

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)	
)	
Reallocation of the 216-220 MHz,)	
1390-1395 MHz, 1427-1429 MHz,)	ET Dkt. No. 00-221
1429-1432 MHz, 1432-1435 MHz,)	RM-9854
1670-1675 MHz, and 2385-2390 MHz)	
Government Transfer Bands)	

REPLY OF ITRON, INC.

Itron, Inc. (“Itron”), by its attorneys, hereby replies to the comments filed regarding the above-referenced Notice of Proposed Rulemaking (“NPRM”). For the reasons set forth below and in its initial comments, Itron urges the Commission to allocate the 1427-1432 MHz band on a co-primary basis for utility telemetry operations (“Utility Telemetry”), including automatic meter reading (“AMR”), and Wireless Medical Telemetry Services (“WMTS”).

INTRODUCTION AND SUMMARY

In the NPRM, the Commission asked for comment on a number of proposals regarding, among other things, the reallocation of the 1.4 GHz band. As Itron discussed in its comments, the FCC has long permitted utility telemetry operations at 1427-1432 MHz on a secondary basis to government stations, and Itron holds a nationwide license in the band. In the NPRM, the Commission identified three possible allocation “Options” for frequencies in the 1.4 GHz band.

- Of the 13 MHz of 1.4 GHz spectrum that are under consideration in this proceeding, Option 1, favored by land mobile interests, would dedicate 10 MHz to the private mobile radio service (“PMRS”). This option would pair 1390-1392 MHz with 1427-1429 MHz for frequency coordinated PMRS spectrum, and would pair 1392-1395 MHz with 1432-1435 MHz for PMRS spectrum that band managers could bid on at auction. Utility Telemetry would be upgraded to primary status with WMTS in the 1429-1432 MHz band, but would have to share those 3 MHz with WMTS.

- Option 2 would provide 8 MHz of additional spectrum for PMRS, while at the same time addressing the needs of Utility Telemetry and WMTS. As in Option 1, 1392-1395 MHz would be paired with 1432-1435 MHz, and in addition 1390-1392 would be made available for PMRS on an unpaired basis.

The remaining 5 MHz of 1.4 GHz spectrum would be shared by WMTS and Utility Telemetry. The 1427-1429 MHz band would be allocated on a primary basis exclusively for Utility Telemetry, and Utility Telemetry and WMTS would share 1429-1432 MHz on a co-primary basis by. Itron and the American Hospital Association Task Force on Medical Telemetry (“AHA”) have suggested modifying this proposal so that, rather than having 1427-1429 MHz allocated exclusively for Utility Telemetry, it would be allocated co-primary to Utility Telemetry and WMTS, as the Commission already has proposed in Option 2 for 1429-1432 MHz.¹

- Option 3 dedicates the same 8 MHz to PMRS as Option 2, but limits the total allocations for WMTS and Utility Telemetry to 3 MHz in order to accommodate the desires of NVNG MSS licensees (“Little LEOs”). This option sets aside 1430-1432 MHz for Little LEO feeder downlinks. WMTS would be shifted to 1427-1430 MHz, which it would have to share on a co-primary basis with Utility Telemetry.

Based on the record in this proceeding, it is evident that only Option 2 would provide adequate spectrum for Utility Telemetry and WMTS, accommodate the installed base of Utility Telemetry networks, and protect government and radio astronomy users of the 1.4 GHz band and adjacent frequencies.² Accordingly, Itron urges the Commission to adopt Option 2, with the modification suggested in Itron’s initial comments.

¹ It appears that the Commission crafted Option 2 based on a misunderstanding of a joint letter, dated May 31, 2000, that Itron and AHA filed in the WMTS rulemaking (ET Docket No. 99-255). The Commission correctly understood the parties to be proposing in their letter that the entire 1427-1432 MHz band be made available on a primary basis for Utility Telemetry. What apparently was not clear to the Commission is that Itron and AHA also intended for the entire band to be made available on a primary basis for WMTS, necessitating that the Commission extend the primary allocation it had made for WMTS at 1429-1432 MHz. Absent this extension, WMTS would be limited in the 1.4 GHz band to sharing 3 MHz with WMTS. Given that Utility Telemetry and WMTS cannot coexist co-frequency in the same area, such a sharing arrangement effectively would reduce the WMTS allocation in the band to 1.5 MHz, which is inadequate. See AHA Comments at 6-9.

