operating on re-farmed channels 1, 2, 3, 4 or 5 would use one of the twenty DRL channels from the band 2109.5-2100 MHz, and a TVPU station operating on re-farmed channels 4, 5, 6 or 7 would use one of the twenty DRL channels from the band 2025-2025.5 MHz. SBE observes that providing for these DRL channels would still provide seven channel (and split-channel) center frequencies evenly divisible by 250 kilohertz

[150] SBE Petition for Partial Reconsideration of the *MSS Second Report and Order* at 1-6. SBE also asks for modifications in the Phase I channel plan. *Id.* at 2. Because that channel plan will not be used, we dismiss those comments as moot.

[151] SBE *ex parte* filing in ET Docket No. 95-18 (filed April 3, 2003) at 9. *See also* SBE Comments in WT Docket No. 00-258 (filed April 16, 2003) at 5.

[152] Under split channel operation, BAS licensees in a market send two BAS signals in the space occupied by a single channel, with each signal overlapping the other, as well as the edge of adjacent channels in some cases. While this practice degrades the quality of the BAS signal, it doubles the channel capacity of BAS. The practice is used by licensees in some of the larger markets to satisfy demands for BAS channels. *See MSS Second Report and Order*, 15 FCC Rcd at 12330, para. 45. *See also* SBE Petition for Partial Reconsideration of the *MSS Second Report and Order* at fig. 2 (illustrating split channel operation on existing BAS channel 3).

[153] Transmitter power control involves adjusting the transmit power in response to fading or interference conditions. SBE observes that at para. 48 of the *Report and Order* in ET Docket 01-75 (Updating and Harmonizing of the Part 74 BAS Rules), the Commission adopted automatic transmitter power control ("ATPC") for BAS, even though it recognized that most BAS links wouldn't be able to use this feature, since most BAS links are one-way (*i.e.*, simplex). SBE notes that the creation of downstream narrowband DRL channels would allow ATPC for 2 GHz TVPU operations. Further, because DRL channels would be narrowband and would only need to relay limited data, SBE believes that the DRL transmitter could use low power (perhaps 1 watt) and a very robust and simple modulation type (such as binary frequency shift keying). Further, SBE believes that such a low-power DRL signal, even when co-located with a 2 GHz receiver at an ENG receive-only site, should be a compatible use, if a reverse-band protocol is used.

[154] In digital modulation, performance is given in bit error rate versus E_b/N_o (similar to signal-to-noise ratio). These performance curves resemble a "waterfall curve," and are quite precipitous for low bit error rates. For a system operating near the threshold (*i.e.* the point at which the curve begins to drop sharply), a small change in E_b/N_o can cause the system to "fall off the cliff" that is represented by the steep curve. The effect is reduced performance or a system failure when the signal level falls below the system's threshold.

licensed on a secondary basis and, therefore, are not eligible for relocation. NAB/MSTV and SBE ask that we extend the relocation eligibility to include BAS licensees issued after June 27, 2000. NAB/MSTV claims that because the initial applications that have been licensed on a secondary basis will first use the existing (*i.e.* non-Phase II) channel plan that is in effect in their market, they will face the added expense of equipment upgrades once their market begins use of Phase II channels.[145] SBE states that the relocation eligibility cut-off has created a chilling effect on the licensing and use of new BAS facilities because at the time of the *MSS Second Report and Order* the Commission was authorizing digital equipment only on a special temporary authority (STA) basis.[146] It asks us to instead allow for relocation of all BAS facilities whose licenses were granted prior to the Commission's November 11, 2002, *Report and Order* that adopted rules for the licensing of digital BAS equipment.[147]

54. We find that the relocation eligibility cut-off date remains appropriate and, therefore, are denying these petitions. None of the subsequent decisions to allow new services in the band or pleadings filed in response to the *MSS Second Report and Order* affects the fundamental decision to provide for an 85 megahertz BAS allocation. Holders of BAS licenses issued after the *MSS Second Report and Order* have known that the Commission proposed to reduce the 2 GHz BAS band to the 85 megahertz allocation in the 2025-2110 MHz band and have an opportunity to consider any additional expenses that may be associated with phased relocation as well as the development, availability, and Commission approval of digital equipment that can be used in the band. SBE claims that the situation "forc[es] an effective freeze on the 2 GHz TV BAS band" until the Commission begins routinely authorizing digital equipment.[148] If licensees have made the economic decision to delay BAS facility deployment pending the authorization of digital equipment, then there should be few, if any, subsequently licensed BAS entities that will actually need to deploy new digital equipment in order to operate in the Phase II band plan. Moreover, equipment manufacturers now produce equipment that readily can be switched to operate on both the existing and new BAS channel plans.[149] Because such equipment is available for new licensees, we believe that the cost of switching to the Phase II channel plan can be greatly minimized for those subsequently licensed BAS entities that must re-tune without reimbursement from MSS licensees. We contrast these new BAS licensees with those existing fixed licensees on channels 1 and 2, for which we are granting additional relocation relief. First, the existing licensees were already entitled to relocation within five years of new use of the band, so our decision to require relocation before new licensees begin service in the band represents a shift in the relocation timing as opposed to an expansion of the number of BAS licensees subject to relocation. In addition, when these existing BAS licensees acquired their

[145] NAB/MSTV Petition for Partial Reconsideration of the *MSS Second Report and Order* at 10.

[146] SBE Petition for Partial Reconsideration of the *MSS Second Report and Order* at 4.

[147] *Id.* At the time NAB/MSTV filed its comments, the Commission had not yet adopted such rules and therefore NAB/MSTV referenced a future occurrence as opposed to this specific date. The November 11, 2002, Report and Order updated the BAS rules to, *inter alia*, allow for digital operation in the 2 GHz BAS band. *See* Revisions to Broadcast Auxiliary Service Rules in Part 74 and Conforming Technical Rules for Broadcast Auxiliary Service, Cable Television Relay Service and Fixed Services in Parts 74, 78 and 101 of the Commission's Rules, *Report and Order*, 17 FCC Rcd 22979 (2002).

[148] SBE Petition for Partial Reconsideration of the *MSS Second Report and Order* at 4.

[149] Nucomm *ex parte* filing in ET Docket No. 95-18 (filed May 12, 2003) at 9-10. Microwave Radio Communications (MRC) also promotes its equipment as being readily adaptable across a variety of frequency bands. *See, e.g.*, http://www.mrcbroadcast.com/datasheets2/Codrunner_2.pdf (describing the Code Runner 2 portable analog/digital transmitter as featuring "Customized Channel Plans" that allow users to set 12, 14, and 17 megahertz band plans "according to [their] needs.")

channelization is adopted within the licensee's market.[141] Another option for fixed-link facilities is relocation to higher bands, such as 7 and 13 GHz. In some cases, these bands will allow for relocation in markets where there currently is no availability on existing channels 3-7. If a suitable replacement channel cannot be found within a BAS market for a BAS channel 1 or 2 facility and the parties are unable to agree to an alternative relocation plan as part of the mandatory negotiation process, then the MSS licensee will not be obligated to replace that facility until such time that it is obligated to relocate all BAS facilities in that market.[142] In this situation, the incumbent BAS licensee will still be required to cease use of the 1990-2025 MHz band once the first new licensee begins operations.

52. The relocation of fixed stations on channels 1 and 2 in markets 31 and above will follow the same procedures that we established for the relocation of facilities in BAS markets 1-30, including a mandatory negotiation period that ends one year from publication of this Report and Order in the *Federal Register*. Because these revised relocation procedures are applicable to all fixed BAS stations that operate on a primary basis in markets 31 and above, new licensees will be able to readily identify and account for those fixed facilities subject to relocation.[143] We realize that our decision will increase the relocation requirements we impose on new MSS entrants in the band, and we expand this obligation only because of the fundamental importance in ensuring continued BAS operations. As with our general relocation procedures (as affirmed, below), fixed BAS stations operating on channels 1 or 2 that were licensed on a secondary basis – *i.e.* BAS applications submitted after release of the *MSS Second Report and Order* on June 27, 2000 – will not be eligible for the expanded relocation procedures. These subsequently licensed BAS entities were aware that BAS use of the 1990-2025 MHz band would be discontinued, and should not receive the windfall of relocation at the expense of new licensees in the band.

