not operate on a co-primary basis with MSS users.[52] In addition, the Commission bolsters its proposal to relocate FS users from the 2165-2200 MHz band because the paired FS channels at 2110-2145 MHz also would be reallocated to make room for BAS users.[53] These assumptions, however, are not necessarily valid.

First, as described above, the Commission has not proven that BAS users need all 35 MHz that the Commission would reallocate for them in the 2110-2145 MHz band. Thus, the Commission's assumption, that FS users in the 2165-2200 MHz band must be moved because their paired channels in the 2110-2145 MHz band would be eliminated, is unavailing.

Second, sharing between FS and MSS users in the 2165-2200 MHz band might be possible. Rather than taking a "blunderbuss" approach, and moving all FS users from the 2165-2200 MHz band, the Commission should review this issue more precisely. Before reallocating this band, it must review each FS path in the 2165-2200 MHz band to determine if, in fact, it could be operated on a co-primary basis with MSS users.

Specifically, industry needs time to develop criteria for FS/MSS sharing in the 2165-2200 MHz band. Data were developed in the CPM Report for WRC-95 indicating that sharing could be possible.[54] However, as Motorola indicates, these data are "somewhat

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[52]NPRM at paras. 10-11.

[53]NPRM at para. 12.

[54]CPM Report on Technical, Operational and Regulatory/Procedural Matters to be Considered by the 1995 World Radiocommunication Conference, ITU-R, Report E (April 25, 1995).

equivocal" and could compel development of a phased transition plan for FS systems in the 2165-2200 MHz band.[55] In contrast, COMSAT claims that:

> contrary to the Commission's assumption in the NPRM, existing fixed services . . . in the United States can satisfactorily share spectrum with MSS downlinks and do not need to be relocated.[56]

With this uncertainty, myriad issues must be reviewed to determine if sharing between FS and MSS users in the 2165-2200 MHz band could occur or if a specific relocation plan must be adopted. These issues include establishing criteria for: (i) MSS and FS power levels; (ii) FS systems using Automatic Transmitter Power Control; (iii) allowable maximum receiver threshold degradation limits for digital systems; (iv) acceptable levels of total accumulated noise for analog systems; (v) criteria for measuring interference into FS receivers from all satellites;[57] and (vi) maintaining consistency with the ITU-R channeling plans for the 1980-2010 and 2170-2200 MHz bands. In addition, the COMSAT sharing approach compels further industry study.

TIA acknowledges the impact that MSS systems would have on FS systems in the 2 GHz band and the corresponding difficulty in developing viable sharing criteria. Nevertheless, with enough "breathing room," it is quite possible that industry groups, with the cooperation of the Commission, could develop criteria that would minimize the number of evicted FS users and that would delay the move of others.

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[55]Motorola at 16-17.

[56]COMSAT at 3.

[57]Typically, FS receivers are vulnerable to interference from 1-2 transmitters. However, with MSS, FS receivers are vulnerable to interference from the entire array of satellites. Thus, interference from MSS satellites into FS receivers should be calculated in the aggregate.

These same issues have been addressed in the ET Docket No. 92-9 PCS spectrum allocation proceeding. In that proceeding, FS users were relocated to bands above 3 GHz to clear spectrum for PCS. The TIA TR14.11 Committee worked with all industry segments and developed the sharing criteria for FS/PCS that is being used to ensure a seamless transition in the 2 GHz band to PCS and to ensure that FS users are protected against harmful interference.[58] A similar approach could be imposed regarding FS/MSS sharing in the 2165-2200 MHz band, as TIA is committed to work with the Commission, MSS industry representatives and others to develop appropriate criteria. If the Commission ignores the record of this rule making and rushes to reallocate the 2 GHz band for MSS, this necessary effort could not take place.

Both Loral and Constellation urge that similar industry-wide studies be conducted.[59] Loral recommends establishing a Federal Advisory Committee to study these issues.[60] Constellation states that

> technical studies should be conducted to insure that the most spectrum efficient transmission techniques are being used in any terrestrial services subject to relocation . . . . Also, additional technical studies should be undertaken of the terrestrial channelization plans to minimize any cost of relocation.[61]

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[58]See "Telecommunications Systems Bulletin No. 10-F, Interference Criteria for Microwave Systems," which prescribes standards for implementing the new FS radio channel plans for the bands above 3 GHz and for establishing criteria regarding 2 GHz band PCS-to-FS interference protection.

[59]Loral at 12-14; Constellation at 3-4.

[60]Loral at 14-16.

[61]Constellation at 3-4 (footnote omitted).

IF RELOCATION OF FS USERS IS JUSTIFIED, IT MUST BE EQUITABLE AND CONSISTENT WITH ET DOCKET NO. 92-9 GUIDELINES

Unfortunately, the Commission now has experience in moving 2 GHz FS users. With this experience, the Commission

> decided that the emerging technology service provider must guarantee payment of all relocation expenses, build the new microwave facilities at the relocation frequencies, and demonstrate that the new facilities are comparable to the relocated facilities. We propose to apply our involuntary relocation policy to the additional spectrum addressed in this proceeding (1990-2025 MHz and 2165-2200 MHz). Our policy ensures that all incumbent entities required to relocate their operations would receive equivalent or better facilities at no cost to them.[62]

These proposed relocation safeguards must, at a minimum, be adopted. The FS industry would accept no less:

> UTC supports the imposition of the previously-adopted transition rules for emerging technology access to 2 GHz spectrum to MSS licensees in the 2 GHz band. In ET Docket 92-9, the FCC sought to balance the desire to introduce emerging technologies into the 2 GHz band with the need "to prevent disruption of existing 2 GHz services and minimize the economic impact on the licensees of those services." These rules were to apply to all emerging technology services licensed in the 1850-1990, 2110-2150 and 2160-2200 MHz bands, and as such, should apply to 2 GHz MSS.
>
> * * * * * * * *
>
> UTC supports the FCC's proposal to apply the well-crafted transition rules to the introduction of 2 GHz MSS. In particular, UTC supports: (1) the payment of all relocation expenses by the new commercial providers; and (2) the transition of incumbent operations only to tested, comparable facilities.
>
> * * * * * * * *
>
> It is only fair that the costs relating to the relocation of incumbent users be borne by those commercial providers who are benefitting directly from the 2

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[62] NPRM at para. 11.

> GHz band. The providers of MSS service will consider the cost of the relocation in their decision to enter the marketplace and in setting user rates. Any costs that a utility microwave licensee would incur as the result of the licensing of MSS would be passed to utility rate payers in the form of higher utility prices. It is fairer to have these costs passed to the customers of the MSS services, as these consumers can better choose whether to bear the cost or seek alternative communications media.[63]

Similarly, API requests that FS users be protected adequately:

> API strongly supports the Commission's proposal to require new MSS licensees to provide comparable communications facilities for displaced [FS] incumbents. API additionally endorses the Commission's proposal to compel licensees to demonstrate that the replacement facilities are comparable to former facilities and, if not, to provide one year in which to reinstate incumbents to their former facilities until comparable facilities are achieved. API supports the Commission's proposal to require new licensees to pay the full costs of relocation to comparable facilities.[64]

Finally, as APCO urges, public safety communications users must be protected appropriately.[65]

Establishing criteria for compensating relocated FS users thus is an essential predicate to implementation of the Commission's proposed reallocation. While FS users unanimously support such safeguards, if the Commission proves that the 2 GHz MSS reallocation is in the public interest, there is still undeniable disagreement among MSS users regarding which entities must provide the compensation.[66] Resolving this debate could take additional time

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[63]UTC at 2-3 (footnote omitted). See also AAR at 5.

[64]API at 13. In addition, API encourages the Commission to "adopt a clearer definition of what constitutes 'comparable facilities.'" Id. at 13.

[65]APCO at 6. See also API at 13; BellSouth at 3-4.

[66]See, e.g., Iridium at 2; TRW at 3, 5-10; PCSAT at 6-11; Loral at 16-20; Motorola at 15-22; COMSAT at 11-15.

and is yet another reason to delay any action on the Commission's proposed reallocation of the 2 GHz band for MSS users.

CONCLUSION

Accommodating MSS users is in the public interest. It is a technology that will provide great benefits and should be provided the opportunity to evolve.

As demonstrated herein, however, numerous critical issues still must be resolved before reallocating the 2 GHz band for MSS can be adopted. The impact upon existing services needs to be considered much more thoroughly prior to making such sweeping decisions on spectrum allocations, as are being proposed in the NPRM:

- The amount of spectrum to be reallocated must be determined.
- Availability of spectrum above 3 GHz for displaced 2 GHz FS users must be determined.
- The need for BAS users to keep 35 MHz must be determined.
- The possibility of FS and MSS users sharing the 2165-2200 MHz band, on a co-primary basis, must be determined.
- Responsibility for which entities would compensate displaced 2 GHz FS and BAS users must be determined.

Answers to these questions will take some time to achieve. Fortunately, time is available because international implementation of MSS is several years away. Consequently, since the MSS interests are willing to wait for these issues to be resolved, and because the record dictates that further evaluation of these issues must be conducted, there certainly is no reason for the Commission to be impatient at this time. The Commission is, therefore, urged to defer further consideration of this NPRM until: (i) the results of WRC-95 are

available; and (ii) the necessary studies discussed herein and by several commenters have been completed.

Respectfully submitted,

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ATTACHMENT A

American Petroleum Institute ("API")
Association of Public-Safety Communications Officials-International, Inc. ("APCO")
Association of American Railroads ("AAR")
Association for Maximum Service Television, Inc. and Other Major Television Broadcasting Entities ("MST")
BellSouth Corporation, BellSouth Telecommunications, Inc., BellSouth Enterprises, Inc., BellSouth Wireless, Inc., and BellSouth Personal Communications, Inc. (collectively, "BellSouth")
Celsat America, Inc. ("Celsat")
COMSAT Corporation ("COMSAT")
Constellation Communications, Inc. ("Constellation")
Creative Broadcast Techniques, Inc. and The New Vision Group, Inc. ("Creative/New Vision")
Ericsson Corporation ("Ericsson")
GE American Communications, Inc. ("GE Americom")
Hughes Telecommunications and Space Company ("Hughes")
Iridium, Inc. ("Iridium")
Loral/QUALCOMM Partnership, L.P. ("Loral")
Motorola, Inc. ("Motorola")
Newcomb Communications, Inc. ("Newcomb")
Personal Communications Satellite Corp. ("PCSAT")
Society of Broadcast Engineers, Inc. ("SBE")
Southwestern Bell Mobile Systems, Inc. ("SBMS")
Teledesic Corporation ("Teledesic")
TRW, Inc. ("TRW")
UTC

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