DISCUSSION

I. Utility Telemetry Advances The Public Interest.

In its initial comments, Itron explained how AMR technologies improve dramatically the accuracy and reliability of meter reading. Specifically, Utility Telemetry can reduce energy costs, help shift usage to off-peak hours, encourage conservation, and improve customer service.³ These efficiencies are increasingly important from a public policy perspective as utility services are deregulated and states face growing pressure to ensure the reliable delivery of energy to businesses and consumers. The ongoing power shortages in California underscore the need for utilities and other energy suppliers to have accurate and timely information concerning the requirements of their customers, and to have the capability to monitor and control power distribution.

Comments filed by other parties further illustrate the benefits of Utility Telemetry. KeySpan Energy Delivery Corporation (“KeySpan”), for example, points out that AMR technologies can be used to detect meter tampering, increase utility efficiency, and increase the speed at which utilities can respond to natural disasters and other threats to public health or safety.⁴ Southern Company likewise notes that AMR systems make “it possible for a meter reader to increase by a factor of ten, twenty, or more the number of meters that can be read in an eight-hour shift” while encouraging energy conservation.⁵

² The 1427-1432 MHz band will continue to be used for military operations for a number of years. FCC Plan for Reallocated Spectrum, 11 FCC Rcd 17841 (1996). In addition, the adjacent 1400-1427 MHz band is used for radio astronomy operations that will need to be protected indefinitely.

³ Itron Comments at 4-6.

⁴ KeySpan Comments at 2-4. See also UTC/APPA Comments at 5-6 (Utility Telemetry can increase productivity and efficiency, establish a direct link between a utility and its customer premises utility meters, and benefit utilities in a deregulated environment); Gainesville Regional Utilities (“GRU”) Comments at 2-4 (AMR technologies increase utility productivity and efficiency).

⁵ Southern Company Comments at 3-4. See also Comments of Crawfordsville Electric Light & Power (March 26, 2001).

No party to this proceeding seriously questions the importance of Utility Telemetry/AMR services. A few parties, representing land mobile or Little LEO interests, suggest that utility telemetry operations could be accommodated under either Option 1 or Option 3.⁶ As explained below, however, that is not the case, particularly when the complementary spectrum needs of WMTS and Utility Telemetry are taken into account. The spectrum sharing plan that Itron and AHA have developed would provide for efficient operation of both WMTS and Utility Telemetry, while at the same time protecting federal government and radio astronomy users. Accordingly, Option 2, with minor modification, is the best allocation plan for the 1.4 GHz band.

II. The Record Supports Adoption Of A Modified Option 2.

As discussed in their comments, Itron and AHA have developed a band sharing plan for 1427-1432 MHz. This plan, which is a slightly modified version of Option 2, would enable Utility Telemetry and WMTS to share 5 MHz of spectrum from 1427 MHz to 1432 MHz on co-primary basis, subject to a frequency management plan. The remaining 8 MHz of 1.4 GHz spectrum that is under consideration in this proceeding would be available for the PMRS.

Taking into account the fact that Utility Telemetry and WMTS cannot operate on the same frequencies in the same place, the Itron/AHA frequency management plan in general makes Utility Telemetry primary in 1429.5-1432 MHz, and WMTS primary in 1427-1429.5 MHz. Special provisions, however, would enable Utility Telemetry systems that already are using 1427-1429 MHz to continue operating and would make it possible to squeeze in additional Utility Telemetry and WMTS facilities on a secondary, non-interference basis.

Itron and AHA demonstrated in their comments that their proposed plan will provide substantial flexibility to users of both services while promoting efficient spectrum use, and a number of parties have supported adoption of Option 2 in some

⁶ See, e.g., Comments of Final Analysis Communications Services, Inc.; Comments of Orbital

form.⁷ The other options identified in the NPRM, by way of contrast, lack Option 2's essential characteristics. They do not provide adequate spectrum for Utility Telemetry or WMTS. They do not accommodate the installed base of Utility Telemetry networks. And they are inefficient, because they give rise to conflicts with other users.

Inadequate Spectrum for Utility Telemetry and WMTS

Options 1 and 3 contemplate that Utility Telemetry and WMTS would have to share 3 MHz, reducing the spectrum that is effectively available to each to 1.5 MHz. Such an allocation would be inadequate for either Utility Telemetry operations or WMTS.