53. *Subsequently Licensed BAS Stations.* In the *MSS Second Report and Order*, the Commission decided that those BAS facilities where the receipt date of the initial application was prior to June 27, 2000, the adoption date of the *MSS Second Report and Order*, could continue to operate on a primary basis until relocated or the sunset date.[144] Initial applications filed after that date have been

[141] See Table 1. Under the final channel plan, channel 1 (2025.5-2037.5 MHz) will be fully within current channel 3 (2025-2042 MHz). Similarly new channel 4 will be fully within existing channel 5 and new channel 7 will be fully within existing channel 7. An additional option exists: the parties may agree to relocate or retune equipment to operate in existing channels 3-7 until such time that those channels are relocated to the Phase II channel plan. At that time, the BAS incumbents would join their peers who had always been operating in channels 3-7 in seeking relocation to the final Phase II channel plan.

[142] We note that the parties must conduct negotiations in good faith, and we expect them to employ best engineering practices when evaluating whether it is possible to locate a replacement channel within the remaining BAS channels. Because there are a number of options for the relocation of fixed links, including landline links and frequencies outside the 2025-2110 MHz band, we suspect that there will be few, if any, instances in which MSS and fixed BAS licensees will be unable to reach an agreement to relocate a fixed BAS facility.

[143] We find such a course preferable to any type of self-identification scheme, as discussed by some commenters. *See* Broadcast Filers Petition for Reconsideration of the *MSS Second Report and Order* at 4. *See also* ICO Response to Petitions for Reconsideration and for Partial Reconsideration of the *MSS Second Report and Order* at 8. To the extent that there are any fixed stations that can be reprogrammed or retuned at minimal cost to operate in the final Phase II channel plan, such expenses by definition will be small and would likely not outweigh the cost and time burdens associated with the identification, collection, and publication of a registry of fixed stations for which new equipment will be necessary.

[144] 47 C.F.R. §2.106 Footnote NG 156. *See also MSS Second Report and Order*, 15 FCC Rcd at 12335, para. 59. This relocation process also applies to those BAS licenses meeting the cut-off date for which licensees filed subsequent facilities modification applications.

Report and Order.[135] For example, loss of the studio-to-transmitter links for KALB-TV and KBSD-TV, as described in the Broadcast Filers' petition, would likely necessitate the stations to obtain alternate facilities to transport their signal to their transmitter for broadcast. Otherwise, these licensees would have to wait up to three years for relocation under the relocation procedures. We do not believe that such an outcome "minimize[s] the disruption and down time BAS licensees will undergo in the transition, in order to continue day-to-day high quality BAS service."[136] Moreover, while the Commission found in the *MSS Second Report and Order* that the number of BAS channels could be reduced during the transition, it discussed the aggregate need for seven channels in a particular market and not the unique needs of incumbent licensees in the 1990-2025 MHz band with facilities that cannot operate on the remaining available channels.[137] Our decision to immediately move to Phase II makes this situation even more acute. Many BAS facilities that potentially could have been retuned to operate in the interim Phase I channels will likely need to be replaced with spectrally efficient digital equipment in order to operate in the narrow Phase II channels.

50. As evidenced by the examples cited by the Broadcast Filers, the elimination of BAS operations in the 1990-2025 MHz band can be expected to have a significant effect on fixed BAS facilities, such as intercity relays and studio-to-transmitter links. By contrast, mobile BAS facilities are generally licensed from band edge to band edge (*i.e.* authorized to operate in any one of the BAS channels) and should not suffer such harm.[138] In a survey of our licensing database, we find that there are 455 fixed BAS stations operating on channels 1 and 2, as well as 44 other fixed facilities operating on these channels.[139] In addition, three TV pickup stations operate only on channel 1 and seven TV pickup stations operate only on channel 2. Some of the stations listed above operate in the top 30 markets and are therefore already subject to relocation prior to the start of new services in the band.

51. Accordingly, we will expand our relocation procedures to require fixed facilities operating on the 1990-2025 MHz band in markets 31 and above that are licensed on a primary basis to be relocated on the same schedule as other BAS facilities in the top 30 markets, to the extent that replacement channels are available.[140] Because other BAS facilities in markets 31 and above will not yet be operating on the final channel plan, it may be necessary for these fixed BAS stations to operate within the existing BAS channels – either on those final 12 MHz-wide channels that are completely within an existing BAS channels or by deploying agile equipment that can be readily re-tuned once the final

[135] The Broadcast Filers describe fixed channel equipment that either was not manufactured with the capability of operating on more than one channel or that cannot be modified because the equipment manufacturer is no longer in operation. Broadcast Filers Petition for Partial Reconsideration of the *MSS Second Report and Order* at 2-3.

[136] *MSS Second Report and Order*, 15 FCC Rcd at 12326, para. 28.

[137] *See, e.g., id.*, 15 FCC Rcd at 12327, para. 35 (stating that the relocation plan "ensures the continuity of a seven-channel BAS system where seven channels are most needed [in the top 30 markets], while allowing several years for the relocation of BAS in the Light and Rural markets, where the need for seven channels is less pressing.").

[138] *See* Appendix D. By being able to operate on different BAS channels, mobile ENG equipment can successfully operate in remote locations in which the number of other BAS users and the channels they are using can will vary by both time and place.

[139] These include common carrier point-to-point microwave facilities, TV microwave booster, and aural intercity relay links.

[140] To simplify the relocation process, we will apply this requirement to all fixed stations operating on a primary basis in the 1990-2025 MHz band. If a fixed facility can be retuned, then "relocation" of such a facility may be as simple as just retuning the existing equipment.

matters for the 2 GHz MSS band, we find that revising a sunset date is appropriate. Further, our decision to initiate the Phase II negotiation period by way of this Report and Order is similar to our earlier decision to begin the Phase I negotiation period after publication of the *MSS Second Report and Order* in the *Federal Register*, which also began the original sunset date. In both cases, the beginning of the negotiation period marks a starting point for active negotiations between incumbents and new licensees. Accordingly, we are revising the sunset date as follows: a new licensee's obligation to relocate an incumbent BAS operator in the 1990-2025 MHz band will end ten years after the publication of this Report and Order in the *Federal Register*.[126]

48. *Special Considerations for Fixed Facilities.* Under the two-phase relocation policy, BAS licensees would first cease operations on the 1990-2008 MHz band once MSS operations begin and, during Phase II, would stop using the 2008-2025 MHz band.[127] In their Petition for Reconsideration of the *MSS Second Report and Order*, the Broadcast Filers ask that we expand mandatory relocation to those BAS facilities operating on channel 1 (1990-2008 MHz) in markets 31 and above that cannot be retuned and refiltered to accommodate the Phase I channelization.[128] SBE, in a substantially similar request, asks that we require the relocation of all non-frequency agile links in both BAS channels 1 and 2 (1990-2025 MHz) outside the top 30 markets.[129] The Broadcast Filers identify a number of stations that operate intercity relays on the 1990-2008 MHz band that they claim cannot be reprogrammed, and ask that we require MSS licensees to relocate these facilities before beginning service.[130] The Broadcaster Filers' petition was supported by NAB/MSTV[131] and the Arkansas Broadcasters Association.[132] ICO suggests that the number of single-channel transmitters and receivers that could not be retuned to accommodate the transition plan is small in number and urges the adoption of detailed procedures for identifying and accommodating such equipment.[133] The Broadcast Filers dispute ICO's claim that they overstated the number of facilities that fall into this category.[134]

49. The situation the Broadcast Filers describe has the potential to disrupt some BAS operations and uniquely burden a limited class of licensees in a manner not considered in the *MSS Second*

[126] We note that the revised sunset date does not alter a MSS licensee's obligation to relocate incumbent BAS users in markets 31-100 and 101-210 within three and five years after the first MSS licensee begins service, so long as the sunset date has not been reached by the time the three- and five-year periods run.

[127] By initiating Phase II and adopting the modifications described *supra*, we effectively require all BAS licensees in markets 31 and above to cease use of the entire 1990-2025 MHz band when the first 2 GHz MSS licensee begins operations.

[128] Cosmos Broadcasting, Cox Broadcasting and Media General (collectively, "Broadcast Filers") Petition for Partial Reconsideration of the *MSS Second Report and Order* at 2-3.

[129] SBE Petition for Partial Reconsideration of the *MSS Second Report and Order* at 8.

[130] Broadcast Filers Petition for Partial Reconsideration of the *MSS Second Report and Order* at 2-3.

[131] NAB/MSTV Comments on Petitions for Reconsideration of the *MSS Second Report and Order* at 3.

[132] Arkansas Broadcasters Association Reply Comments to the *MSS Second Report and Order*.

[133] ICO Response to Petitions for Reconsideration and for Partial Reconsideration of the *MSS Second Report and Order* at 8.