In its initial comments, AHA explained in detail how the public interest reasons that motivated the Commission to adopt a WMTS allocation at 1.4 GHz less than one year ago remain compelling today.⁸ An allocation decision in this docket limiting WMTS to 3 MHz of spectrum to be shared with Utility Telemetry services would undercut the Commission's recent efforts to ensure that there would be adequate spectrum for WMTS in all markets. As AHA established, "[t]hree megahertz of spectrum simply is not sufficient spectrum to meet the needs of both WMTS and utility telemetry operating in the same geographic area."⁹

Similarly, Itron has shown that, under Options 1 and 3, if "either service [*i.e.*, Utility Telemetry or WMTS] were to use 2 MHz in a market • and Itron already operates AMR systems in a number of markets that use 2 MHz – then only a single MHz would remain in the market for the other user."¹⁰ Neither the land mobile

Communications Corporation; Comments of the Land Mobile Communications Council ("LMCC");
⁷ E.g., Comments of Reliant Energy, Incorporated; Comments of KeySpan; Comments of GRU; Comments of the Southern Company; Comments of Crawfordsville Electric Light & Power. See also UTC/APPA Comments at 5-6 (advocating adoption of either Option 1 or Option 2, and recognizing that Option 2 provides necessary spectrum for Utility Telemetry).

⁸ AHA Comments at 3-6.

⁹ AHA Comments at 9.

¹⁰ Itron Comments at 11-12.

interests supporting Option 1 nor the Little LEO interests supporting Option 3 address this central defect in their proposals.

Lack of Accommodation for Utility Telemetry Installed Base

The supporters of Options 1 and 3 also give short shrift to the installed base of systems in the 1.4 GHz band. Itron and its customers have invested hundreds of millions of dollars in the development and use of AMR systems for 1427-1432 MHz frequencies;¹¹ Options 1 & 3 put this investment at risk.

Option 1 would relegate Utility Telemetry to 1429-1432 MHz, away from the lower portion of the band, which the Commission has recognized is “heavily used for utility telemetry equipment.”¹² Option 3 would allocate the lower portion of the band to Utility Telemetry, but in a cramped 3 MHz shared with WMTS that would preclude effective operations. As the utilities participating in this proceeding have observed, because of the installed base of AMR systems at 1.4 GHz, adoption either of Option 1 or Option 3 would be costly, disruptive, and inefficient.¹³

Conflicts With Other Users

The supporters of Options 1 and 3 also fail to come to grips with fundamental incompatibilities between the proposed allocations and other co-channel and adjacent channel uses. Both options would place high power land mobile operations on frequencies that are adjacent to sensitive, low power WMTS devices. As discussed by AHA, WMTS cannot operate adjacent to land mobile systems without employing expensive filtering devices or establishing a guard band that will significantly reduce the spectrum available for WMTS purposes.¹⁴

¹¹ See, e.g., KeySpan Comments at 1 (1,200,000 AMR devices on customer meters); Southern Company Comments at 1 (pilot testing AMR network that has the potential to expand to 300,000 accounts); GRU Comments at 2 (uses AMR networks to read over 175,000 meters monthly).

¹² WMTS Report and Order ¶ 21.

¹³ E.g., KeySpan Comments at 4; GRU Comments at 3.

¹⁴ AHA Comments at 14.

Similarly, Options 1 and 3 would allocate to PMRS 1.4 GHz spectrum that federal government users will continue to occupy for several years. The Commission already has found that “continued Federal operation ... will likely significantly impair the ability of the private sector to implement services in the band until the cessation of Federal operations,”¹⁵ and even one of the supporters of Option 1 is “concerned that the majority of the 1.4 GHz band is not available until 2006.”¹⁶ Utility Telemetry systems, by way of contrast, operate at much lower power levels that have enabled them to co-exist in the band with federal government users for many years.

Finally, it is clear from the comments that WMTS and Utility Telemetry users cannot reasonably be expected to share spectrum with Little LEOs. AHA concluded in its comments that “a commercially viable Little LEO service would cause significant interference to other users of the band.... Little LEOs remain a less attractive co-primary user of WMTS spectrum.”¹⁷ Moreover, “because Little LEO downlinks will have ubiquitous, nationwide coverage, the potential for interference to a number of WMTS facilities would be great, while [it would be extremely difficult] to detect and isolate the source of the interference.”¹⁸

As discussed in Itron’s comments, low power Utility Telemetry devices face similar constraints, exacerbated by the fact that many Utility Telemetry installations are outdoors, eliminating the possibility that buildings will attenuate the feeder downlink signal.¹⁹ The Little LEOs, moreover, would interfere with government operations, prompting NTIA to state unequivocally that “reallocation of the 1427-1432 MHz band

¹⁵ FCC Plan for Reallocated Spectrum, 11 FCC Rcd 17841, FCC 96-125, ¶ 28 (1996).