[134] *See* Broadcast Filers Reply to ICO Response to Petitions for Reconsideration and for Partial Reconsideration of the *MSS Second Report and Order*.

interests that the relocation plan was designed to accommodate are unchanged. In addition, the ability of MSS to make quick use of the 2000-2020 MHz band would be frustrated were we to undertake a comprehensive rulemaking proceeding to substantially revise the relocation process. The modified version of the existing plan we are adopting serves the goals of our relocation policy and also accounts for the special circumstances involved in the transition of BAS and introduction of satellite services into the band.

3. Memorandum Opinion and Order

45. *Sunset Date.* In its Petition for Partial Reconsideration, NAB/MSTV requests that the sunset date after which new MSS licensees are not required to relocate BAS operations be eliminated, or at a minimum, revised to take effect ten years after the start of Phase II negotiations.[121] It claims that the pace of relocation will be determined largely by MSS licensees, and that it is unlikely that the smallest BAS markets will be relocated before the scheduled 2010 sunset date. ICO, in its response, claims that the Commission afforded consideration to these concerns when it issued the *MSS Second Report and Order*.[122] In subsequent pleadings, other commenters also suggest that we revise or eliminate the sunset date.[123]

46. As an initial matter, we continue to believe that a sunset date is a vital component of the Emerging Technologies relocation principles. As stated in the *MSS Second Report and Order*, a sunset date provides a measure of certainty for new technology licensees, while giving incumbents time to prepare for the eventuality of moving to another frequency band.[124] In the *MSS Second Report and Order*, the Commission selected a ten-year sunset after the beginning of the negotiation period because that was the date that had been used for microwave relocation negotiations, and because the record contained "no persuasive reason" to adopt a different date.

47. We recognize that the unresolved issues relating to MSS deployment have resulted in limited negotiation between BAS and MSS licensees to date.[125] Now that we have addressed allocation

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into the class of new users of the band, the type of wholesale revision of the relocation plan likely associated with a Notice of Proposed Rulemaking is unnecessary and, as described in the text, would be counterproductive. *See also* ICO Reply Comments to the *ATC Notice* at 13-14 (arguing that the Commission's inquiry into allowing terrestrial services by MSS licensees did not represent an open-ended invitation to modify any and all relocation rules). Because the fundamental construct of the BAS relocation is not changed, it is not necessary for us to reconsider MSS deployment rules (including milestone review dates) in this proceeding, as is suggested by Boeing.

[121] NAB/MSTV Petition for Partial Reconsideration of the *MSS Second Report and Order* at 8.

[122] ICO Response to Petitions for Reconsideration and for Partial Reconsideration of the *MSS Second Report and Order* at 4.

[123] *See, e.g.,* 2 GHz Broadcast Group Reply Comments to the *ATC Notice* at 5 (asking that we suspend the sunset date until after the Commission allocates the BAS spectrum).

[124] *MSS Second Report and Order*, 15 FCC Rcd at 12333, para. 52. Because our Emerging Technologies principles are intended to allow new licensees early entry into the band and are not designed as open-ended mechanism for providing relocation compensation to displaced incumbents, it would be inconsistent with those principles to eliminate the sunset date even if, as a practical matter, we expect that all BAS incumbents will be relocated prior to that date.

[125] *Accord* 2 GHz Broadcast Group Reply Comments to the *ATC Notice* at 5 (noting that has been minimal opportunities for relocation while the various proceedings affecting this band have been pending).

that ends one year from publication of this Report and Order in the *Federal Register*.[116] This time period is appropriate to maintain the balance of equities between MSS licensees and BAS incumbents given the amount of time that has already passed since adoption of the *MSS Second Report and Order*, and the upcoming MSS milestone requirements. We also modify our rules to make explicit that a one-year mandatory negotiation period for BAS markets 31 and above starts when the first MSS licensee begins operations.[117] Finally, we specify that the relocation procedures will apply to the BAS markets as they existed upon adoption of the *MSS Second Report and Order* – June 27, 2000. Because these rules are based on a ranking of DMAs, and because DMAs and their rank are subject to modification, it is important for us to specify a fixed point in time in order to prevent potential confusion or frustrate negotiations between parties. Because we are beginning Phase II without substantially modifying the underlying relocation process, and because parties may have already made relocation and negotiation plans, the most appropriate course is for us to use the DMAs as they existed at the time the Commission adopted the *MSS Second Report and Order*.

43. Under our existing rules, BAS licensees in markets 31 and above would have had to stop using BAS channel 2 after the Phase II negotiations began but before MSS operations actually commenced in the 2008-2025 MHz band.[118] Because BAS incumbents have not had the benefits of relocation under Phase I, we find this requirement is overly burdensome and we will ease our rules to allow all BAS licensees to use channels 1 and 2 (*i.e.* the 1990-2025 MHz band) while new licensees are negotiating with BAS licensees in the top 30 markets. BAS operations on the 1990-2025 MHz band in these markets must instead end once the first MSS licensee begins service.[119]

44. We decline to consider more comprehensive modifications to our relocation procedures. We reject the Joint Commenters' suggestion that we explore such revisions as part of a Notice of Proposed Rulemaking as unnecessarily burdensome and time consuming.[120] As we noted above, the core

[116] Phase II, and the accompanying mandatory negotiation period, previously was scheduled to begin when any MSS licensee informed BAS licensees, in writing, of its desire to negotiate for relocation. *See MSS Second Report and Order*, 15 FCC Rcd at 12331, para. 46. We see no need to adopt 2 GHz Broadcast Group's suggestion that we tie the start of the negotiation period for Phase II spectrum to the completion of our reallocation of the reclaimed BAS spectrum. *See* 2 GHz Broadcast Group Reply Comments to the *ATC Notice* at 4. Completion of the reallocation of the reclaimed BAS spectrum could, for example, be viewed as coinciding with the issuance of the *AWS Third Report and Order*, a date which has already passed. Our decision to establish a fixed end date for the mandatory negotiation period also makes unnecessary the requirement that the first MSS licensee in Phase II spectrum provide written notification to the Commission and all other MSS licensees that it has begun the negotiation process. *See MSS Second Report and Order*, 15 FCC Rcd at 12331, para. 46.

[117] *See MSS Second Report and Order*, 15 FCC Rcd at 12339, para. 73.

[118] *See* 47 C.F.R. § 74.690(e)(4). BAS operations on the 2008-2025 MHz band in markets 31 and above must end "[a]s of the date that any MSS Licensee announces its intention to begin operations in the 2008-2025 MHz band." The date that "[a]ny MSS Licensee announces ... its intention to begin operations in the 2008-2025 MHz band" also represents the beginning of the two-year negotiation period with BAS licensees in markets 1-30. Because MSS operations cannot begin until after BAS licensees in markets 1-30 are first relocated, a significant amount of time could pass between the date on which BAS operations in markets 31 and above cease and the date in which MSS operations actually commence.

[119] We conclude that we can best serve the needs of BAS licensees by allowing them to use the 1990-2025 MHz band for as long as possible. Because MSS licensees will be in the process of relocating BAS facilities in markets 1-30, there will be areas in which the 2000-2020 MHz band is available for any necessary testing prior to the initiation of actual MSS service.

[120] Joint Commenters Reply Comments to the *AWS Further Notice* at 5. Because the overall principle that new licensees may secure early entry into the 1990-2025 MHz band is unchanged by the addition of terrestrial licensees

(continued....)

example, although the Ad Hoc Survey shows that the greatest projected relocation costs will occur in markets 1-30, these costs are approximately 40 percent of the estimated cost to relocate all markets.[110] Those commenters that assert that the market-segmented approach is unnecessary incorrectly assume that non-MSS licensees will be the first to initiate service in the 1990-2025 MHz band and, as a result, do not account for the unique needs of MSS licensees.[111] In addition, the introduction of ATC does not alter our conclusion: because MSS licensees are obligated to begin satellite service before offering terrestrial services, our decision to permit ATC operations will not reduce up-front costs or provide an earlier revenue stream to defray such costs.[112]

41. Finally, we find that the other factors that led to the adoption of a market-segmented approach are still valid. Because new equipment is readily available, one concern that drove the original two-phase relocation plan – that additional time would be needed for equipment manufactures to develop and build equipment that operated in the Phase II channels – is no longer at issue. Nevertheless, we recognize that it will still take time to retune or replace existing BAS equipment. For example, SBE estimates that it takes one month to transition one electronic news gathering transmit and receive system at an average television station.[113] To require the relocation of all BAS facilities before MSS or other new licensees begin service in the band would result in intolerable delays in a process that has already been marked by longer-than-anticipated entry of new services into the band. Such a course would severely undermine the ability of MSS licensees to secure entry into the band. Accordingly, our decision to retain a market-segmented approach allows us to maintain a relocation plan that is not overly burdensome to MSS entrants but that is still fair to incumbents in the band.[114]

42. The elimination of Phase I requires the slight modification of several procedures. First, the restriction on the use of the 2023-2025 MHz band until all BAS incumbents have been relocated to the final band plan is no longer appropriate.[115] This restriction was designed to allow BAS licensees to use channel 2 under a channel plan that we will no longer be using. Moreover, we have subsequently reallocated the 2023-2025 MHz band to fixed and mobile services. Next, we re-establish the mandatory negotiation period between new licensees and BAS licensees in the top 30 markets. As discussed above, this negotiation period was scheduled to end on November 13, 2002, for Phase I, under the terms of the *Third Suspension Order*. Now that we have resolved the issues that prompted us to suspend expiration of the mandatory negotiation period, we anticipate that MSS licensees will move quickly to resume the negotiation process to relocate BAS incumbents in the 1990-2025 MHz band. As such, we establish a new mandatory negotiation period between MSS licensees and BAS incumbents in markets 1-30 (and for all fixed BAS facilities regardless of market, as described in the Memorandum Opinion and Order, *infra*)

[110] Ad Hoc Survey at 11, fig. 11.

[111] *See, e.g,* NAB/MSTV comments to the *AWS Further Notice* at 11; 2 GHz Broadcast Group Reply Comments to the *ATC Notice* at 3.

[112] *See, e.g.,* NAB/MSTV Reply Comments to the *AWS Further Notice* at 6 (stating that ATC will accelerate deployment of and provide ongoing income to support BAS relocation).

[113] SBE *ex parte* filing in ET Docket No. 00-258 (filed April 3, 2003) at 7; *See also* ICO *ex parte* filing in ET Docket No. 95-18 (filed Oct. 31, 2003) at 5.

[114] *See, e.g.*, ICO *ex parte* filing in ET Docket No. 95-18 (filed Oct. 9, 2003); ICO *ex parte* filing in ET Docket No. 95-18 (filed Oct. 31, 2003) (discussing financial issues that MSS licensees would face if the market differentiated relocation approach was substantially altered to, for example, require that the BAS facilities in the top 100 markets be relocated prior to the time in which MSS begins operations).

[115] *See* NAB Comments to the *AWS Further Notice* at 10.

existing BAS channels, as is illustrated in Table 1.[103] In addition, at least some new BAS equipment is expected to be designed so that it can readily be programmed to operate on both new and old BAS channels.[104] We also note that use of BAS channels 8 and 9 is unaffected by the transition. Our decision to initiate Phase II relocation procedures will, in some ways, actually serve to reduce the difficulties associated with BAS licensees operating on different channel plans in different markets at the same time. Because there are now only two channel plans for the BAS band, licensees will not have to account for the possibility of concurrent BAS use of three separate channel plans.[105]

40. MSS licensees – for whom cost deferral continues to be a concern – will continue to occupy former BAS frequencies. We see no reason to change our decision to require relocation on a market-segmented basis because other types of new licensees will also occupy the band.[106] As SBE notes, it is unclear whether MSS or new terrestrial licensees will be the first to deploy service.[107] Because MSS licensees have significant up-front costs and cannot engage in a gradual buildout because of the large geographic reach of an MSS signal, a MSS licensee that is the first entrant in the band will still be required to pay substantial up-front BAS relocation costs and seek pro-rata reimbursement from subsequent licensees, without the benefit of having had a revenue stream as it builds out its system.[108] A market-differentiated approach allows for important cost-spreading benefits, particularly because the cost deferrals that were anticipated with a delay between Phase I and Phase II are no longer available.[109] For

[103] We believe that TV broadcasters, network entities, and CARS mobile licenses will promote efficient use of the BAS channels by choosing to take the following actions: Out-of-market 2 GHz TVPU stations could either employ equipment that can switch between the two band plans or use the three 12 MHz BAS channels (1, 4 and 7) that are fully within the existing BAS channels. Likewise, in markets using the existing BAS channel plan, use of channels 3, 5 and 7 could be reserved, to the extent possible, for out-of-market TVPU stations that are operating on the new 12 MHz channel plan. New BAS channel 4 also could be used for nationwide airborne TVPU use. If a 2 GHz fixed licensee needs a digital channel and it cannot be otherwise accommodated, then we recommend that the new licensee use new BAS channel 1 first and that new BAS channel 7 be considered next, even though doing so would reduce the number of channels available for out-of-market TVPU stations. We make this recommendation in order to place fixed stations on the outermost channels, which would best protect adjacent-band AWS mobile reception. Where practical, we also recommend that all 2 GHz BAS fixed stations be relocated to 7 GHz and 13 GHz, especially fixed stations operating on current BAS Channels 1 and 2.

[104] *See infra* n. 133 and accompanying text.

[105] We note that NAB/MSTV, in requesting that all BAS licensees be moved to the Phase I channel plan before MSS begins operations, states that "[w]ere all stations operating under the BAS Phase I channels before Phase II begins, as Broadcasters request, no more than two different channel plans will ever be in place at the same time, and the time when small markets will be operating under different plans than larger markets would be reduced." NAB/MSTV Petition for Partial Reconsideration of the *MSS Second Report and Order* at 6. Our decision to initiate Phase II delivers these same benefits.

[106] However, as noted below, we find that special relief is warranted for a subgroup consisting of those fixed stations operating on channels 1 and 2 in markets 31 and above.

[107] SBE *ex parte* filing in ET Docket No. 00-258 (filed April 3, 2003) (stating that "Because MSS has been allowed a terrestrial component, it may be assumed that MSS construction will occur earlier that it would have had only the space component been permitted. The timetable for AWS construction is uncertain due to the apparent application of the statutory auction requirement for all CMRS type facilities").

[108] *MSS Second Report and Order*, 15 FCC Rcd at 12325, para. 27.

[109] *See id.*, 15 FCC Rcd at 12327, para. 35. *See also* ICO *ex parte* filing in ET Docket No. 95-18 (filed Oct. 9, 2003) at 2-4 (asking that the Commission first analyze the extent of BAS relocation costs and the allocation of those costs among new entrants before undertaking any modification of the markets required to be relocated, due to the potential financial consequences to MSS entrants).

matter, because the rapid introduction of Phase II that would likely occur were we to retain the existing rules would eviscerate the benefits associated with Phase I of the transition, this decision simplifies what would otherwise become a complex relocation procedure with minimal attendant benefits. For the reasons described above, we can no longer conclude maintaining the existing two-phase relocation procedures strikes the appropriate balance that is "not unreasonably burdensome upon MSS, while also fair to the incumbents."[98] Given the subsequent developments in the 1990-2025 MHz band, our decision to initiate Phase II more effectively meets this goal.

36. The initiation of Phase II will allow us to supersede the remaining mandatory negotiation period for Phase I, which was due to end on November 13, 2003. Because the rules we adopt herein may not take effect before November 13, we will, effective immediately, extend the stay of the Phase I mandatory negotiation period that was adopted in the *Third Suspension Order* until such time that the rules become effective.[99]

37. Our decision to begin Phase II immediately will also afford MSS licensees greater opportunity to exercise the authority they have been granted to operate on a secondary basis to other MSS licensees when operating within the MSS band but outside their Selected Assignment. Under our rules, BAS licensees retain a primary authorization with respect to MSS licensees operating outside their Selected Assignments until the BAS incumbents are relocated, cease operation, or become secondary by operation of the sunset date. Under the one-phase relocation we adopt, all BAS operations in the 1990-2025 MHz band will either have been be relocated (in markets 1-30) or must cease operation (in all other markets) at the time the first 2 GHz MSS licensee begins operations.

38. We will also retain the existing market-segmented approach whereby MSS licensees relocate BAS facilities in markets 1-30 before they begin operations, markets 31-100 within three years after MSS begins operations, and markets 101 and above within five years after MSS begins operations. Those parties that asked us to require that all BAS markets be relocated at once base their arguments, in large part, on the difficulties that will be faced by BAS licensees operating on different channel plans.[100] The Commission previously considered these arguments in the *MSS Second Report and Order*, and ultimately concluded that a market-segmented approach was best suited to balance the needs of the current and future users of the band, notwithstanding the added challenges to BAS operations.[101] Nevertheless, we also recognize that by initiating Phase II, BAS licensees in markets 31-100 will have to operate on five, as opposed to six, channels for up to three years.[102] This situation would occur under our current rules if Phase II is initiated before Phase I is complete. Although licensees will benefit by being certain that they will be relocated to a final band plan in a set time period and in a single step, we also recognize that operation of five channels will create short-term burdens for some BAS licensees.