¹⁶ Motorola Comments at 5.

¹⁷ AHA Comments at 10.

¹⁸ See AHA Comments at 10 n.21. By contrast, Utility Telemetry uses are geographically limited so that, with geographic separation, WMTS and Utility Telemetry services can use the same channels.

¹⁹ Itron stated in its comments that one Little LEO company, Final Analysis, had presented it with a revised technical proposal for operating feeder downlinks in the 1427-1432 MHz band, which it was in the process of evaluating. Although the proposal represented an improvement over past proposals, it still is associated with power levels that would cause unacceptable interference to Utility Telemetry.

for airborne and space-to-earth applications must be avoided.”²⁰ The Commission should not be making allocations that present major interference issues.

III. No Reasonable Objection To Option 2 Has Been Raised.

The Commission need not be concerned with the complaints that some parties have made concerning Option 2. LMCC objects that Option 2 would “create a large amount of spectrum for a single use.”²¹ To the contrary, Option 2, modified as suggested by Itron and AHA, would provide a spectrum home for two separate classes of technologies that provide multiple business and consumer services. As the Commission has recognized, there is a critical need for WMTS services, which will be used to offer high quality, low cost health care to patients with acute and chronic medical needs.²² Similarly, the Commission long has recognized the importance of the services that AMR systems provide.²³ The suggestion, therefore, that Option 2 represents an inefficient allocation of spectrum is wide of the mark.

Similarly overstated is the objection posed by Final Analysis and Orbital Communications that adoption of Options 1 or 2 could raise questions internationally about U.S. support for the satellite industry.²⁴ At the outset, it should be noted that the Little LEOs have been on notice for some time that the Commission intended to consider allocation of the 1429-1432 MHz band for other services.²⁵ They can hardly claim surprise if the Commission sets aside these frequencies for WMTS and Utility Telemetry.

The United States, moreover, has made no commitment to establish an international feeder link allocation at 1.4 GHz, and neither has the ITU. There simply

²⁰ WMTS NPRM ¶ 28.

²¹ LMCC Comments.

²² WMTS Order ¶ 7.

²³ Amendment of Sections 22.501(g)(2) and 94.65(a)(1) of the Rules and Regulations to Re-Channel the 900 MHz Multiple Address Frequencies, 3 FCC Rcd 1564 (1988). See also NPRM ¶ 25.

²⁴ See, e.g., Comments of Final Analysis; Comments of Orbital Communications.

²⁵ See Amendment of Parts 2 and 95 of the Commission’s Rules to Create a Wireless Medical Telemetry Service, ET Docket No. 99-255 (rel. July 16 1999) (“WMTS NPRM”) ¶ 21.

was an understanding “to study the feasibility of Little LEO feeder links [at 1.4 GHz].”²⁶ As subsequent developments amply demonstrate, however, interference poses an insuperable obstacle to a Little LEO feeder link allocation at 1430-1432 MHz. NTIA has stated unequivocally that “reallocation of the 1427-1432 MHz band for airborne and space-to-earth applications must be avoided,”²⁷ and the radio astronomy community consistently has opposed using 1427-1432 MHz for feeder downlinks. Similarly, Little LEO feeder links are incompatible for reasons of interference with Utility Telemetry and WMTS operations.²⁸ Put simply, the 1.4 GHz band is the wrong place for Little LEO feeder downlinks.

²⁶ NPRM ¶ 28 n. 64.

²⁷ WMTS NPRM ¶ 28.

²⁸ See Itron Comments at 7-8; Amendment of Parts 2 and 95 of the Commission’s Rules to Create a Wireless Medical Telemetry Service, ET Docket No. 99-255, NPRM, Comments of AHA at iii, 9

CONCLUSION

Under the modified version of Option 2 outlined in the initial comments of Itron and AHA, the Commission can provide adequate spectrum for Utility Telemetry and WMTS, make additional spectrum available for PMRS, and protect federal government operations and radio astronomy users. Conversely, the benefits provided by WMTS and Utility Telemetry would be in jeopardy if the Commission were to adopt Option 1 or Option 3, and the Commission would face conflicts with federal government and radio astronomy users. Thus, for the reasons set forth herein and in Itron's initial comments, the Commission should adopt a modified version of Option 2.

Respectfully submitted,

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