39. There are several factors can serve to mitigate any difficulties that may occur in coordinating BAS use in nearby markets that operate on different channel plans during the short duration of the transition. Although the final channel plan calls for the operation of seven channels in a smaller amount of spectrum, the bands of three of the new channels will be fully within the bands of three of the

[98] *MSS Second Report and Order*, 15 FCC Rcd at 12330.

[99] *See Suspension Order*, 17 FCC Rcd at 15143, para. 5 (reserving the option to lengthen or shorten the suspension of the expiration date as circumstances warrant).

[100] *See, e.g.*, SBE Reply Comments to the *AWS Further Notice* at 2.

[101] *MSS Second Report and Order*, 15 FCC Rcd at 12325-12326, paras. 25-28.

[102] *See, e.g.*, NAB and MSTV *Notice of Ex Parte* filing in ET Docket No. 95-18 (filed Sept. 2, 2003) at 1.

channel widths, including the narrow channels associated with Phase II.[89] Moreover, digital equipment has been available for a sufficient time, in such quantity, and such cost that broadcast stations buying new equipment have begun purchasing digital ENG equipment.[90] At the time the Commission developed its relocation plan, digital equipment for one BAS link was estimated to cost $93,000.[91] Recent filings in the docket reflect lower cost projections. SBE now estimates relocation costs for a BAS link to be between $20,000 and $25,000 (for a receive site) and between $40,000 and $55,000 (for a typical ENG vehicle).[92] ICO has derived similar cost estimates, based on its separate informal discussions with manufactures of 2 GHz capable digital BAS equipment.[93] A survey of the broadcast industry conducted by the Ad Hoc 2 GHz Reallocation Committee in September 2003 estimated the total population of 2 GHz transmitters and receivers in use at television stations in the United States and projected an overall cost of $397 million to convert 2 GHz ENG services to digital operation and as much as $115 million to convert 2 GHz fixed links to digital operation.[94] We note that the BAS relocation cost estimates based on the Ad Hoc Survey compare favorably to overall 2 GHz MSS relocation costs of up to $3 billion that had been estimated when the MSS allocation was initially proposed,[95] and support our overall conclusion that BAS equipment that can operate in the Phase II frequencies is now both readily available and available at a cost that is less than that which was anticipated at the time the relocation plan was adopted.

35. Collectively, all of these factors make the Phase I relocation plan no longer practical. We will initiate Phase II of the transition by way of this Report and Order.[96] Our decision to initiate Phase II immediately is consistent with suggestions made by several commenters, including SBE.[97] As a practical

[89] *See, e.g.,* Nucomm *ex parte* filing in ET Docket No. 00-258 (filed May 12, 2003) (describing its 2 GHz BAS equipment line and listing other manufacturers of digital 2 GHz BAS equipment); SBE *ex parte* filing in ET Docket No. 95-18 (filed April 3, 2003) at 5 (stating that "BAS equipment is being manufactured and sold as standard equipment today with the current technology mature enough to support adjustable COFDM bandwidths of 6, 7, or 8 MHz digital pedestals."). A survey of manufacturers' websites shows availability of digital BAS equipment, including models that allow users to operate on band plans of varying widths. *See, e.g.*, MRC (www.mrcbroadcast.com) and Global Microwave Systems, Inc. (www.gmsinc.com).

[90] *See* SBE *ex parte* filing in ET Docket No. 95-18 (filed April 3, 2003) at 6-7.

[91] "Reduced ENG Band Causes Concern," *TV Technology*, Sept. 25, 1997 at 28.

[92] *See* SBE *ex parte* filing in ET Docket No. 95-18 (filed April 3, 2003) at 7.

[93] ICO *ex parte* filing in ET Docket No. 95-18 (filed Oct. 9, 2003) at 2.

[94] Ad Hoc 2 GHz Reallocation Committee *ex parte* filing in ET Docket No. 95-18 (filed October 15, 2003) (Ad Hoc Survey). We note that ICO has questioned whether these figures under-represent the total relocation cost and claims that the survey results support a $1 to $2 billion relocation cost estimate. ICO *ex parte* filing in ET Docket No 95-18 (flied Oct. 31, 2003) at 2. We recognize that the Ad Hoc Survey can only serve as a rough estimate of BAS relocation costs. For example, ICO's projection may not account for the larger response rate of large market BAS stations, which will likely have more BAS equipment to relocate, and thus may over-represent relocation costs. However, because the Ad Hoc 2 GHz Reallocation Committee does not attempt to quantify the number of state and national networks, cable entities, low power stations and television stations licensed in Puerto Rico, it may under-represent certain relocation costs. *See* Ad Hoc Survey at 3, n.8.

[95] MSS Coalition Petition for Reconsideration in ET Docket 95-18 (filed Mary 20, 1997) at 25.

[96] Except as noted below, our rules will take effect 30 days after publication of the Report and Order in the *Federal Register*. For purposes of calculating future dates – such as the sunset date or the end of the mandatory negotiation period – we will begin counting from the date that this Report and Order is published in the *Federal Register*. As described *infra*, we also establish a fixed sunset date for the relocation of FS incumbents.

[97] *See, e.g,* SBE Comments to the *AWS Further Notice* at 1; 2 GHz Broadcast Group Reply Comments to the *AWS Further Notice* at 3.

unused for a long period of time would result in inefficient use of valuable 2 GHz spectrum.[82] In addition, a two-phase transition was an appropriate means of spreading out overall MSS relocation costs when it appeared that MSS licensees would begin operations within the Phase I spectrum and would not need Phase II spectrum until much later – after their systems had grown and matured. Under that scenario, a multi-phase approach would reduce initial costs to MSS entrants because a smaller number of BAS licensees (those in markets 1-100) would need to be relocated during Phase I, and because it is more likely that existing BAS equipment could be retuned (versus replaced) in order to operate in 14.5-15 megahertz-wide channels (versus the final 12.5 megahertz-wide channels).[83] This plan also would have minimized the initial costs incurred by the Phase I MSS licensees.[84] At that time, MSS system proponents were "at widely differing points in the process of preparing to begin service."[85] Now, due to impending milestones, the difference in time between an "early" MSS entrant and a "later" MSS entrant will necessarily be small.

33. Were we to retain the two-phase relocation approach, MSS licensees would be responsible for the costs of relocating some BAS licensees to the Phase I channel plan, plus the costs of relocating all BAS licensees to the Phase II channel plan soon after. This situation would negate any cost-spreading benefits that were envisioned by a two-phase approach, and might even increase overall relocation costs over a relatively short term.[86] If Phase II of the transition is initiated during the time in which Phase I relocations are taking place, BAS operations may be on three different band plans, and some BAS licensees would face the disruption and down time associated with being twice relocated in a short period of time.

34. The *MSS Second Report and Order* also adopted a two-phase relocation plan because of the "significant likelihood" that little or no new equipment that would operate in the Phase II channels would be manufactured in time for MSS to begin service.[87] Much of the new equipment was anticipated to be purchased during Phase II of the transition, at which time the Commission predicted that digital BAS equipment would "benefit from more time for design development, becoming higher capacity, smaller, less expensive, and less power-intensive."[88] Such developments have taken place. BAS manufacturers now offer extensive lines of digital equipment that are designed to operate in a variety of

[82] *Id*, 15 FCC Rcd at 12327, para. 34 (stating that a phased approach will "assur[e] efficient use of the spectrum.") We also note that, although some time will be required to establish service rules and license new Fixed and Mobile entrants before they can secure entry into the band, the entry of these new AWS licensees may occur relatively quickly – especially in relation to the extended period of time some commenters had expected before MSS licensees would begin to use Phase II spectrum in the 2008-2025 MHz band. Thus, we can expect the band to be more fully and more quickly used by the combination of the remaining MSS licensees and new AWS licensees than was anticipated in the *MSS Second Report and Order*, when the band was to be exclusively used by MSS licensees whose systems were expected to be deployed and to grow consistent with then-distant milestones.

[83] *See id.*, 15 FCC Rcd at 12338, para. 67 (concluding that "much of the total cost of the BAS relocation is deferred to Phase II").

[84] *Id.*

[85] *Id.*, 15 FCC Rcd at 12330, para 43.

[86] *See* SBE comments to the *AWS Further Notice* at 2 ("th[e] increased hardware costs [associated with immediately beginning Phase II] would be largely offset by savings from MSS not having to reimburse broadcasters for the time and effort needed to make two conversions: first to Phase I, and a second time to Phase II.").

[87] *MSS Second Report and Order*, 15 FCC Rcd at 12325, para. 25. The Commission had not yet issued licenses to the MSS applcicants at the time the plan was adopted.

[88] *Id.*, 15 FCC Rcd at 12327, para. 35.

continue to use channel 2 until there were a significant number of MSS entrants so as to require use of the 2008-2025 MHz band. Now, however, more than half of the Phase I spectrum will be used for new Fixed and Mobile applications, such as AWS. Because each MSS licensee will be eligible to choose a five megahertz Selected Assignment in the revised MSS allocation, only one MSS licensee will be able to operate in the portion of the band that contains spectrum that will be available under Phase I of the relocation plan.[78] In the best case – one in which the first MSS entrant selects the lowest portion of the band[79] – the entry of the second MSS licensee will trigger Phase II of the relocation plan. If the first MSS licensee instead were to choose an assignment at 2005 MHz, 2010 MHz or 2015 MHz, its entry would immediately trigger Phase II.

31. We conclude that the practical effect of these changed circumstances is that new MSS licensees will begin using Phase II spectrum (2008-2025 MHz) sooner than was anticipated in the *MSS Second Report and Order*. Under the revised MSS allocation, no more than one MSS licensee may operate in the Phase I spectrum.[80] The second MSS licensee seeking to begin operations (assuming the first chooses 2000-2005 MHz as its Selected Assignment) would initiate the Phase II relocation process.[81] In order to meet the milestone requirements for MSS licensees – which require, for example, that non-GSO MSS licensees construct and launch the first two satellites in their system by January 17, 2005 – MSS licensees will need to act quickly to deploy their systems and it is therefore highly likely that BAS relocation to the Phase I channels would not be complete when Phase II starts.

32. The initiation of the Phase I relocation and quick transition to Phase II would undercut one rationale for a two-phase transition – that the potential to leave substantial amounts of spectrum

[78] Each "Selected Assignment" is created by dividing the available MSS spectrum into distinct segments of equal bandwidth, based on the number of licensees. Each MSS licensee may select one of these segments on which to conduct its primary MSS operations. Based on the revised MSS band plan and the four current MSS licensees, the Selected Assignment calculation is as follows: 20 megahertz uplink band plus 20 megahertz downlink band divided by four licensees – or 5 megahertz paired with 5 megahertz per licensee. On July 24, 2003, the National Association of Broadcasters and the Association for Maximum Service Television, Inc. filed a Petition seeking clarification that the discussion of MSS licensees' "primary" access to a portion of spectrum within the revised 2 GHz MSS band does not give MSS operators expanded rights vis-à-vis BAS licensees that currently occupy the band. *See* Petition for Clarification of the National Association of Broadcasters and the Association for Maximum Service Television, Inc., File Nos. 188-SAT-LOI-97; SAT-MOD-20020726-00113 et al.; 187-SAT-P/LA-97(96); 26/27/28-DSS-P-94 et al. (filed July 24, 2003). That is correct. An incumbent BAS licensee that holds "primary" status in this band will retain such status until it is relocated, ceases operation, or becomes secondary by operation of the sunset date, as described in detail in the *MSS Second Report and Order*, and as modified herein.

[79] For example, ICO has constructed its satellites to operate across the 1990-2015 MHz portion of the band. *AWS Third Report and Order*, 18 FCC Rcd 2223 at 2241, para. 35 n.100. In addition, the 2000-2010 MHz band overlaps with globally harmonized MSS spectrum, whereas the 2010-2020 MHz band overlaps with spectrum that has been designated for MSS use only in Region 2. Because some MSS licensees have indicated that they planned their systems to maximize use of the globally harmonized spectrum, it is reasonable to expect the first MSS licensees to seek to use the lower portion of the revised MSS band.

[80] Phase I spectrum under the revised MSS allocation consists of the 2000-2008 MHz band. Because there are currently four MSS licensees who will each choose a 5 MHz selected assignment in the 2000-2020 MHz MSS band, and because each licensee must choose a Selected Assignment that consists of an integer multiple from the band edge, the only option for a MSS licensee that wishes to operate entirely within the Phase I spectrum is to choose 2000-2005 MHz as its Selected Assignment.

[81] Under the current plan, Phase II is slated to begin "when the 18 megahertz of Phase I spectrum is no longer sufficient to meet MSS requirements," *MSS Second Report and Order*, 15 FCC Rcd at 12326, para. 30.

27. Commenters in both proceedings also ask that we eliminate market-differentiated relocation procedures. In response to the *AWS Further Notice*, the 2 GHz Broadcast Group claims that there is a "critical need" to ensure uniform use of the relocated BAS facilities that operate in adjacent markets.[71] Similarly, NAB/MSTV supports adoption of a nationwide relocation requirement.[72] In response to the *ATC Notice*, Andrew Funk – who identifies himself as a 2 GHz BAS frequency coordinator – claims that during the transition period the differing channel plans will reduce the news gathering capabilities of adjacent-market stations operating on a different channel plans and will render coordination of special events (such as sporting events and news coverage of natural disasters) difficult or impossible.[73]

28. Parties representing MSS interests generally ask that we not modify the existing relocation plan. Calling the current plan "complex but workable," in its filing in response to the *ATC Notice*, TIA-Satellite claims that a one-step process would require MSS licensees to bear enormous relocation costs, and thus intensify their up-front capital needs, before they even begin service.[74] TIA-Satellite claims that if we were to allow new entrants into the band and modifying the relocation procedures, we would risk undermining the accommodation the Commission previously determined was necessary in order to ensure MSS viability.[75] In response to the *ATC Notice*, ICO suggests that MSS-integrated ATC authority did not require large-scale modification of the already established relocation framework,[76] while Boeing claims that any change to the relocation procedures would call for corresponding changes to the 2 GHz MSS implementation milestones.[77]

29. *Decision.* We believe that the core interests that the Commission considered when it crafted the *MSS Second Report and Order* remain valid. The band will still host MSS licensees, and the unique, integrated nature of BAS has not changed. What has changed is that, in light of the decisions the Commission made in the AWS proceeding, we can expect additional new licensees to occupy the 1990-2025 MHz band. As discussed below, the reallocation changes our expectations as to how MSS and these additional new licensees will use the 1990-2025 MHz band and when these licensees can be expected to relocate BAS incumbents. It is necessary for us to put into place procedures that give new Fixed and Mobile Service entrants a realistic opportunity to seek early use of the band in exchange for the relocation of incumbent users, while minimizing the disruption to BAS incumbents to the extent possible.

30. Of the 15 megahertz of spectrum that we have reallocated from MSS in the 1990-2025 MHz band to support new Fixed and Mobile services, two thirds occupies the lower end (1990-2000 MHz) of the band and one third is situated at the upper end (2020-2025 MHz). The twenty megahertz of spectrum that remains for the four MSS licensees is situated in the 2000-2020 MHz portion of the band. Phase I of the transition was crafted so that BAS licensees would cease use of the frequencies occupied by the existing BAS channel 1 (1990-2008 MHz) in order to allow MSS entry into the band, but could

[71] 2 GHz Broadcast Group Reply Comments to the *AWS Further Notice* at 3.

[72] NAB/MSTV Comments to the *AWS Further Notice* at 11.

[73] Funk Comments to the *ATC Notice* at 3-4.

[74] TIA-Satellite Comments to the *AWS Further Notice* at 6-7.

[75] *Id.* at 5-6.

[76] ICO Reply Comments to the *ATC Notice* at 13-14.

[77] Boeing Reply Comments to the *ATC Notice* at 9-10.

the band will be a handful of MSS licensees whose operating characteristics require massive up-front costs before they begin generating revenue is now replaced by the prospect of many new AWS entrants in the band, the majority of whom are likely to take advantage of the quick facility deployment associated with terrestrial services, as well as revenue streams from existing operations.[63] NAB/MSTV further states that whereas the two-phase plan was designed to accommodate the gradual entry of MSS beginning at the lower end of the band, the reallocation makes it more likely that multiple entrants will seek to quickly use different parts of the band. It therefore argues that the existing plan is "simply incompatible" with the rapid deployment of AWS in the upper portion of the band (*i.e.*, 2020-2025 MHz).[64]

25. Other parties likewise claim that the introduction of new fixed and mobile services into a band that was previously identified solely for MSS undermines the premise for adoption of a two-phase plan. In response to the *AWS Further Notice*, SBE recommends that we immediately move to Phase II because of the introduction of new entrants into the band.[65] Both SBE and NAB/MSTV state the concern that a one-step BAS relocation could leave substantial amounts of spectrum unused pending MSS deployment – one benefit of a two-phase plan – no longer applies.[66] In its filings in response to the *ATC Notice*, the 2 GHz Broadcast Group states that the introduction of terrestrial services into the band necessitates that 2 GHz BAS incumbents be relocated in one step in all markets because of the likelihood that the band will be used more quickly and more robustly than would be likely under the prior MSS allocation and before the ATC decision.[67]

26. Many commenters to the *AWS Further Notice* also claim that a one-phase transition will reduce disruption of BAS services – a significant consideration in the development of the initial relocation plan. NAB/MSTV claims that a one-step process will reduce transaction costs as well as potential BAS interference.[68] SBE states that any additional initial costs associated with migrating all BAS users to the final channel plan in one step would be offset by the elimination of Phase I rechannelization costs and is appropriate because of the benefit that new entrants will have in obtaining quicker access to the BAS spectrum.[69] Nucomm, a BAS equipment manufacturer, claims that it will require a "huge and disruptive" effort by both BAS users and equipment manufacturers to effect each phase of frequency relocation, and therefore supports moving directly to a final band plan instead of undertaking the relocation effort twice.[70]

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[63] NAB Comments to *AWS Further Notice* at 9. *See also* 2 GHz Broadcast Group Reply Comments to the *AWS Further Notice* at 3 (the 2 GHz Broadcast Group consists of The Walt Disney Company, National Broadcasting Company, Inc., Viacom, Inc., Fox Television Stations, Inc., Tribune Company, Belo Corp., Hearst Argyle Television, Inc., LIN Television Corp., and Gannett Broadcasting Co.).

[64] NAB Comments to *AWS Further Notice* at 10.

[65] SBE Comments to the *AWS Further Notice* at 1.

[66] NAB Comments to the *AWS Further Notice* at 9; SBE Comments to *AWS Further Notice* at 1.

[67] 2 GHz Broadcast Group Comments to the *ATC Notice* at 1-6. *See also* NAB/MSTV Reply Comments to the *ATC Notice* at 4-10; Meredith Corporation Reply Comments in to the *ATC Notice* at 2.

[68] NAB/MSTV Reply Comments to the *AWS Further Notice* at 7.

[69] SBE Comments to the *AWS Further Notice* at 2.

[70] Nucomm *ex parte* filing in ET Docket No. 95-18 (filed May 12, 2003) at 6.

MSS Second Report and Order. We discuss these filings in greater depth in conjunction with our decision, below.

22. *Subsequent Developments*. After the establishment of the BAS/MSS relocation procedures, the Commission initiated two major rulemaking proceedings in which it proposed, or sought comment on, alternative uses and new allocations in portions of the 2 GHz band now allocated for MSS. In these proceedings, discussed above, the Commission acknowledged that any such reallocation could affect the relocation procedures adopted in the *MSS Second Report and Order* and sought comment on specific changes that may be necessary to these procedures. Comments filed in response to these proceedings address whether the entry of new licensees and the provision of new terrestrial services by MSS licensees warranted a revision to the existing two-phase market-differentiated relocation process. As discussed *supra*, we have suspended the expiration date of the two-year mandatory negotiation period in order to provide time to address these issues prior to the scheduled conclusion of the two-year mandatory BAS-MSS negotiation period for Phase I relocations in the top 30 BAS markets.[58] Each order included the option to lengthen or shorten the suspension of the expiration date as circumstances warrant.

2. Report and Order

23. *Background*. The current two-phase transition plan represents the Commission's effort to balance the unique interests of the MSS and BAS licensees in the band. The original Emerging Technologies relocation procedures were designed to allow for the gradual relocation of incumbents during a buildout period targeted to specific geographic areas. By contrast, the market coordinated nature of BAS makes a link-by-link relocation policy impractically disruptive, and the broad coverage area of an MSS signal will require relocation of incumbents over a broad geographical area.[59] A market-differentiated relocation is designed to allow for the continuity of a seven-channel BAS band plan in the markets where these channels are most needed, while allowing several years for relocation in the lighter-use markets. The Commission found that by adopting this approach, it could spread out the costs of BAS relocation, lessen the burden on equipment manufacturers and the personnel who would be required to replace or retune BAS equipment, and allow for advances in equipment development and design.[60]

24. Numerous commenters to both the *AWS Further Notice* and the *ATC Notice* address the phased, market-differentiated transition plan. In response to the *AWS Further Notice*, NAB/MSTV asks that we adopt a single-phase relocation for all BAS incumbents, in light of our decisions that have expanded the scope of MSS use of and new entrants eligible to use the 1990-2025 MHz band.[61] NAB/MSTV submits that the introduction of AWS into the band presents an opportunity to "rationalize and simplify" the relocation procedure.[62] Specifically, it argues that the concern that the only entrants in

[58] *Suspension Order*, 17 FCC Rcd 15141; *Second Suspension Order*, 18 FCC Rcd 18353; *Third Suspension Order*, DA 03-3543 (OET, rel. Nov. 4, 2003).

[59] *See MSS Second Report and Order*, 15 FCC Rcd at 12327, para. 34.

[60] *Id.*, 15 FCC Rcd at 12327, para. 35.

[61] NAB/MSTV Comments to the *AWS Further Notice* at 5. We note that prior to filing its comments to the *AWS Further Notice*, NAB/MSTV, in its petition for reconsideration, initially claimed that the two-phase relocation, as adopted, would cause substantial harm to small-market BAS stations and asked that we require the relocation of all BAS stations (not just those in the top 100 markets) to be relocated to the Phase I channel plan within 5 years of the start of Phase I. NAB/MSTV Petition for Partial Reconsideration of the *MSS Second Report and Order* at 5.

[62] NAB/MSTV Comments to the *AWS Further Notice* at 5.

i.e., a date after which MSS licensees would no longer be required to relocate BAS incumbents – as ten years following the start of the first negotiation period for relocation, which the Commission set as 30 days after publication of the *MSS Second Report and Order* in the *Federal Register* – *i.e.* September 6, 2000. Thus, the obligation to relocate incumbent BAS operations in the 1990-2025 MHz band is due to end on September 6, 2010.[52]

20. The Commission determined that the two-phase relocation plan described above, in conjunction with a market-differentiated cutover, served as an appropriate compromise between the interests of providing the least disruptive transition for incumbent BAS users and establishing a relocation mechanism that allowed new MSS entrants a realistic opportunity to take advantage of the Emerging Technologies principle that new service providers should be given an opportunity to negotiate financial arrangements for the reaccommodation of incumbent licensees in order to secure early entry into the frequency band. BAS is a critical component of the broadcasting system by which information and entertainment is provided to the American public. BAS is also highly integrated, such that the effective use of these frequencies has traditionally required the cooperation and coordination of all users in a particular market.[53] Given the structure and importance of BAS, the Commission concluded that it would be impossible to adopt a license-by-license relocation plan as has been done for fixed microwave services in previous Emerging Technologies relocations (as well as the 2165-2200 MHz relocation procedure we discuss elsewhere in this decision) without seriously disrupting BAS functions. In addition, the ubiquitous nature of MSS operations precludes the gradual build-out of facilities that previous Emerging Technologies entities have used to spread out their relocation costs.[54]

21. Because MSS is expected to cause interference to BAS channels on a nationwide basis once service starts, the Commission concluded that it was necessary to minimize costs to the extent possible for MSS licensees and to defer those costs where possible. The two-phase plan was designed to spread relocation costs over a greater time period while at the same time allowing for an orderly transition of BAS with minimum disruption.[55] These factors, as well as concerns regarding limits to equipment and labor availability, also led the Commission to conclude that a nationwide cutover (versus the market-differentiated cutover that was adopted) would not meet these goals.[56] Finally, because some MSS licensees were expected to begin service later than others, the *MSS Second Report and Order* noted that a one-phase cutover could leave substantial amounts of spectrum unused for a significant period of time.[57] Numerous comments filed in the MSS-ATC and AWS proceedings specifically discuss these BAS relocation procedures, as do four petitions for reconsideration and clarification filed in response to the

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three and five years of beginning service, depending on the BAS market and relocation phase. *See supra* paras. 17-18.

[52] Due to a typographical error, 47 C.F.R. §74.690(e)(1) states that the initial negotiation period begins on September 6, 2010, not September 6, 2000. 47 C.F.R. §74.690(e)(6) sets the sunset date as ten years after the date listed in subsection (e)(1). In the *Suspension Order*, we noted that the correct starting date, consistent with the discussion in the *MSS Second Report and Order*, is September 6, 2000. *Suspension Order*, 17 FCC Rcd at 15142, para. 2, n.8. Accordingly, the correct sunset date is September 6, 2010.

[53] *See* 47 C.F.R. § 74.604 (discussing the necessity of BAS licensees to work cooperatively to avoid interference including, where applicable, the use of local coordination committees).

[54] *MSS Second Report and Order*, 15 FCC Rcd at 12325, para. 27.

[55] *Id.*

[56] *Id.*, 15 FCC Rcd at 12324-25, para. 24.

[57] *Id.*, 15 FCC Rcd at 12327, para. 34.

required MSS licensees to relocate the 30 largest markets (*i.e.*, the "LA" and "Metro" categories) to the Phase I BAS channels before the MSS licensees would be allowed to begin operations. Once MSS operations begin, all BAS use of the 1990-2008 MHz band (channel 1) would be prohibited. As a practical matter, this means that in those markets whose facilities have not been relocated (*i.e.* the "Light" and "Rural" markets), BAS licensees would be able to continue to use "old" BAS channels 2-7 (2008-2110 MHz), but could no longer use BAS channel 1 (1990-2008 MHz). The new MSS licensee(s) would be required to complete relocation of BAS in the next 70 largest (*i.e.* "Light") television markets to the Phase I channel plan within three years of the date upon which MSS operations begin.

18. Under the existing plan, Phase II will be triggered when the Phase I spectrum is no longer sufficient to meet MSS requirements. Again, new MSS licensees are required to relocate the 30 largest markets to the "final" Phase II BAS channels (2025-2110 MHz) before the MSS licensees would be allowed to begin operations in the bands above 2008 MHz. Once MSS operations begin above 2008 MHz, all BAS incumbents will be prohibited from using the 2008-2023 MHz block.[49] From the date that MSS operations begin above 2008 MHz, MSS licensees will have three years to complete the relocation of BAS licensees in markets 31-100 (the "Light" markets), and five years to complete relocation of the remaining ("Rural" market) licensees. Because each of the seven Phase II channels will be only 12.1 to 12.4 megahertz wide, the Phase II transition is expected to be accompanied by a transition from widespread analog BAS operations to the use of digital equipment to ensure the necessary quality of service in the reduced bandwidth.

19. The Commission also established BAS negotiation periods and a relocation sunset date consistent with the general principles of the Emerging Technologies relocation procedures. For Phase I relocation, a two-year mandatory negotiation period began September 6, 2000, thirty days after publication of the *MSS Second Report and Order* in the *Federal Register*. After the mandatory negotiation period (during which time BAS and MSS licensees are required to negotiate in good faith), MSS licensees were to be given the option of involuntary relocation. Under this process, a MSS licensee may, at its own expense, make necessary modifications to or replacement of the incumbent licensee's BAS equipment in order to effect the relocation of the BAS facilities. Under the relocation process set forth in the *MSS Second Report and Order*, an additional two-year mandatory negotiation period for BAS markets 31-100 would begin after the first MSS entrant began operation in Phase I spectrum, to be followed by the option of involuntary relocation.[50] Similar mandatory negotiation periods would take place during Phase II of the relocation, running from the date on which the first MSS licensee informs BAS incumbents of its desire to begin negotiations.[51] The Commission also established a "sunset date" –

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number of TV households in that particular market decreases. Thus, DMA 7 represents a geographic area that contains a substantially larger TV audience population than DMA 174.

[49] 47 C.F.R. § 74.690(e)(4). Although the reallocated BAS spectrum consists of 1990-2025 MHz, the Commission decided that during Phase II, a MSS licensee needing the 2023-2025 MHz portion of the MSS band would not be allowed to begin service until all BAS licensees have been relocated to the final Phase II channel plan. It did decide to permit a MSS licensee to accelerate the relocation process at its own expense. The Commission limited MSS use of this 2 megahertz of spectrum during the transition because BAS channel 1 was slated to operate at 2023-2037.5 MHz under the Phase I channelization.

[50] *MSS Second Report and Order*, 15 FCC Rcd at 12339, para. 74.

[51] *Id.* These periods relate to the manner by which MSS and BAS licensees are to conduct relocation negotiations. Although a MSS licensee may involuntarily relocate a BAS incumbent at any time after the expiration of the mandatory negotiation period, MSS licensees have an overarching obligation to relocate BAS incumbents within
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15. *Relocation Plan.* Early in the process of evaluating MSS use of the 1990-2025 MHz band, the Commission studied the feasibility of sharing between MSS and BAS at 1990-2025 MHz and concluded that such sharing is not feasible because of the potential for interference between MSS uplinks and the variety of fixed and mobile BAS facilities that currently operate in the band.[41] In the *MSS Second Report and Order*, the Commission concluded that BAS operations could continue to be effective even if the BAS allocation is reduced from the seven-channel 120 megahertz allocation in the 1990-2110 MHz band to a seven-channel 85 megahertz allocation in the 2025-2110 MHz band.[42] Under the relocation plan adopted by the Commission, the individual BAS channels will be reduced to approximately 12 megahertz each. This decision did not affect use of 33.5 megahertz in the 2450-2483.5 MHz band allocated for BAS channels 8-9, as well as grandfathered use of BAS channel 10.[43]

16. The adopted relocation process for 2 GHz BAS consists of two phases in which the existing BAS channels are successively narrowed in width. The plan calls for BAS licensees to move to a "Phase I" channelization plan that consists of seven channels within 102 megahertz of spectrum at 2008-2110 MHz. This plan consists of six 14.5 megahertz-wide channels and one 15 megahertz-wide channel. MSS licensees would bear the cost of retuning or replacing BAS equipment to operate on the narrower channels, although the migration to 14.5 or 15 megahertz wide channels likely would be accomplished through retuning equipment, at a less expensive cost compared to replacing equipment. Later, BAS licensees would be limited to the 2025-2110 MHz band and operate under seven "Phase II" BAS channels within the final 85 megahertz-wide band. Under the current plan, six of the Phase II channels will be 12.1 megahertz wide and one will be 12.4 megahertz wide.[44] Again, MSS licensees would be required to pay for the cost of relocating BAS licensees to operate in the reduced bandwidth.[45] As during Phase I, this could be accomplished by retuning or replacing equipment, although the migration to 12 megahertz-wide channels would likely require more pre-existing BAS equipment to be replaced (at greater cost than being retuned) during Phase II than during Phase I. The relocation plan also permits a MSS licensee that demonstrates to the Commission that it is capable of sharing spectrum with BAS and that would operate solely in a portion of the band that had not been cleared to be exempt from BAS relocation.[46]

17. In the *MSS Second Report and Order*, the Commission also recognized four broad categories of BAS markets based on the nature and intensity of BAS use, and incorporated these categories into the relocation plan.[47] These categories are "LA," representing the Los Angeles television market; "Metro," consisting of the remaining top 30 television markets; "Light," which is made up of markets 31-100, and "Rural," representing all television markets 101 and above.[48] The Commission

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[41] *MSS First Report and Order*, 12 FCC Rcd at 7401, para. 30.

[42] *MSS Second Report and Order*, 15 FCC Rcd at 12319, para. 13.

[43] *See* 47 C.F.R. § 74.602.

[44] *See* 47 C.F.R. § 74.602(4)(i).

[45] The *MSS Second Report and Order* also established cost-sharing provisions that are designed to ensure that all MSS licensees that benefit from relocation of BAS incumbents share in the relocation expenses. *See MSS Second Report and Order*, 15 FCC Rcd at 12336-38, paras. 64-69.

[46] *See id.*, 15 FCC Rcd at 12339, para. 74; The Establishment of Policies and Service Rules for the Mobile Satellite Service in the 2 GHz Band, IB Docket No. 99-81, *Report and Order*, 15 FCC Rcd 16127, 16142, para. 25 (2000).

[47] *MSS Second Report and Order*, 15 FCC Rcd at 12322-23, para. 19. These market differentiations were originally suggested by SBE in comments to the 2 GHz relocation rulemaking. *Id.*

[48] By "above" we mean those markets whose corresponding Nielsen DMA identification number is greater. *E.g.*, a reference to "markets 31 and above" would include market 134. As the number of a DMA market increases, the (continued....)